

ABSTRACTS OF THE WORKS PRESENTED AT THE



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Basic Sciences

Macrophages and mast cells mediate MTA-induced neutrophil migration

Gomes, A.C.; Filho, J.E.G.; Oliveira, S.H.P.

Mineral trioxide aggregate (MTA) induces inflammation but the mechanisms involved on neutrophil migration during this process are unknown. The purpose of this study was to investigate the inflammatory mediators involved on neutrophil migration (NE) induced by MTA, as well as, the role of the resident cells on the release of chemotactic factor. Mice were pre-treated with anti-inflammatory drugs 30 minutes before the stimulus injection. Resident cells role was investigated using the increase of macrophage population with thylglycolate and mast cell depletion with 48/80 compound. Identification of the NE chemotactic factors in the peritoneal exudate was evaluated by ELISA. MTA induced dose- and time-dependent NE migration to peritoneal cavity of mice. Migration was inhibited by Dexamethasone, BW A4C and U75302, but not by Indometacin. The increase of the macrophage population powered the MTA-induced NE migration, while mast cell depletion reduced it. IL1- α and MIP-2 were detected in the peritoneal exudate of the animals stimulated with MTA. These results suggest that MTA induces NE migration to mice peritoneal cavities mediate by LTB4 release because BW A4C, U75302 and Dexamethasone were able to inhibit NE migration. However, cyclooxygenase products are not involved on the process. In addition, NE migration was dependent on the presence of mast cells and resident macrophages. Supported by FAPESP and CNPq.

Densitometric study of the newly formed bone by monoolein/rhBMP-2 application

Regis, R.R.; Issa, J.P.M.; Guimarães, E.A.B.B.; Regalo, S.C.H.; Iyomasa, M.M.; Siéssere, S.; Defino, H.L.A.

Material carriers that promote gradual and slow bioavailability of bone morphogenetic protein type 2 (rhBMP-2) have been investigated in several recent studies in the medical and dental fields. The purpose of this study was to evaluate the efficiency of monoolein gel as a carrier for rhBMP-2 during the bone healing process either after mandibular decortication or not, in Wistar rats, using a densitometric method (DEXA) for analysis. Fourteen animals were selected and assigned to 2 groups with 7 animals each: 1- mandibular decortication (5x5mm) and insertion of 5 μ g rhBMP-2 combined with monoolein gel; 2- no mandibular decortication and application of 5 μ g rhBMP-2 combined with monoolein gel. After 2 weeks, the animals were perfused and the hemimandibles were removed for radiographic exposure in a Kodak mammography film (50Kv, 10mA, 0.5s) and subsequent densitometric evaluation (Sidexis, Germany). The results showed a large number of optical pixels (mean \pm SD) in the animals submitted to decortication (234.95 \pm 4.27), even though this group did not differ significantly from the group in which decortication was not performed (219.18 \pm 5.22) ($p < 0.05$). Based on the findings of this study using a rat experimental model, it may be concluded that the application of the bone morphogenetic protein rhBMP-2 using monoolein gel as carrier, speeded up the bone healing process, which was demonstrated by the larger number of optical pixels in this group. On the other hand, in the group without decortication, the bone repair occurred slowly, which was confirmed by the small number of optical pixels. Key-words: optical densitometry, rhBMP-2, monoolein, bone defects.

Histomorphometrical alterations on the sublingual gland of rats after long-term alloxan-induced diabetes

Rodrigues, P.A.L.; Cestari, T.M.; Garlet, G.P.; Ceolin, D.S.; Martins, A.C.O.; Meneghetti, I.C.; Assis, G.F.

Changes in salivary flow and composition in diabetic patients, as well as in experimental models of diabetes, have been reported in several studies. In this study, a morphometric evaluation of the sublingual glands of diabetic rats was performed at periods of 9 and 12 months of disease. Rats with alloxan-induced diabetes were killed and had their sublingual glands extracted and examined histomorphometrically. The results were analyzed statistically by analysis of variance. The results indicated that: a) the corporal mass of the 9- and 12-month diabetic animals were, respectively, 57% and 47% lower than that of the non-diabetic animals; b) the average food intake, water ingestion and diuresis were, respectively, 75%, 326% and 2700% greater in the diabetic group; c) no statistically significant difference was observed between the groups with respect to the mass of the sublingual gland; d) the sublingual glands of the diabetic group presented a larger number of mucous cells and less amount of stroma compared to the non-diabetic group; e) the density of volume of the mucous acinus of the 12-month diabetic group was 0.10 times greater than that of the non-diabetic group; f) the density of volume of stroma in the 12-month diabetic group was 0.30 times lower than that of the non-diabetic group, indicating an increase of the mucous acinus increase, occupying the space of stroma; and g) the volume of the mucous acinar cells in the 9-month diabetic group, was 41% greater than that of the non-diabetic group. In conclusion, the alterations

in the salivary flow and composition in diabetic rats stimulate a greater production of mucous by the sublingual glands causing the hypertrophy of its mucous cells.

A previous study of the analysis of muscle asymmetry in young adults with normal occlusion

Brochini, A.P.Z.; Martins, M.M.; Melchior, M.O.; da Silva, M.A.M.R.

The purpose of this study was to evaluate the existence of functional asymmetry of the masticatory muscles in 7 healthy, young adults aged 19 to 23 years, with normal and asymptomatic occlusion. The clinical exam was composed of a questionnaire inquiring on the Severity of Signs and Symptoms of Temporomandibular Disorders (TMD) and the axis I of the Research Diagnostic Criteria for TMD disorders (RDC/TMD). Myofunctional evaluation and occlusion analysis were also performed. The action of the masseter (M) and anterior temporal (AT) muscles was evaluated by electromyography (EMG) examination (Freely, De Götzen, Milan, Italy) during the tests of maximum voluntary clench on cotton rolls positioned on the posterior teeth and maximum voluntary clench intercuspal position. The EMG signs were analyzed and compared by calculating the percentage overlapping coefficient (POC%), coefficient of torsion (TORS%) and the index of asymmetry (ASYM%). The results of this study revealed that EMG index means (POC - M= 86,78 and AT= 86,56; TORS= 8.43; ASYM= 5.28) were within the normal range. The severity questionnaire demonstrated a mean of 1 degree for several symptoms. There were alterations in the stomatognathic system, such as oronasal breathing and preferential unilateral mastication. In conclusion, the values of muscle functional asymmetry were in accordance to those reported in the literature for healthy young adults. The disturbed functions did not seem to relate with the presence of TMD.

Protocol for obtainment of chitosan-based biomaterials of different molecular weights

Pavone, C.; Neto, R.S.; Filho, S.P.C.; Cardoso, M.B.; Júnior, E.M.; Marcantonio, R.A.C.

Chitosan is a polymer obtained from chitin, which shows bone repairing properties when used as a gel. There is also chitosan chloride, a water-soluble chitosan derivate. The goal of this study was to set the protocol for obtainment of chitosan and chitosan chloride gels with different molecular weights. For such purpose, 5 g of chitin were mixed with 220 mL of 40% NaOH solution in two volumetric bottles at 115°C under agitation for 6 hours, thus promoting its deacetylation. In one bottle, NaBH₄ was added to reduce chain depolymerization and produce greater molecular weight chitosan. These materials were washed in distilled water, filtered, dried and suspended in 1% acetic acid solution, under agitation for 24 hours. The resulting samples were filtered and neutralized by addition of NH₄OH, thus promoting chitosan precipitation, and then washed with distilled water, dried and suspended in 0.1 M acetic acid solution at 20 g/L, thus resulting in chitosan gels. For obtaining chitosan chloride gel, chitosan was suspended in 0.1 M acetic acid solution at 20 g/L and dialyzed against 0.2 M NaCl solution during 3 days. Samples were frozen and freeze dried before its dissolution in water and gel acquirement. Chitosan and chitosan chloride gels with molecular weight of 100,000 and 400,000 kDa, pH 6 and stable viscosity at 37°C were obtained. It may be concluded that, chitosan- and chitosan chloride-based biomaterials have a simple obtainment protocol and that the variation of some aspects of chitosan lead to the attainment of a variety of biomaterials, which should be further investigated, allowing its application as bone repair assisting materials.

Standardization of modulated medium culture for mesenchymal stem cells originating from rabbit dental pulp

Oliveira, J.G.; Souza, M.O.; Bittencourt, R.; Deffune, E.; Pinheiro, N.A.

The study of mesenchymal stem cell is a tool of great aid for cell engineering due to its high capacity of clonogenic proliferation and differentiation in tissue. The dental pulp presents undifferentiated cells with such a capacity that when cultivated *in vitro*, exhibit characteristics of stem cells. The rabbit, as an experimental model, is advantageous because of the large size of the pulp tissue of its incisors and its ease of removal. The goal of this study was to standardize a medium of culture for proliferation of mesenchymal stem cells originating from dental pulp. The incisors of rabbits were collected and their pulp tissue was extracted, divided into 4 parts and cultured individually 24-well plates, totaling 48 samples. Two culture media were evaluated: MediumA: D-MEM High Glucose (Gibco®) supplemented with 10% of fetal bovine serum and antibiotic for 24 samples; and MediumB: KnockOut D-MEM (Gibco®) supplemented with 10% of fetal bovine serum and antibiotic, for the other 24 samples. The media were changed every 48 hours and cell viability was evaluated at the 10th day of the experiment. Of the 24 samples, 6 (25%) cultured with MediumA did not present cell proliferation. Two (8.3%) presented contamination and were discarded. MediumB showed proliferation of mesenchymal stem cells after the 2nd day of culture while in MediumA proliferation occurred within 5 days. At 10 days,

the frame number in MediumA was of 8x104 and in MediumB 72x104, as observed for the viability test. From the 22nd day of culture on, the cells in MediumA initiated cell apoptosis. In conclusion, for the culture of mesenchymal stem cells originating from the rabbit dental pulp, the use of the culture medium KnockOut D-MEM presented better results with cell proliferation within a shorter time. More studies on cell apoptosis are suggested and optimization of the modulated medium by supplementation is important for development of cell culture.

Differential expression of chemokines in compression and tension sides during orthodontic movement

Repeke, C.E.P.; Garlet, T.P.; Moura, K.C.; Junior, S.B.F.; Coelho, U.; Garlet, G.P.

Orthodontic tooth movement is achieved by the remodeling of alveolar bone, triggered by an inflammatory response after force application. In this work we investigated the pattern of expression of osteoblast- and osteoclast-related chemokines, and further correlated them with the profile of bone remodeling markers in tension (T) and compression (C) sides of human tooth submitted to orthodontic forces. RealTime-PCR were performed with mRNA from periodontal ligament samples harvested from T and C sides of human teeth (N=14) submitted to rapid maxillary expansion. Periodontal ligament of normal teeth (N=8) were used as controls. Our data demonstrated higher levels of MCP-1 and MIP-1a, associated with osteoclast precursors migration and differentiation, in C side. In accordance, C side presented higher levels of osteoclast markers RANKL and CathepsinK. On the contrary, T side presented higher expression osteoblast markers CBFA-1 and OCN, suggesting a predominance of an anabolic activity. However, the expression of SDF-1a and RANTES, versatile chemokines that can contribute to both osteoclastic and osteoblastic activity, were similar in C and T sides. Furthermore, chemokines role seems to be more related to osteoclast activity. In conclusion, these data demonstrate a differential expression of osteoblast- and osteoclast-related chemokines in compressed and stretched sides of periodontal ligament, suggesting that chemokines are involved in chemoattraction and activation of bone cells during orthodontic tooth movement.

Densitometric values in head and third part of femurs of rats submitted to weightlessness and exercise on a treadmill

Vicentini, C.R.; Salzedas, L.M.; Louzada, M.J.Q.

Rat tail suspension has been used in human medicine to comprehend bone loss in laid patients. This study evaluated the bone density in rat femurs submitted to this experimental model. Seventy male Wistar rats weighing 260 g were allocated in different groups: C1(n=15) 21 control days; C2(n=15) 42 control days; S(n=12) 21 suspension days; ST(n=13) 21 suspension days and 21 treadmill physical exercise; SL(n=15) 21 suspension days and 21 released walking. After sacrifice, the femurs were removed and kept frozen at -20°C. For bone density determination, radiographic images were taken using a Dabi Atlante x-ray equipment. The femur and a 9-step aluminum stair were placed over the optical plaque. The readings were done in a scanner and manipulated on Digora for Windows 1.51 software. The head part values were C1(2.03±0.51mmAl), C2(5.98±0.56mmAl), S(1.71±0.15mmAl), ST(2.66±0.56mmAl), SL(2.3±0.60mmAl). In the third part these values were C1(1.45±0.51mmAl), C2(2.11±0.50mmAl), S(1.23±0.26mmAl), ST(1.66±0.22mmAl), SL(1.51±0.28mmAl). The statistical analysis (Tukey, p<0.05) identified significant difference on head part between groups C1-S, C2-S, S-ST, S-SL and ST-SE, and on the third part between groups C1-C2, C2-S, C2-ST, C2-SL and S-SE. In conclusion, tail suspension decreased the bone density values, and the released walking and treadmill physical exercise recovered these values. Support: Fapesp no 2004/13264-7.

Influence of GenDerm® thickness in MMP-2 and MMP-9 expression during its resorption in rat subcutaneous tissue

Martins, A.C.O.; Cestari, T.M.; Ceolin, D.S.; Rodrigues, P.A.L.; Taga, R.

Guided tissue regeneration (GTR) is a clinical procedure to facilitate periodontal regeneration using a barrier membrane to exclude non-desirable cells (epithelial and gingival connective tissue cells) and maintain a space for appropriate cells (PDL cells, bone cells and/or cementoblasts) to repopulate the wound area. Thus, a membrane must maintain its structural integrity during early wound healing. Little information is available in the literature regarding the degradation profile of the commercially available collagen membranes. This study evaluated morphometrically the influence of GenDerm® thickness in its resorption speed and analyzed immunohistochemically the expression of metalloproteinases -2 and -9. Bovine bone-derived resorbable membranes (GenDerm®) with thicknesses <0.1mm (Group 1), 0.1-0.2 mm (Group 2) and >0.2mm (Group 3) were implanted in the subcutaneous tissue of 30 rats. The study periods were 3, 5, 7, 10 and 14 days after implantation. The morphometric data were submitted to two-way ANOVA. At 3 days, the membranes of Groups 1, 2 and 3 were intact and showed mean thickness of 0.14 mm, 0.21 mm and 0.33 mm,

respectively. At 7 days, the membrane thickness of Groups 1 and 2 decreased, respectively, 43% and 24%, and their structure was fragmented. On the other hand, in Group 3, the membranes decreased only 9% and their structure was intact. At 10 days, the membranes were totally resorbed in Group 1, fragmented in Group 2 and partially intact with superficial resorption in Group 3. At 14 days, the membranes were absent in all Groups. The immunohistochemical analysis showed that in Group 1, the percentage of MMP-9 positive cells was on average 20 times higher than that in Groups 2 and 3 in all analyzed periods. MMP-2 expression was practically absent in all groups. The resorption time and structural integrity of GenDerm® in rat subcutaneous tissue are dependent on its thickness and involves the participation of MMP-9.

Cytokine expression in bone repair process in balb/c mice

Moura, K.C.R.; Raimundo, F.M.; de Andrade, M.C.V.; Garlet, G.P.

In addition to the control performed by growth factors and hormones, recent studies suggest that the immune and skeletal systems have in common a variety of regulatory molecules, such as the cytokines. Despite the progress in the field of osteoimmunology, most studies have been focused on the influence of different immune system cell and mediators on bone resorption process. Therefore, the possible influences of the immune and skeletal systems interactions on bone formation and repair remain unknown. The aim of this study was to evaluate the expression of cytokines in the bone repair process in different experimental defects in mice balb/c calvaria. Calvarial 1.5 and 3.5 mm diameter defects prepared in 28 mice were evaluated radiographically and histologically and analyzed by RealTimePCR during 0 h to 8 weeks after defect creation in order to assess the expression of cytokines TNF- α and IL-10. The radiographic morphometric results showed presence of bone formation in 1.5 mm defects. The histological analysis demonstrated that both sizes of defects were filled by fibrotic connective tissue in the earlier periods (0h, 1st and 2nd weeks) and, in the subsequent periods (from 3rd week), there were areas suggestive of bone formation showed in the edges of the defects. Regarding cytokine analysis, TNF- α expression was found to be transitory, being present in low levels at 4th, similarly to the inflammatory process. Messages to IL-10 were detected in both defects; however the expression this mediator was more intense in samples that presented bone formation. In conclusion, there seemed to be a participation of cytokine IL-10 during bone formation in 1.5 mm diameter defects, and TNF- α may act as an important mediator of inflammatory events in bone defects.

Different storage media for maintenance of periodontal ligament cells in avulsed teeth

Brunetta, E.V.; Casaroto, A.R.; Nagata, J.Y.; Sell, A.M.; Hidalgo, M.M.

Avulsion is one of the most frequent traumatic dental injuries. It is a complex injury that can affect several periodontal tissues. Immediate replantation of a tooth into its socket is the correct conduct for maintenance of periodontal ligament cells, determining a successful prognosis. Nonetheless, in general, many difficulties are posed to immediate tooth replantation and in these cases the periodontal ligament cells are entirely dependent on the storage medium. The purpose of this study was to evaluate the viability of human periodontal ligament cells of teeth maintained in different storage media for avulsed teeth. Twelve recently extracted teeth were stored in distilled water, ultra-pasteurized milk, saliva and Hank's balanced salt solution (HBSS) at 20°C during 3 hours. After incubation, the periodontal ligament cells were removed enzymatically and samples were collected for microscopic analysis using the trypan blue dye exclusion method and for calculation of cell concentration. The results indicated that all storage media had a better performance than water (p<0.05), which presented the least cell concentration (1.27 x 10⁵ cells/mL; p<0.05). At 3 hours, saliva, HBSS and milk showed 80.28%, 77.77% and 66.77% of cell viability, respectively. Saliva presented the better cellular concentration (5.6x10⁵cells/mL). These preliminary results suggest that, for storage of avulsed teeth, in addition to milk, which is usually indicated, saliva can also be used as it is able to preserve cell viability and periodontal ligament concentration.

Effect of 4% titanium tetrafluoride varnish on demineralization and remineralization of bovine enamel in vitro

Comar, L.P.; Magalhães, A.C.; Rios, D.; Delbem, A.C.B.; Buzalaf, M.A.R.

This in vitro study assessed the effect of 4% titanium tetrafluoride (TiF₄) varnish on demineralization of sound enamel and remineralization of artificial enamel caries. For such purpose, bovine sound and carious enamel blocks (n=110) were randomly allocated to each type of varnish used: Duraphat® (D) (NaF, 2.26% F, Colgate-Brazil, n=30), Duofluorid® (F) (NaF, 2.71% F, FGM-Brazil, n=30), TiF₄ (T) (2.45% F, FGM-Brazil, n=30) and no-fluoride - (P) (FGM-Brazil, n=20). For the formation of artificial enamel caries, half of the enamel blocks were immersed in 32 mL buffer acetate solution during 16 h, whereas the other half was maintained sound. After that, the varnishes

were applied onto the enamel surfaces. The blocks were then subjected to pH cycles in an oven at 37°C during 7 days. Surface and cross-sectional microhardness were measured to calculate the percentage of surface microhardness change (%SMHC) and the mineral loss (ΔZ). Data were tested by Kruskal-Wallis test ($p < 0.05$). For sound enamel, %SMHC and ΔZ means (±SD) were: D (-27.41±4.35a/ 2815.8±1597.2A), F (-27.07±5.56a/ 2584.8±1253.8A), T (-38.35±7.75b/ 2415.0±2155.1A) and P (-86.82±11.86c/ 4739.9±1582.6B). For carious enamel, %SMHC and ΔZ (±SD) means were: D (+13.20±4.17a/ 1853.6±911.6A), F (+14.17±4.12a/ 2294.7±1435.2A), T (+27.35±4.13b/ 2412.4±1102A) and P (-9.57±4.24c/ 613.7±1006B). TiF4 varnish seemed to improve enamel remineralization in comparison to other fluoride varnishes. In contrast, it did not reduce enamel demineralization as other fluoride varnishes.

Aloxan-induced diabetes results in high cariogenic activity and progressive pulp alterations

Nunes, I.S.; Silva, M.C.; Cestari, T.M.; Alberti, S.; Ceolin, D.S.; Assis, G.F.

Diabetes mellitus is a systemic disease characterized by abnormal regulation of both glucose and lipids metabolism resulting in hyperglycemia and hyperlipidemia. Diverse aspects related to diabetes contribute to caries lesions development and progression. This study investigated the cariogenic profile and evolution of histological changes in the pulp tissue of diabetic rats. Diabetes was induced in Wistar rats ($n=25$) by the administration of 42 mg/kg of aloxan. The diabetic group and control group ($n=25$) were analyzed in the periods of 1, 3, 6, 9 and 12 months. The animals were sacrificed and hemijaws were removed. Histological slices stained by HE were evaluated descriptively and by scores. Histological analysis was based on severity of caries and characteristics of pulp tissue (collagen fibers, blood vessels, inflammatory cells, integrity of the odontoblastic layer and areas of necrosis). The diabetic group showed an accentuated presence of caries, associated with loss of integrity of the odontoblastic layer from the 3rd to the 12th month, being statistically different from the control group in this period ($p < 0.05$ Kruskal Wallis). The concentration of collagen fibers and blood vessels in the dental pulp of the diabetic rats was significantly reduced in comparison to the control rats at 3, 6, 9 and 12 months. There was a negative correlation with the presence of inflammatory cells and necrosis areas, which were increased in the diabetic animals in the periods of 6, 9 and 12 months. These results suggest that diabetes promotes characteristic alterations on the development of caries and necrosis in rat pulp tissue. Thus, diabetes can be considered a risk factor for the prevalence and severity of dental caries and the consequent pulpal alterations.

Oral manifestations in HIV-positive prisoners from the city of Bauru, SP, Brazil

Gonçalves, P.Z.; Oliveira, L.A.F.; Grotto, R.M.T.; Pardini, M.I.M.C.; Consolaro, A.

The dentist plays a key role in the early diagnosis, treatment and control of patients serum-positive for the human immunodeficiency virus (HIV), considering the large number of opportunistic infections that affect these individuals. HIV-infected patients may present early oral manifestations, some of which have a relevant diagnostic and prognostic value. This study compared the oral manifestations of male HIV-negative and HIV-positive prisoners from the Penitentiary "Dr. Alberto Brocchieri" of Bauru, SP, and correlated the oral manifestations of HIV-positive prisoners with the results of laboratory exams on T CD4 lymphocyte count, CD4/CD8 ratio and quantification of the serum viral load. The HIV-positive prisoners presented more oral manifestations than the HIV-negative prisoners, namely 79.17% and 16.67%, respectively ($p < 0.05$). The most frequent oral manifestation among HIV-positive patients was periodontitis ($p < 0.05$), followed by gingivitis, candidiasis and hairy leukoplakia. The reduction in T CD4 lymphocytes and the increase in the serum viral load are associated to the immunodepression and to the increased degree of severity of oral manifestations. The dentist should recognize the oral manifestations of the acquired immunodeficiency syndrome (AIDS) by clinical examination and request and analyze laboratory examinations in the routine care of patients whenever HIV positivity is suspected. The results revealed the importance of including the dentist in the multidisciplinary team for care of HIV-positive patients, in order to combine efforts to improve the quality of life of patients, aiding in the diagnosis and evaluation of progression of the disease because oral manifestations may represent early signs of the disease, because of its correlation with worsened serum parameters.

Effect of Nd:YAG irradiation and fluoride application on enamel resistance to erosion

Moraes, S.M.; Magalhães, A.C.; Rios, D.; Silva, S.M.B.; Machado, M.A.A.M.; Lizarelli, R.F.; Buzalaf, M.A.R.

The effect of Nd:YAG irradiation and fluoride application on enamel resistance to erosion was evaluated in vitro. One hundred bovine enamel blocks (4X4 mm) were randomly divided into 10 groups, according to the treatments: G1- untreated (control); G2- APF (1.23% F) for 4 min; G3- fluoride varnish for 6 h (NaF- 2.26%); G4- 0.5 W

Nd:YAG laser (250 μm pulsewidth, 10 Hz, 35J/cm²); G5- 0.75 W Nd:YAG laser (52.5J/cm²); G6- 1.0 W Nd:YAG laser (70J/cm²); G7- APF + 0.75 W Nd:YAG laser; G8- 0.75 W Nd:YAG laser + APF; G9- Varnish + 0.75 W Nd:YAG laser; G10- 0.75 W Nd:YAG laser + varnish. After the treatments, half of the surface of the enamel blocks was protected with nail polish. The blocks were then stored in artificial saliva (30 mL/block) and were immersed in Sprite light® (30 mL/block) for 1 min, 4X/day, during 10 days. The erosive wear was evaluated by profilometry at days 5 and 10. The mean wear (μm) at days 5 and 10 was, respectively: GI-1.83/2.67; GII-1.04/2.60; GIII-1.03/2.48; GIV-1.13/2.47; GV-1.07/2.44; GVI-1.0/2.35; GVII-0.75/2.27; GVIII-0.80/2.12; GIX-0.76/2.47 and GX-1.09/2.46. ANOVA and Tukey's tests ($p < 0.05$) showed a significant difference among GI and the other groups, as well as between days 5 and 10. The results suggest that laser irradiation, fluoride application, as well as the association of both were able to increase the enamel resistance to erosion in the shorter interval.

Hetero-control of public water supply fluoridation, in Bauru, SP

Silva, J.G.A.; Ramires, I.; Lauris, J.R.P.; Buzalaf, M.A.R.

Considering all the aspects involving fluoridation procedures, the control of the whole process is as important as keeping or adding fluoride to the water. Based on the results of previous studies carried out in Bauru and the singularity of the city's public supply system itself, the need of hetero-control of the public water supply in the municipal area, is justified. This study aimed at monitoring the fluoridation of public water supply. The study was conducted from August 2005 to July 2006, in Bauru, SP. Monthly, in lottery-established dates, 58 water samples, in the 19 supply sectors, totaling 691 samples, were collected. Fluoride concentration present in the water samples was determined in duplicate, utilizing the sensitive ion electrode (Orion 9609), coupled to the potentiometer. Following the descriptive analysis, the samples were rated as acceptable or unacceptable, according to fluoride concentration. The mean fluoride concentration ranged between 0.57 and 1.78 mg/L. About 64% of the samples were classified as acceptable and of these, 23.88% as optimal. 29.95% of the samples presented inadequate fluoride content (above 0.84 mg/L). The results indicate that the fluoridation presents a trend towards optimal concentration and super-fluoridation. Monitoring of water supply fluoridation by surveillance systems must be encouraged, for the control of caries and dental fluorosis. Compared to the data of previous studies carried out in the city, there was an improvement in the fluoridation conditions of the supply water, in relation to regularity.

Stereological analysis of the parotid gland of rats with aloxan-induced advanced diabetes

Meneghetti, I.C.; Assis, G.F.

Diabetes Mellitus is associated with diverse buccal diseases originated mainly from reduction of salivary flow. The objective of this study was to evaluate morphometrically the parotid gland of rats with aloxan-induced diabetes in the delayed periods of the disease. For such purpose, 10 diabetic rats and 8 controls were used in the experimental periods of 9 and 12 months. The results showed that: a) corporal mass of the 9- and 12-month diabetic animals, were, respectively, 57% and 47% lower than that of the control rats; b) food intake, water ingestion and diuresis were, on average, respectively, 75%, 326% and 2700% greater in the diabetic group; c) mean fasting glycemia in the non-diabetic group was 80.5 and 111.7 mg/dL for the periods of 9 and 12 months; in the diabetic group, these values were 451.4 and 373.1 mg/dL, respectively; d) the mass of the parotid gland in the 9-month diabetic group was 75% lower than that of the diabetic group for the same period, whereas in the period of 12 months no statistically significant difference was observed between the groups; e) the volume of density of the acinus in the 9-month diabetic group was 0.13 times greater in relation to the control group for the same period; f) the absolute volume of stroma in the non-diabetic group of 9 months was 1.18% greater, in relation to the diabetic group of the same period; g) the density of volume and absolute volume of duct to intercalate in the 9-month non-diabetic group were, respectively 0.76 times and 2.65% greater, in relation to the diabetic group for the same period; h) the density of volume and the absolute volume of the striated ducts and excretory ducts did not show statistically significant difference between the non-diabetic and diabetic groups, in the periods of 9 and 12 months; i) the volume of the acinar cells in the animals of the 9-month and 12-month non-diabetic groups were, respectively 0.55% and 0.44% greater compared to the diabetic group for the same periods. In conclusion, the parotid gland of rats with long-term aloxan-induced diabetes undergoes morphologic alterations and the intensity of these alterations is proportional to the greater or lower destruction of the pancreatic B cells during the induction.

In vitro evaluation of enamel remineralization from acidified dentifrices with low fluoride content

Danelon, M.; Brighenti, F.L.; Oliveira, C.S.; Sasaki, K.T.; Buzalaf, M.A.R.; Delbem, A.C.B.

The excessive ingestion of fluoride (F) from different sources has led to an increase in dental fluorosis. Thus, the development of a dentifrice with low fluoride content could offer a higher security regarding F ingestion, but its effectiveness must be proven. The aim of this in vitro study was to assess the ability of acidified dentifrices with low F content to remineralize incipient caries lesions. Enamel bovine blocks were selected through surface microhardness. Next, artificial carious lesions were induced and surface microhardness was measured again. During 6 days, the blocks were submitted to pH cycling and treated twice/day with dentifrices (n=10): placebo, 275, 412, 550 and 1100 µg F/g. Thereafter, final surface microhardness was assessed to calculate the percentage recovery of surface microhardness (%RSMH). The values of %RSMH revealed an inverse relationship with regard to F concentration in the dentifrices. There were no statistically significant differences between groups 412, 550 and Crest and between 550, Crest and 1100 (ANOVA; p<0.05). A dose-response relationship for the dentifrices evaluated was observed. The acidified dentifrice with 550 µgF/g showed an enamel remineralization similar to those of the dentifrices with conventional fluoride concentration (1100 µgF/g). Financial support: CNPq/PIBIC.

Lipid peroxidation and oxidative stress induced by fluoride intoxication in rat salivary glands

Yamaguti, P.M.; Simões, A.; Ganzerla, E.; Nicolau, J.

Fluoride is widely regarded as the cornerstone of modern preventive dentistry. It has been demonstrated to be a cheap, reliable and efficient method, which may be administered in many different manners and from multiple possible sources. Excessive fluoride intake is a serious health problem and, for that reason, there is a continuing concern about its toxic and deleterious effects. Earlier reports have demonstrated that free radicals and lipid peroxidation play an important role in cellular degeneration. The present study evaluated the toxicity alterations of acutely administered sodium fluoride on the antioxidant defense system in rat submandibular glands. Male Wistar rats were assigned to two groups: the experimental group was treated with aqueous sodium fluoride (NaF) intraperitoneally in a dose of 15 mg F/kg body weight and, the control group received the same volume of isotonic salt solution (NaCl 3.05%). The animals were euthanized 0, 1, 3, 6, 12 and 24 hours after injection and the submandibular glands were removed and assessed for catalase activity and lipid peroxidation level by the method of Aebi (1984) and Esterbauer & Cheeseman (1990), respectively. Protein content was determined by the method of Lowry et al. (1951). Statistical analysis was performed by analysis of variance and Tukey test at 5% significance level. Catalase activity in the experimental group was significantly higher (30.3%) than in the controls (p<0.01). Conversely, their exposure to NaF showed a 83.6% increase in lipid peroxidation level (p<0.01) in a time-dependent manner. These results suggest that fluoride induced toxicity on rat submandibular glands not only increases lipid peroxidation activity associated with free radical levels but also disturbs the antioxidant defense system and, consecutively, enhances the oxidative stress status.

In vitro evaluation of the effectiveness and abrasiveness of acidic fluoride dentifrices

Pessan, J.P.; Alves, K.M.R.P.; Brighenti, F.L.; Franco, K.S.; Sasaki, K.T.; Buzalaf, M.A.R.; Delbem, A.C.B.

Low-fluoride dentifrices may reduce the risk of dental fluorosis. However, their anticariogenic action is lower than that of conventional dentifrices. Considering that CaF₂ formation is inversely related to pH, the aim of this in vitro study was to evaluate the effectiveness and abrasiveness of acidic fluoride dentifrices. Enamel bovine blocks (n=240) were selected according to their surface microhardness and allocated in 12 groups, according to the treatment performed. Dentifrices containing 0, 275, 412, 550 and 1,100 µg F/g (pH 4.5 or 7.0), in addition to two commercial dentifrices containing 1,100 (Crest, positive control) and 500 µg F/g (Colgate Baby) were used. Half of the blocks were submitted to pH cycling and treatment (2 times/day) with dentifrice slurries. Variations in surface microhardness, mineral content and amount of fluoride in enamel and slurries after pH cycling were calculated. The other half of blocks was used to test dentifrice abrasiveness, which was evaluated by profilometry, after brushing with an automated toothbrushing machine (16,000 strokes). Enamel blocks treated with acidic dentifrices exhibited less mineral loss compared to those exposed to neutral dentifrices (ANOVA, p<0.05). Acidic dentifrices with 412 and 550 µg F/g presented similar results (ANOVA, p>0.05) as the neutral dentifrice with 1,100 µg F/g and Crest. Positive correlation (Pearson, p<0.05) was found between fluoride concentration in dentifrices and in enamel and slurry. The abrasiveness of the acidic dentifrices was similar (p>0.05) to that of the neutral

products, whereas the commercial dentifrices yielded lower abrasion (p<0.05). It was concluded that acidic dentifrices with 412 and 550 µg F/g had the same anticariogenic action as that of the positive control. The pH had no influence on dentifrice abrasiveness.

Histological evaluation of Symphytum officinalis 6CH action over hepatic and subcutaneous tissues in mice

Pessoa, J.I.C.; Neto, R.S.; Pretel, H.; Ykeda, F.; Ramalho, L.T.O.;

Symphytum officinalis, known as Comfrey, is used as a healing agent since antiquity, showing tissue repairing properties on connective and bone tissues, although its internal use in the allopathic formulation is forbidden, due to hepatotoxicity. This study evaluated histologically the systemic action of Symphytum officinalis (SO) homeopathic (6CH), solved in hydroalcoholic solution (HAS) on the hepatic and subcutaneous tissues of mice. Eighteen male mice were assigned to six groups with three animals each: SO 6CH, oral administration (30 and 60 days); HAS oral administration (30 and 60 days); SO 6CH topical application (60 days) and HAS topical application (60 days). Liver tissue of the animals treated with oral administration and from the subcutaneous tissue of the animals treated with topical application. The histological evaluation showed that there were no morphological alterations on the subcutaneous tissues of animals treated with SO 6CH and HAS topical application, but the hepatic tissue of animals treated with SO 6CH and HAS by oral administration showed moderate degenerative alterations, in both evaluation periods. In conclusion, medicines with homeopathic concentration should be further studied before dental application because adverse effects caused by allopathic concentrations can also be seen during homeopathy use, although the hydroalcoholic basis used as a solvent should be considered.

Development of a novel fluoride varnish

Brighenti, F.L.; Oliveira, F.A.L.; Sasaki, K.T.; Delbem, A.C.B.

The use of fluoride varnishes has shown a great efficacy on caries prevention. The kinetics of fluoride in this product could interfere with enamel reactivity and efficacy. Thus, the aim of this in vitro study was to evaluate a novel fluoride varnish to improve its anticariogenic action. The varnishes had the amount of resin present in their composition modified. Enamel bovine blocks were obtained, selected by surface microhardness and randomized to five groups (n=12): placebo (Pla), Duraphat® (Dura), Duofluorid XII® (Duo), Duofluorid XII® with higher amount of resin (Higher) and Duofluorid XII® with lower amount of resin (Lower). The enamel blocks were treated with the varnishes during 6 h and submitted to pH-cycling during 7 days. Next, surface microhardness was again measured to calculate the percent surface microhardness change (%SMHC). Calcium fluoride present on enamel after the pH-cycling (CaF₂ retained) was also measured. The data were heterogenic and the statistical analysis was performed using Kruskal-Wallis test. The group with higher amount of resin presented the lowest %SMHC (p<0.05). There were no differences between the groups Dura, Duo and Lower. Regarding CaF₂ retained, the varnish with higher amount of resin showed better results (p<0.05), but there were no differences between groups Duo and Lower. It was possible to increase the amount of CaF₂ and decrease the mineral loss of the dental surface by increasing the amount of resin in fluoride varnishes, improving their anticariogenic action.

Pregnant woman X dental treatment

Laranjeira, A.P.J.; Ortolan, A.P.S.; Takana, C.E.; Sturion, L.

Pregnancy is a period of great physiological and psychological alterations that should be regarded by professionals dealing with health care. As a health professional, the dentist has the responsibility to be attentive to any alterations and aware of the pathologies that can affect the patient during the gestational state. Special care related to feeding, drug therapies, positioning of the patient in the dental chair, radiographic examinations and use of local anesthetics must be exercised minutely by the dentist, and the restrictions that each dental area poses should be taken into account. A detailed and individualized clinical examination is of great importance to resolve as fast as possible and with maximum safety the oral problems of pregnant women. The present study has as objective to guide the dentists and clarify doubts on this subject.

Evaluation of the In vivo biocompatibility of Papacárie®

Mastrantonio, S.S.; Ramalho, L.T.O.

Papacárie® is a new material developed for chemomechanical removal of caries. The aim of this study was to evaluate the in vivo biocompatibility of Papacárie®. Polyethylene tubes filled with Papacárie® (group I) and its gel base (group II) were

implanted in mouse subcutaneous connective tissue. The animals were sacrificed 3, 7, 20 and 30 days after the implantation procedure and the specimens were prepared for histological evaluation. The results showed that Papacárie® caused a moderate inflammatory response up to the 20th day, which decreased at 30 days. The gel base showed a discrete inflammation, which increased at 30 days. Papacárie® and its gel base were proved biocompatible with the connective tissue, although the alterations caused for these materials were statistically different (Mann Whitney; $p < 0,05$).

Oral Surgery

Postsurgical stability of counter-clockwise maxillomandibular advancement surgery: influence of articular disc repositioning

Peixoto, A.P.; Cassano, D.S.; Wolford, L.M.; Pinto, A.S.; Gonçalves, J.R.

A skeptical attitude has developed towards temporomandibular joint (TMJ) surgery because of the unpredictable and sometimes devastating outcomes resulting from TMJ surgical techniques performed in the 1980's and 1990's. However, significant advancements in TMJ diagnostics and the development of procedures to predictably treat and surgically rehabilitate the dysfunctional and pathological TMJ have provided good outcomes. The purpose of this study was to evaluate the stability following surgical counter-clockwise rotation and advancement of the maxillomandibular complex and the influence of disc displacement and articular disc repositioning. Seventy-two patients (59 females, 13 males) were allocated in 3 groups: G1 (n=21) – patients with healthy TMJs underwent double-jaw surgery only; G2 (n=35) – patients with articular disc displacement underwent articular disc repositioning concomitantly with orthognathic surgery; and G3 (n=16) patients with articular disc displacement underwent orthognathic surgery only. Each patient's lateral cephalograms were traced, digitized twice and averaged to estimate surgical changes (T2-T1) and postsurgical changes (T3-T2). During surgery, the occlusal plane angle decreased significantly in all groups. The maxillomandibular complex advanced and rotated counter-clockwise similarly in all groups, with advancement at the mentum. Postoperatively, the occlusal plane angle increased in G3 (2.6 ± 3.8) while G1 and G2 remained stable. Mandibular postsurgical changes in the horizontal direction had a larger relapse in G3 at the mentum (-3.8 ± 4.1 mm), B point (-3.0 ± 3.4 mm), and lower incisor edge (-2.3 ± 2.1 mm) while G1 and G2 remained stable. Maxillomandibular advancement with counter-clockwise rotation of the occlusal plane is a stable procedure for patients with healthy TMJs or for patients with simultaneous TMJ disc repositioning. Patients with preoperative TMJ articular disc displacement who underwent double-jaw surgery and no TMJ intervention experienced significant relapse.

Reconstruction of atrophic edentulous ridge: initial history of the results obtained with five different surgical techniques

Flores, S.M.; Sant'Ana, A.C.P

The deficiency of bone height or thickness may be limiting factor to implant placement. Several surgical techniques for reconstruction of atrophic ridges have been proposed, with lower success rates for non-grafted areas. The objective of this study was to evaluate the viability and effectiveness of different grafting techniques for reconstruction of atrophic ridges and placement of osseointegrated implants. Thirty-nine patients aged 13-68 years assisted at FOB-USP were enrolled and consecutively treated with the following techniques: onlay with immediate or delayed implants, inlay with or without Le Fort I and combined inlay-onlay with immediate or delayed implants, using blocks of cool bone removed from the iliac crest, tibia, mento and external oblique line of the mandible. The patients were evaluated with respect to the painful symptomatology on the donor and recipient sites, accidents and complications in the immediate postoperative period and implant survival in the short-stated period after insertion, in accordance with the clinical criteria of immobility, absence of radiolucency on the peri-implant region and painful symptomatology. A total of 217 implants were installed, of which 28 (13%) were lost within 1 year after prosthetic installation. The results showed that the onlay technique with delayed implants presented the highest implant survival rate (100%), followed by the inlay technique without Le Fort (92%), inlay with Le Fort (86.7%) and onlay with immediate implants (60%). Regarding the origin of the graft material, the best results were obtained with grafts removed from the mentum (100% of survival). These data suggest that autogenous grafts constitute a viable and adjusted treatment for the rehabilitation of patients with alveolar ridge deficiency, as in these cases the implants are installed in a session subsequent to graft removal.

Handling of bone and gingival tissue previous to implant installation: Case Report

Freitas, R.M.; Neto, R.S.; Bedran, T.B.L.; Junior, E.M.

Implantology has developed remarkably in the last decades, although the presence of hard and soft tissue surrounding the implant area is still a limiting factor to esthetic prediction in oral rehabilitation. To overcome tissue deficiency, a wide array of techniques is currently available, among which the use of autogenous bone graft for bone correction, and use of acellular dermal matrix (Alloderm) for soft tissue corrections. This work reports the case of a young patient with lower central incisor agenesis, insufficient alveolar bone and gingival recession, who was referred to our clinic. The outline treatment plan comprised correction with autogenous bone graft from the retromolar region and use of acellular dermal matrix, in order to provide bone thickness and soft tissue increase on the region intended to receive the implant. After 6 months, the area was reopened followed by titanium implant installation. Four months later, the area was reopened for installation of the healing cap, and after 2 months, the prosthesis was constructed. The results showed bone thickness and soft tissue increase in the treated region, with functional and esthetic success in patient rehabilitation. In conclusion, the association between autogenous bone graft and acellular dermal matrix in an excellent treatment option for that the practitioners have for patient rehabilitation with implants.

TMD symptomatology manifestation in groups of different ages

Ferreira, C.L.P.; Silva, M.A.M.R.; Felício, C.M.

Although temporomandibular disorders (TMD) have a prevalence peak, there are controversies about its relation with the different ages. The purpose of this study was to analyze the prevalence of TMD signs and symptoms in four different age groups. A total of 1000 protocols of randomly selected TMD patients were analyzed, among which 948 had all required information. Of these, 110 subjects belonged to the group of adolescents (12 to 18 years), 585 were young adults (19 to 40 years), 232 adults (41 to 64 years) and 21 elderly (65 years or more). Analysis of the association between age group and signs/symptoms was carried out by qui-square test and odds ratio (OR) values. Significance level was set at 5%. Young adults predominated in the sample. The group of adolescents differed significantly from the groups of young adults and adults, but was statistically similar to the elderly group. Adolescents presented lower risk for manifestation of the following signs/symptoms: in relation to young adults: TMJ pain (OR=0.60), cervical pain (OR=0.49), chronic headache (OR=0.56), fatigue (OR=0.52), earache (OR=0.57); in relation to adults: muscle pain (OR=0.51), cervical pain (OR=0.29), chronic headache (OR=0.49), fatigue (OR=0.54), tooth sensitivity (OR=0.51), earache (OR=0.37) and vertigo (OR=0.44). There was statistically significant difference between young adults and adults, the former presenting greater risk for TMJ noises (OR=1.46), difficulty to close the mouth (OR=3.19), limited mouth opening (OR=1.59) and lower risk for cervical pain (OR=0.60), tinnitus (OR=0.64), earache (OR=0.66) and vertigo (OR=0.59). Young adults and elderly did not differ significantly to each other. There was statistically significant difference between the adult group and the elderly group only regarding bruxism (OR=2.59), the adult patients presenting greater occurrence. In conclusion, in the studied population, young adults and adults presented more TMD signs/symptoms than adolescents and elderly patients.

Immediate implants: a new perspective

Soriani, N.C.; Coppede, A.R.; Bersani, E.

Initially, a surgical protocol with a healing period of 3 to 6 months was proposed to grant success in implant therapy, which patients considered a too long period. Recently, the interest in the immediate loading concept has increased because, clinically, the results are similar to those of the conventional protocol. It is important to consider the possibility of extracting hopeless teeth with immediate implant installation and activation, providing comfort, function, esthetics and reducing treatment time. To make this concept possible, some techniques have been developed, such as simultaneous bone grafting, and use of membranes. These techniques require flap reflections, and the implant is not always activated immediately. This case report shows the installation and activation of an implant immediately after extraction of a condemned molar. Patient MLA, 36 years, healthy, presented with fractured tooth 36. Atraumatic extraction was performed, preserving the adjacent structures. Implant installation was done with a surgical guide. The abutment and an anatomically adjusted provisional restoration were installed immediately. No suture was done, and the original topography of the soft and hard tissues was preserved. It is possible to conclude that extraction followed by implant installation immediately activated is a feasible alternative that can be indicated in cases of tooth loss rehabilitated with osseointegrated implants.

Complications in extraction of unerupted teeth in patients of advanced age: case report

Quezada, D.E.R.; Yaedú, R.Y.F.; Ávida, L.D.; Santana, E.; Mandaliti, A.C.; Júnior, O.F.

The indication of extraction of unerupted tooth is widely known and the presence of these teeth is not always diagnosed at adult age. In the recent years in Brazil, the elder population has increased at a significant rate and unerupted teeth have been found in patients of advanced age. This is a group of greater risk during surgical treatment and more susceptible to systemic involvement. In this context, the present study discusses the complications in the indication and accomplishment of exodontias of unerupted teeth in elderly patients. Two cases are presented, the pros and cons of the indication are addressed and performance of this surgery in patients of advanced age is discussed.

One-stage single implant rehabilitation: case report

Duarte, B.G.; Nary, P.E.; Gonçalves, E.S.

Since the first Branemark publications in the late 1960's (1), Implantology has revolutionized Dentistry, especially the fields of Oral Surgery, Prosthodontics and Periodontology. The concepts issued by Branemark (1) originated a 2-stage procedure: the first for fixture installation and the second placement of the abutment connections, with a 4-6 month interval between them, called osseointegration period. Adell et al. (2) (1981) defined osseointegration as the "direct and close contact between a living bone and a titanium fixture". In 1976, Schroeder et al. (3) published the outcomes of a study using titanium implants with treated surface placed in the mandible of monkeys and observed a process of ankylosis between bone and titanium. From these studies, another implant system was developed (Strumman Dental Implant System), presenting treated surface implants, reduced osseointegration period and the possibility of eliminating the second stage, meaning a 1-stage procedure. The present study presents the macro and micro structure of this implant system, addresses its advantages and describes a clinical case. 1. Branemark, et al. Intra-osseous anchorage of dental prostheses I. Experimental studies. *Scand. J. Plast. Reconstr. Surg.*, 2. Adell, R., Lekholm, U., Rocker, B., Branemark, P.I. A 15-year-study of osseointegrated implants in treatment of edentulous jaws. *Int. J. Oral Surg.*, v. 10, p. 387-416, 1981. 3. Schroeder, A.; Pohler, O.; Sutter, F. (1976). Tissue reaction to a implant of a titanium hollow cylinder with a titanium surface sprayer layer. *Schweiz Monatsschr Zahnheilkg*, 86:713-727.

Morse Cone system: abutment connection option to posterior unitary immediate loading: case report.

Izumida, F.E.; Chávez, O.F.; Júnior, F.A.M.; Barros, L.A.B.

Originally, Branemark protocol for dental implant treatment was based on submerged healing prior to loading. However, immediate loading has been proved possible for multiple and/or unitary cases, giving patients an esthetic appearance during the whole treatment period. The success of immediate loading is achievable, provided that good bone quality and quantity are present. These factors help better maintaining primary implant stability, micro movement reduction and good bone repair and remodeling. Several implant types are available and Morse Cone connection might provide advantageous results in unitary implant and posterior area, showing high screw loosening and screw fracture resistance, adequate cementation, esthetic properties and standard-diameter options. Moreover, Morse Cone components used in immediate loading are safe, practical, rapidly placed and low cost. The purpose of this case report was show the clinical and laboratorial procedures of the 2 immediate loading implant installation, in the region of teeth 36 and 46. After implant installation, solid abutments (Neodent) were used and laboratorial provisional prostheses were adapted. Three months postoperatively, (osseointegration confirmation and peri-implant tissue remodeling), definitive prostheses were constructed. Actual dentistry needs practical, economic, esthetic and non invasive procedures to offer resolution of oral problems to the population.

Immediate loading on single implant inserted at grafted alveolar cleft – case report

Domingues, R.S.; Amado, F.M.; Gregghi, S.L.A.; Sant'Ana, A.C.P.; Passanezi, E.; Rodrigues, M.G.S.; Rezende, M.L.R.

Congenital alveolar cleft represents a particularly complex challenge for esthetic prosthetic rehabilitation. The treatment protocol for this anomaly requires an early secondary bone graft (at 8-10 years of age) aiming at normal maxillary growth, canine eruption through the grafted bone and orthodontic treatment without edentulous space, among other objectives. When the absence of prosthetic space does not occur, implant installation is an advantageous treatment option. This case report presents

the consequences of implant placement before the end of facial growth, such as infra-occlusion of the implant with time, and the application of immediate load on single implant placed at low density maxillary bone. A 16-year-old female patient from the Hospital for Rehabilitation of Craniofacial Anomalies, University of São Paulo (Bauru) was provided with a rough surface screw-shaped titanium implant (3,75x15mm, titanium Fix, SP, Brazil) at the position of the congenitally missing left lateral incisor in the cleft area grafted with iliac bone and re-grafted with autogenous bone harvested from the mandible. Immediate load was applied to the implant by the installation of a provisional acrylic crown. The planning aimed at preserving the remaining local bone and obtaining optimal esthetic of peri-implant soft tissue, one of the main difficulties for reaching success on implant-supported prostheses in cleft patients. In conclusion, the clinical and radiographic success obtained after 3 years of follow-up, points out the advantages of the procedure, as an approach not invasive for the adjacent teeth allows the maintenance of bone quality and quantity and immediate esthetic rehabilitation.

Homogeneous bone graft obtained from bone tissue banks: preliminary clinical and histological evaluation

Bedran, T.B.L.; Freitas, R.M.; Neto, R.S.; Junior, E.M.

Reconstruction of bone defects represents a challenge in Implantology, and biomaterials capable to promote regeneration of such defects have been investigated. The use of autogenous bone graft in these regions is considered as the "golden standard". However, disadvantages of the technique, such as creation of a second surgical site, increase of surgical time and higher postoperative discomfort, show the need of other biomaterial with fellow regenerative characteristics, without such disadvantages. Therefore, the use of homogenous tissue, proceeding from bone tissue banks, appears as a viable alternative to most disadvantages of the use of autogenous grafts. In the presented case, a 46-year-old female patient presented to the Implantology Clinic of the School of Dentistry of Araraquara (FOAr – UNESP-Brazil) with insufficient maxillary bone thickness for implant installation and needing a bone graft in the region. Due to the impossibility of using autogenous bone, a homogenous bone graft was performed. Eight months after the graft surgery, the surgical site was reopened, titanium implants were installed and, during implant placement, the grafted bone tissue was biopsied. The outcomes showed that homogenous bone is a viable alternative to the lack for capitation of autogenous tissue because, clinically, this biomaterial was capable of providing primary lock to installed implants and histologically demonstrated potential to integrate to the berth similarly to the autogenous bone, though in a longer period of time. In conclusion, the homogenous bone presented potential to clinical application, resolving bone defects of difficult correction. However, further studies are necessary to better elucidate the principles of integration of this biomaterial, as well as the chronological alterations in treatments, searching for higher success rates in implant-based approaches.

Autogenous tooth transplantation: an alternative for dental loss

Barbisan, A.N.; Busa, M.J.O.; Barleto, C.V.; Júnior, R.J.A.

Tooth transplantation is the process of a inserting natural tooth with or without pulp vitality, in the alveolus of a recently extracted tooth, or serving to such purpose. The objective of the present study is to accomplish a survey on autogenous tooth transplantation addressing issues from the most appropriate moment for the accomplishment of the transplantation up to the correct surgical technique, always seeking the success of the intervention. The study material consisted of the examination and evaluation of cases of autotransplantation performed at the seat of the Association of São Paulo State Dentists at the city of Ourinhos, SP. The mandibular first molar was the tooth substituted in all cases, and third molars with incomplete root formation were the donor teeth. Until the present moment, all cases succeeded. The transplanted teeth present characteristics of naturally implanted teeth (considered as "normal"). In conclusion, autogenous tooth transplantation has demonstrated success in the replacement of lost teeth, becoming a quite viable option from both clinical and radiographic points of view.

Interdisciplinary approach of implant-supported prostheses: from periodontal disease to immediate loading

Souza, C.M.G.; Gregghi, S.L.A.; Sant'Ana, A.C.P.; Passanezi, E.; Rezende, M.L.R.

The development of implantology has led to progresses on treatment plans and techniques as well as claimed for specialization and knowledge of recent therapies. This makes it mandatory that interdisciplinary knowledge becomes part of the routine in diagnosis and treatment plans that meet the patients' expectations with efficiency, reliability and rapidness. This case report exemplifies the importance of the integration of periodontics, Prosthodontics and Implantology for well succeeded implant-supported rehabilitation. The crowded lower incisors of a non-smoking, healthy, adult male patient showed severe mobility due to advanced periodontal disease and

were scheduled for extraction. Aiming at implant-supported therapy, the teeth were extracted with a regenerative procedure, using a resorbable membrane covering the alveoli. This was made in order to prevent epithelial migration and to maintain osseous thickness and height. During the following 11 months, the patient was provided with an adhesive direct provisional prosthesis until the date of implant installation. The edentulous space was insufficient for replacing the four missing incisors, as they were crowded before. Then, two small diameter implants (3.3x13mm, Conexão Sistemas de Prótese, SP, Brazil) were placed at the position of teeth 42 and 32, with tooth 31 as a pontic. As the excellent bone quality was already expected, the immediate loading on the implants was chosen as therapeutic option. An acrylic fixed prosthesis was constructed and also used as a surgical guide and then fixed to UCLA abutments connected to the implants. The patient did not show any disturbances or symptoms in the postoperative period and felt extremely satisfied with the course of his rehabilitation. In conclusion, the interdisciplinary approach was the main element for the success of this case and emphasizes the importance of the integration among the specialties.

Immediate implants applied to endodontic failures

Naves, M.M.; Menezes, H.H.; Cherulli, T.L.; Borges, D.C.; Rodrigues, M.M.; Naves, M.M.

Despite the currently observed favorable therapeutic perspectives, failures still occur thus leading to dental loss, for example, the endodontic treatments. In these cases, it may be verified esthetics/functional integrity of the periodontal tissues associated with tooth loss. Immediate implants are installed after removal of hopeless teeth and became a viable option for the maintenance of the periodontal architecture because there is anatomic compatibility with alveolus and the possibility of eliminating the injury and local contamination. This work reports cases of immediate implant installation (SIN Implants Innovation) in teeth 12(SUR-3013), 11(SUR-4015) and 21(SUR-5013), which were condemned due to endodontic lesions resulting from failed parentodontic surgery. The surgical access was obtained on a conservative manner by means of an intrasulcular incision and removal of teeth with an extractor, aiming at the preservation of the anatomy and gingival esthetics. Then, a second access was gained at the apical level, allowing the debridement of the surgical chamber for elimination of the periapical injury, visual orientation for setting of the implants and filling of the surgical chamber with xenogenous bovine bone graft (Genox/Baumer). After this procedure, the bone chamber was covered with an absorbent membrane (Gendern/Baumer) and the healing screws were positioned on the implants. Later, a provisional partial removable prosthesis was installed and the implants were rehabilitated after 6 months. After 12 months of rehabilitation, the implants present satisfactory functional and esthetic conditions, without any type of alteration or pathology.

Evaluation of zygomatic complex fractures in the Residence Service in Surgery and Oral and Maxillofacial Traumatology of UEM between 2005 and 2006

Perón, M.F.; Ferreira, G.M.; Gomes, R.S.; Filho, L.I.; Pavan, A.J.

This work presents an epidemiologic survey of zygomatic complex fractures treated at the Service of Surgery and Oral and Maxillofacial Traumatology of the State University of Maringá (UEM) taking into account the period between January 2005 and July 2006. The evaluated aspects were: gender, age, etiology of the trauma, classification of the fracture and type of treatment. Of the 95 analyzed handbooks, there were 95 zygomatic bone fractures. There was predominance among the male patients (male-to-female ratio of 2.5:1), at the age range of 31 to 40 years. The fractures were classified according to Knight & North criteria (1961), and class 1 fractures were the most common type. The most frequent etiology was physical assault followed by car crash, mostly caused by motorcycles. The surgical treatment was the most frequent, being undertaken with the use of rigid internal fixation with plates and screws made from titanium (1.5 and 2.0 system).

Paracoccidioidomycosis: Clinical case report

Basso, T.L.D.; Diniz, M.A.; Sasdelli, M.D.M.; Tanimoto, H.M.

Paracoccidioidomycosis manifests in the granulate form and has attacked men in their 30s to 50s from rural areas in states like MG, SP, GO, RS, PR and RJ. The causative agent can be contracted through the air, contaminated foods, cutaneous injury and mucosa, which are extremely rare. The disease is divided in acute, subacute and chronic and the treatment is undertaken with systemic antifungal drugs. In the case hereby present, a 49-years-old, male Caucasian alcoholic, smoker ploughman sought treatment at the Clinic of Clinical and Radiographic Semiology of "Fundação Educacional de Barretos". the patient reported toothache, fever and had difficult to eat. He presented intraoral and extraoral injuries and was diagnosed as having paracoccidioidomycosis, which was confirmed after some complementary exams. Mycoses usually manifest during the patient's productive phase of life, and disease

has social and economic impact. Generally, the dentist is responsible for diagnosing the disease and the systemic treatment is prescribed by a physician. Discontinued of the treatment may progress to damage ad death.

Complications in Implant therapy

Junior, J.F.S.; Monteiro, F.A.; Greggi, S.L.A.; Sant'Ana, A.C.P.; Passanezi, E.; Rezende, M.L.R.

Dental implants constitute an auxiliary method in oral rehabilitation allowing for replacement of one or more missing teeth. In the last decades, osseointegration has promoted a significant impact on treatment plan and changed the professional profile, which became complex and multidisciplinary. However, the therapeutic limits of safety and predictability, when surpassed, may bring as consequences, failures and complications that cause injuries to the patients and legal and ethic concerns. Even though it is extremely difficult to identify the actual causes of implant failures, it is suggested that they are related to complications during the surgical insertion (local factors), immediate postoperative complications or events during the healing period. This work presents cases of patients who were treated with the placement of osseointegrated prostheses, which failed functionally and esthetically. The probable risk factors as osseous availability and quality, periodontal conditions at the adjacent teeth and quality of the surrounding soft tissues are discussed. In conclusion, the success of osseointegrated therapy is dependent on observation of established criteria for prognosis which, if neglected, may impair or even prevent the achievement of proper esthetic and functional rehabilitation.

Predictability of the level of difficulty in third molars extraction

Sampieri, M.B.S.; Pastana, P.M.; Cardoso, C.L.; Bernini, G.F.; Almonte, M.E.R.; Junior, O.F.

The objective of this study was to estimate the level of difficulty in third molar extraction by comparing the initial planning, based on clinical examination and panoramic x-ray, and the required procedures for accomplishment of the surgery. Forty-five third molars with indication for extraction were evaluated. Six dentists of the Program of Vocational Practice in Oral Surgery (PPPCB/FOB-USP) participated in the work following the proposed methodology. Before of the surgery, the dentists were requested to estimate the level of difficulty of the surgery, classifying it in: 1- simple extraction; 2- need of scraping; 3- need of scraping and ostectomy; 4- need of scraping, ostectomy and tooth sectioning. After completion of the surgery, the dentists reclassified the level of difficulty. The results revealed a higher percentage of cases classified as level of difficulty 1. There was a lower percentage of cases classified as level of difficulty 3. These facts show the importance of the correct planning of extraction of third molars, even though the surgery was carried out by experienced professionals. This planning needs attention for diverse aspects, anatomic or not, because an incorrect treatment planning can complicate the execution of the surgery.

Reposition of the pre-maxilla in patients with bilateral lip and palate malformation

Romanowski, M.; Strujak, G.; Gomes, K.; Biron, C.; Drechmer, M.; Carlini, J.L.

The benefits of the autogenous grafting in the treatment of lip and palate malformations have been described by many authors. In the patients with bilateral malformations, some peculiarities are observed, namely, bone and soft tissue deficiency, protrusion of the pre-maxilla and the functional and esthetic damages caused by bucconasal clefts. In addition, these peculiarities make difficult orthodontic and prosthetic rehabilitation. This study has the purpose of demonstrating the benefits of bone grafts in patients with palate malformations. At CAIF (Integral Care Center for the Patient with Lip and Palate Malformation), at the city of Curitiba, PR, Brazil, we evaluated 30 patients with bilateral trans-foramen clefts. They were submitted to surgery to position the pre-maxilla in a better occlusion with autogenous grafting. In the surgery, the pre maxilla is dislocated, with rupture of bone and soft tissues, positioning these tissues with a surgical guide. Fixation of the graft and the pre-maxilla in the proximal segments of the jaw were made with plates and screws (1.5 mm). The results showed that 86% of the patients succeeded, as observed by grafting success, better phonation and cleft closing; 14% of the patients did not succeed. The replacing of pre-maxilla allowed better palate shape, phonation and chewing. In addition, there was better follow up in the required orthodontic and prosthetic treatments.

The orthognathic surgery in the treatment of obstructive sleep apnea

Avila, L.D.; Júnior, O.F.; Rodrigues, M.T.V.; Neri, N.B.D.; Sant'Ana, E.

Obstructive sleep apnea is an event in which a periodic cessation of airflow occurs for 10 or more seconds. The number of abnormal respiratory events *per* hour of sleep characterizes the existence of mild, moderate and severe obstructive sleep apnea syndrome (OSAS). Treatment of OSAS includes from simple measures such as weight loss, reduction of alcohol consumption, dental appliances and nasal continuous positive airway pressure (CPAP) up to surgical procedures like uvulopalatopharyngoplasty, tracheostomy and anterior mandibular osteotomy with hyoid myotomy and suspension. The greatest disadvantage of nonsurgical treatments of OSAS is that they require a high level of patient compliance to be successful. The objective of this work is to present a case of a patient diagnosed with type 3 OSAS submitted the orthognathic surgery for increase of the airspace and esthetic face reestablishment. The cephalometric and facial analysis showed class II malocclusion, mandibular deficiency and obstruction of the pharyngeal airway space. The surgical procedure used for the treatment of OSAS was the technique of mandibular and genial tubercle advancement, which resulted in the increase of the airway space.

Distance between mental foramina: descriptive study in dry skulls

Silva, M.Z.M.; Molinari, S.L.; Amado, C.B.; Casaroto, A.R.; Gomes, R.S.; Moreschi, E.

On patient rehabilitation with osseointegrated implants, the size of the edentulous area (prosthetic space) causes direct influence on the prognostic because there is a visible relation between this area, the number, size and diameter of the implants. In the edentulous mandible, one of the indications are the protocol prosthesis, initially developed by Branemark and colleagues, according to which only 6 implants placed between the mental foramina were considered as sufficient to support 10 fixed prosthetic elements. The goal of this study was to evaluate the distance between the mental foramina of both antagonistic sides. After granting approval from the Ethics Committee, a study was performed on 120 mandibles of people of both sexes, different ages and racial groups. Sixty had teeth and the other 60 were edentulous. They all came from the Museum of the State University of Maringá, also known as "Museu Didático de Anatomia Humana da Universidade Estadual de Maringá". The distance between both mental foramina was measured using a high precision flexible millimeter tape. The Student's *t* test ($p < 0.05$) was applied and the results showed there was no statistically significant difference between the mean distance between the mental foramina regarding dentulous and edentulous mandibles. From the obtained results, it may be concluded that the loss of all mandibular teeth and the physiological bone resorption caused by it does not alter the transversal position of the mental foramina. The recorded means indicate the possibility of installing the maximum of 6 osseointegrated implants between the mental foramina.

Electromagnetic field use for evaluation of the osseointegration process of implants submitted to immediately load – a pilot study

Fernandes, F.H.C.N.; Mello, A.S.S.; Nascimento, C.; Issa, J.P.M.; Barbosa, R.E.S.; Júnior, R.F.A.

The aim of this work was to verify if mechanical stimulus induced by an electromagnetic field (1.5 MHz, 20 min/day, during 2 weeks) can accelerate the bone healing process around implants inserted immediately after tooth extraction. The crowns of the right and left mandibular first premolars of 2 adult dogs, weighing 17 kg were sectioned and the remaining roots were removed using forceps. The distal alveoli were prepared using drills with 2; 2.7; 3.0 and 3.25 of diameter, until a width of 7 mm was obtained. Two Nobel Biocare MKIII implants with TiUnit surface (3.75x7.0mm) were screwed on the left side, and the two others on the right side, up to 45/50N using a manual torchmeter. After implant adaptation, 5-m high healing pillars were inserted up to 35N. The implants placed on the right side received the electromagnetic field over the healing cap, using a special device developed for this purpose. The implants on the left side served as control. After 2 weeks, the bone blocks containing the implants were removed and submitted to histological processing. The results showed little quantity of newly formed bone around the implants to which the electromagnetic field was applied, being possible to affirm that this stimulus acts as a negative factor for the bone adjacent to the implant, in relation to bone repair promotion in this experimental model.

Zygomatic implantations in the oral rehabilitation of patients with cleft lip and palate

Sanches, R.S.L.; Pinto, J.H.N.; Padovam, L.E.M.; Filho, H.N.; Lopes, J.F.L.

In some situations, cleft lip and palate injuries severely the jaw, which makes complex its rehabilitation. In this context, the installation of prosthesis in totally edentate

individuals becomes a great challenge for dentistry. Aiming to rehabilitate these individuals, the implants anchored in the zygomatic bone allow the installation of fixed prosthesis, promoting a balance to the chewing system. This innovation is provided by diagnostic methods that appear as a great ally in the planning and execution of the technique, such as computed tomography scanning, which allow constructing an archetype of the area to be operated. This work presents the case of an individual with cleft lip and palate who presented severe upper and lower jaw discrepancy and severely atresic jaw, where four zygomatic implants and additional implants were installed. Subsequently, a protocol comprising the placement of a fixed prosthesis in immediate function was accomplished.

Surgical treatment of oroantral communications

Neri, N.B.D.; Avila, L.D.; Júnior, O.F.; Sant'Ana, E.

Extraction of posterior maxillary molars occasionally results in communication between the oral cavity and the maxillary sinus. Therefore, we performed this review to investigate the occurrence of this type of complication, its most frequent location and causes, discussing the surgical techniques used for its treatment.

Radiographic planning and postsurgical evaluation in patients submitted to installation of mini-implants with orthodontic purpose

Tanaka, C.E.; Kobayashi, E.T.; Tanaka, E.E.

Mini-implants are used in Orthodontics as a source of anchorage during the conventional orthodontic treatment, and have successfully replaced extra-buccal devices that demand the direct patient cooperation. The objective of this work is to demonstrate the possibility of using the interproximal radiographic technique as a reference in the intention to precisely install mini implants between the tooth roots, without causing injuries to them. The method consists of the taking interproximal x-rays of the region of installation of the mini-implants, with the surgical guide fabricated from orthodontic wire and settled in the arc. It locates the roots of the second premolar and first molar and the guide, and evaluates its image distortion for the variation of the length and diameter of the guide. Financial support: Program of Scientific Initiation of the State University of Londrina.

Intra-examiner agreement in the acquisition of measurements for implant planning in panoramic radiographs

Pedrosa, E.F.N.C.; Alves, D.B.M.; Almeida, S.M.; Filho, A.M.; Freitas, D.Q.

The success of treatments with implants depends on many factors, such as pre-surgical evaluation of the patient. In this phase, radiographs would allow acquisition of measurement similar to real ones. The panoramic radiographs have been used as a first-choice examination in these cases for providing great anatomic visualization. The aims of this study were to evaluate the intra-examiner agreement in the acquisition of measurements and to evaluate the accuracy of these measurements. Three examiners analyzed twenty-one panoramic radiographs. The examiners made a tracing on a paper fixed to the images and measured nine regions with caliper. Vertical measurements of spheres in the images were acquired in order to discount the magnifying factor of the technique. The statistical analysis revealed a good intra-examiner agreement. There was no accuracy of the measures in the anterior regions. It may be concluded that the panoramic radiographs allow the acquisition of measurements close to the real ones when the correct magnifying factor will be deducted.

Maxillary sinus floor augmentation with autogenous bone graft and simultaneous implant placement: case report.

Trindade, P.A.K.; Suedam, V.; Suedam, I. K.T.

The main objective of maxillary sinus lift surgery is to correct the bone loss in the alveolar process due to maxillary atrophy and sinus pneumatization, allowing implant placement with an adequate length. Simultaneous implant placement in the grafted maxillary sinus is limited to patients with 4 to 5 mm of residual bone height to ensure implant stabilization. Autogenous bone graft is considered to be the gold-standard in oral and maxillofacial surgery because of its osteogenic, osteoinductive and osteoconductive properties. This work aimed to report a case in which maxillary sinus lifting was performed using autogenous bone graft and simultaneous implant placement, and also to discuss the long-term results described in the literature. A 49-year-old, female patient missing the superior-posterior teeth on both sides of the maxilla was referred for treatment. A panoramic radiography, a computed tomography scan and a cast were required for surgical planning. Two titanium implants (3i Implant Innovations Inc.), with dimensions of 3.75x11.5mm and 3.75x13mm were fixed in the premolar region on the left side of the maxilla, with no need of bone grafting. On the right size of the maxilla, initially presenting 5mm of bone height, 3 implants (3i

Implant Innovations Inc.), sized 3.75x11.5mm were placed in the canine and premolar regions simultaneously with sinus lifting and autogenous bone grafting, harvested from the mandibular symphysis. Following a healing period of 6 months, the site was reopened in order to expose the implants to the oral cavity and initiate the restorative phase of treatment. Results and grafting the maxillary sinus with autogenous bone and simultaneous implant placement resulted in implant osseointegration and an expressive gain of height in the alveolar process by means of radiographic and clinical assessments, allowing an appropriate anchorage for the fixed prosthesis.

Gingival papilla in critical Implantology: esthetic aspects

Frias, S.O.; Sant'Ana, A.C.P.; Passanezi, E.; Rezende, M.L.R.; Greggi, S.L.A.

The process of osseointegration and all the prerequisites for its attainment are essential for implant success. However, implant success cannot be analyzed only with respect to osseointegration and recovery of masticatory capacity, but the esthetic aspects should also be considered, especially in the jaw. The implant-retained prosthetic crowns should be similar to natural teeth regarding form, color, size, etc. It is mandatory that the gingival tissue has adequate conditions. The peri-implant gingival tissue must present characteristics, such as apical regular parabolic contour in the free surfaces compatible with that of natural teeth and more coronal in the proximal areas, a rose-pale coloration, amongst others. An aspect in particular that concerns periodontists and implantodontists is the need of having a gingival papilla completely filling the interdental spaces in the proximal areas, preventing the occurrence of voids ("black empty spaces"), which can undoubtedly compromise the final rehabilitative quality of the implant. Thus, some aspects must be analyzed in the planning phase of implants, such as: the periodontal condition of the adjacent teeth, space adjusted for the set of implants, excellent position in implant installation, implant diameter in relation to the existing space, etc.

Reconstruction of atrophic alveolar edge with allografts: case report

Filho, E.V.Z.; Farah, G.J.; Filho, L.L.; Pavan, A.J.; Jacob, J.; Camarini, E.T.

Although dentistry has greatly evolved in the past decades, the rehabilitation of severely reabsorbed edges continues to be a challenge. With the advent of osseointegrated implants, more attention has been given to this problem. Several techniques and materials have been developed aiming at reconstructing bone losses, the golden standard in these cases being the use of autogenous bone, due to its biological characteristics of osteogenesis, osteoinduction and osteoconduction. However, they present drawbacks and limitations that increase the risk of morbidity and the costs to the patient. To overcome these shortcomings, there is the option of bone transplantation with the use of a bone bank. These bone samples are removed from individuals who are organ donors, and go through a process to prevent immunogenic reactions and to ensure that they do not transmit any type of pathology to the recipient. They can be used for the reconstruction of the atrophic alveolar edges, avoiding the need for a second donating area and providing enough amounts of tissue in each case. This work had the objective to present a case of reconstruction of atrophic alveolar edge with a graft from a bone bank, as well as to discuss about its biological aspects.

Operative Dentistry

Harmonic esthetic rehabilitation in a patient with dental wear

Melo, J.C.P.; Furuse, A.Y.; Mondelli, J.

Tooth wear is one of the most complex processes and involves mechanical, thermal and chemical causes. Currently, tooth wear due to the bruxism is increasingly more present in daily clinical practice. This parafunctional habit has been related to stress and the current life style, which have led to an increase of its incidence in the worldwide population. To treat tooth wear resulting from bruxism, the dentist must have knowledge of the dental anatomy and optical behavior of tissue, as well as know how to evaluate and stabilize the temporomandibular joint in centric relation. In this way, the objective of this work was to report a case of generalized tooth wear with boarding for harmonic esthetic rehabilitation. Tooth wear was treated by restoration of the anterior guide with composite resin and further occlusal adjustment with the R.O.C.A system. This treatment allowed the attainment of a steady harmonic anteroposterior relation, with improvement of the maximal habitual intercuspation. Moreover, the adequate passage of the anterior guide was established. The treatment approach accomplished in the present case provided to the patient a pleasant and balanced esthetic smile by means of a reversible, conservative and less costly procedure.

Advantages and limitations of glass fiber posts

Oswaldo, M.V.A.; Melo, J.C.P.; Kegler, E.; Freitas, C.A.

One of the last levels of prevention, in the health field, is the limitation of the damage, which involves the preservation, as much as possible, of the healthful portion of a damaged tissue. In Dentistry, it occurs in the cases where little remaining dental structure exists, forcing the dentist to use a root canal post, which will make possible the subsequent setting of the respective crown. The posts can be metallic, casted and later cemented, or can be obtained from distinct materials (either metallic or not), but fabricated from different methods. Glass fiber posts are included in this last group. The objective in this work was to address the advantages and limitations of this type of post, as well as present some of its possible clinical applications. Glass fiber posts can substitute metallic post advantageously, when esthetics is important, as in case of transparency caused by little thickness of the dental remainder, in the buccal region. The advantages of glass fiber posts are their modulus of elasticity very close to that of dentin and low thermal and electric conductivity. Moreover, the material is easy to handle (during fabrication of the core as well as during its eventual removal) and has good cost-effectiveness relation. Although glass fiber posts have been extensively used, perhaps due to their clinical ease of fabrication, there are limitations imposed by their properties, such as the small shear and tensile strengths. Therefore, this material should only be used when there is a reasonable amount of remaining dentin.

Evaluation of marginal adaptation of indirect restorations using the resin-coating technique after load cycling and thermocycling

Correa-Medina, A.; Di Hipólito, V.; Góes, M.F.; Sinhoretto, M.A.C.

The aim of this study was to evaluate the marginal adaptation of indirect restorations, using different combinations of the "Resin Coat Technique" (RCT), after load cycling and thermocycling. Twenty human molars were used. In each tooth, two cavities were prepared, one on the mesial surface (margins in enamel-ME) and the other on the distal surface (margin in dentin- MD), adding to a total of 40 cavities, which were assigned to four groups. In G1ME and G2MD, a combination of 1-step self-etching adhesive and low viscosity resin (Clearfil S3/ Protect Liner) was applied. An association of 2-step self-etching adhesive and low viscosity resin (Clearfil SEBond/ Protect Liner) was applied to the specimens in G3ME and G4MD. After applying the RCT, impressions were taken from the cavities and poured with stone plaster. The fillings were fabricated using the Sinfony system (3M/ESPE) and were cemented with a resin-based cement (Rely X ARC). After 24 hours, the teeth were submitted to thermocycling (2,000 cycles/5-55°C) and load cycling (250,000 cycles – load 100N) followed by the application of Caries Detector (Kuraray) upon all restoration margins and washing for 30 s. Images were captured and evaluated using Image Tool 3.0 software for assessment of dye penetration and percent conversion. The results were submitted to ANOVA and Tukey's test ($p < 0.05$). The mean values (%) were: G1ME=36.42; G2MD=28.08; G3ME=15.21; G4MD=17.23. There was statistically significant difference among the groups. G3ME and G4MD had significantly better results than G1ME and G2MD ($p < 0.05$). It may be concluded that when the RCT was used in association with a 2-step self-etching adhesive + low viscosity resin there was a better marginal adaptation than that observed when instead a combination of 1-step self-etching adhesive + low viscosity resin was used. There was no statistically significant difference between the adaptation of the restorations with margins in enamel or dentin after load cycling and thermocycling.

Anterior Esthetic-Functional Rehabilitation: Multidisciplinary Approach

Brito, C.A.B.; Boaventura, J. M. C.; Padovani, G.C.; Queiroz, R.S.; Porto-Neto, S.T.; Candido, M.S.M.

Dentistry follows paths that go beyond the restorative techniques, looking for the reestablishment of function allied to dental esthetic, thus fulfilling the patients' expectations and welfare. The obtaining of a harmonious smile, in many cases, demands a multidisciplinary approach involving several dental specialties. The constant evolution of restorative materials (resin-based cements, dental ceramics, non-metallic pins and adhesive systems) and techniques make possible the achievement of an excellence esthetics, which has increased among patients' requests. The aim of this work was to emphasize the importance of a multidisciplinary approach for complete functional and esthetic rehabilitation, as exemplified with a case report. The patient B.A.S looked for treatment motivated by the need of improving the esthetics of his anterior teeth. During the past history review, the patient reported a root canal treatment of tooth 11 and placement of an acrylic crown, without painful symptomatology. The clinical exam revealed healthy periodontal tissues, absence of dental structure loss, esthetically unsatisfactory crown on tooth 11, as well as darkening of tooth 21. The radiographic examination of the area showed a periapical lesion associated with tooth 21, suggesting the need of endodontic treatment. Thereafter, the treatment plan comprised subsequent bleaching (immediate in-office technique) of tooth 21; placement of an intraradicular retainer in tooth 11 (non-

metallic esthetic post - glass fiber post, due to the presentation of more than 2 mm of coronal remainder after preparation) and placement of an all-ceramic crown (IPS EMPRESS II) on tooth 11. The excellent esthetic and functional results were only reached due to the appropriate planning, integration of several procedures and materials available in modern dentistry, associated with a good work performed by the prosthetic technician.

The action of the acidulated and neutral fluorides in the reorganization of human dental enamel after bleaching with led/laser: a scanning electron microscopic study

Ferreira, S.S.; Morhy, O.N.; Tapety, C.M.C.; Araújo, J.L.N.

There are several possibilities of esthetic restorative treatments. However, with the evolution of the bleaching techniques, tooth bleaching has been considered the first option in cases of color alteration for being considered a less invasive and conservative intervention. The purposes of this study were to evaluate morphologically by scanning electron microscopy (SEM) the structure of human dental enamel submitted to bleaching with 35% hydrogen peroxide activated by light LED/laser, and to analyze two possible treatment alternatives for the bleached enamel surface using two fluoridated agents that could aid in its morphological reorganization. Forty intact human premolars extracted for orthodontic reasons were sectioned in a mesiodistal direction and at the cemento-enamel junction, the buccal sections being allocated in four groups. After receiving three applications of the bleaching gel and final burnishing, the experimental groups (GII, GIII and GIV) were submitted to different surface treatments. This procedure was repeated 7 and 14 days later. GII did not receive any surface treatment, GIII received 1-minute application of 1.23% acidulated fluoride gel, and GIV, 2% neutral fluoride gel for the same period. The specimens were stored in artificial saliva 37°C between sessions. The control group (GI) remained stored in this solution throughout the course of the study. SEM analysis showed that the specimens presented superficial irregularities and porosities, in different degrees, being evaluated by a score system. Kruskal Wallis statistical test revealed that only GI and GIII differed significantly to each other, showing that the 1.23% acidulated fluoride gel is capable of become evident the alterations in the morphology of the enamel, whereas the 2% neutral fluoride gel has a trend to revert this process.

Marginal infiltration on Class V restoration

Brandão, M.R.S.; Delgado, R.J.M.; Oliveira, T.D.O.; Slongo, F.; Oshiiwa, M.; Cardoso, J.A.; Mariotto, L.A.

Although the restorative dentistry is highly committed to esthetics, its main goals remain the preventive and healing aspects. In spite of the clinically proved and research-supported efficiency of contemporary adhesive systems, failures in adhesive process still occur. Therefore, the industry of biomaterials is constant evolution. There is a continuous claim for the development of research projects intended to deal with the problems of integration between new materials and tooth structure. The purpose of this study was to compare the marginal infiltration degree of class V composite restorations at gingival and occlusal margins. Single Bond (3M/ESPE), Self Etch Bond (Vigodent), Xeno III (Dentsply), Magic Bond (Vigodent) and Multi Bond Uno (DFL) adhesive systems were used. Thirty-five extracted human teeth were selected and allocated in 5 groups (n=7). Seventy standardized cavities were prepared on the cervical third of buccal and lingual surfaces. The adhesive systems were applied according to the manufacturer's instructions, being a system *per* group. Concept (Vigodent) composite resin was used as the restorative material. Thereafter, the specimens were submitted to a tracer agent staining on thermocycling and prepared for analysis. The infiltration degree was determined by dye penetration extension used in the thermocycling regimen. The statistic analysis showed that Single Bond and Multi Bond Uno had similar behavior in enamel, providing better results. The worst results in enamel were obtained with Self Etch Bond. In dentin, Self Etch Bond and Multi Bond Uno had the best results, whereas Xeno III presented the least desirable results.

Stress distribution at dentin/adhesive interface after self-etching adhesive system application. Study by finite element method.

Anchieta, R.B.; Junior, M.M.; Archangelo, C.M.; Sundfeld, R.H.; Rocha, E.P.

Although self-etching adhesives have been claimed to have advantages on hybrid layer (HL) formation, such as lower working time, there are no studies investigating stress distribution at dentin/adhesive interface (D/A) by finite element method (FEM). Thus, the objective of this study was to analyze, by two-dimensional FEM, the stress distribution at the D/A interface. For such purpose, 5 groups (G) were established with two HL thicknesses and 2 tag lengths, as follows: G1- dentin specimen without any conditioning procedure and restored with composite resin (CR); G2 - similar to G1, with 3 µm for HL thickness and 19 µm for tag length; G3

- similar to G2, with 3 µm for HL and 17 µm for tag; G4 - similar to G2, with 6 µm for HL and 19 µm for tag; and G5 - similar to G2, with 6 µm for HL and 17 µm for tag. Two tensile forces (20N), either perpendicular (C1) or oblique (25°) (C2), were applied to the CR surface. The finite element program Ansys 10.0 was utilized for the numerical analysis. HL thickness variation did not change the stress distribution in the HL itself. However, there was an increase of stress in the other structures (tag, peritubular and intertubular dentin). The variation of tag length did not change significantly the form the stress. The perpendicular and oblique loading provided similar manners of stress distribution. Nevertheless, the stress level was 4 times higher for the oblique loading. In conclusion, HL thickness influenced more the stress distribution than the tag length.

Characteristics of TMJ noise analyzed by electrovibratography

Crosio, D.M.; Carrasco, T.G.; Hotta, T.H.; Mazzetto, M.O.; Venezian, G.C.; Silva, M.A.M.R.

Studying temporomandibular joint (TMJ) noise is an important parameter for diagnosing temporomandibular dysfunctions. In this study, eight groups (n = 9) were formed according to TMJ dysfunction classification provided by a vibration analysis equipment. Parameters for analyzing TMJ noise were: total vibration energy, peak amplitude, and peak frequency. Mouth opening range was also analyzed. Statistical analysis results for each parameter were significant at the level of 1%. Each analyzed group presented different noise characteristics. This allowed for inclusion of the groups within a determined value category. The patient group with normal condyle/disk relationship always presented the lowest values. The type of TMJ joint noise was characterized by analyzing total integral noise, peak amplitude, peak frequency, and mouth opening. Analyzing joint noise by electrovibratography suggests the type of joint dysfunction and may help in diagnosis as well as in treatment plan.

How to reproduce the optical properties of teeth with direct composite resin and ceramic material

Calixto, L.R.; Lins, F.F.; Clavijo, V.; Kabbach, W.; Mendonça, A.A.M.; Silva, A.O.; Andrade, M.F.

Patient demand regarding having teeth with good shape and natural color is a reality in the current dentistry, and the placement of "invisible" restorations became a very important requirement in the search of a satisfactory esthetic treatment. In this context, it is of paramount importance to know the optical properties of dental tissues and restorative materials alike. The success of the restorative treatment is determined by the clinical behavior of these materials, which must be similar to that of natural teeth. The color of teeth is determined by the amount of absorbed and refracted light, and mainly reflected, and its behavior is dependent on the region of the teeth. There are regions with greater amount of enamel, which are more translucent, while others have a greater amount of dentin, being thus, of less translucent (or more opaque). These phenomena must also be reproduced in direct and indirect restorations. Moreover, some important properties such as fluorescence, opalescence, translucence are present in the natural dental structures, and must be also present in the chosen restorative material. Therefore, the objective of this work was to demonstrate these optical properties and to show how to mimic ceramic and the resin restorations in the different areas of the teeth.

Adhesive composite restorations to close diastemas and reshape maxillary incisors: case report

Apayco, L.C.C.; Mondelli, R.F.L.; Baseggio, W.; Sampaio, P.C.P.; Atta, M.T.

Alternatives that result in minimally invasive esthetic treatments, conservation of dental structure and durability of restorations are a concern in Dentistry nowadays. Diastema is one of the problems that cause, in many patients, permanent discomfort and, for the dentist, is a challenge to reproduce the shape and color of teeth and harmony with dentofacial composition. This case report presents the use of a composite resin with color stratification technique and a silicone matrix in a young woman with cosmetic concerns regarding her maxillary incisors with diastemas between teeth 11 and 21 and loss of the incisal edge of the lateral incisors. A preoperative impression was obtained with alginate to record the existing maxillary condition. The treatment planning was done by waxing the stone model to reproduce the desired shape and size and a silicone matrix was obtained to be used as a guide. Filtek Supreme Z350 composite resin was then applied according to a color stratification technique (body A2B, enamel A2E and translucent YT) to reshape the lateral incisors and close the diastema. Finally, the restorations were polished to optimize the esthetic results. Finishing and polishing procedures were done with 24-blade carbide burs, Diamond pro and Diamond flex with a Diamond paste (FGM). The immediate final outcome and the 1-year control showed that, in addition to being clinically adequate this treatment approach provide satisfactory esthetics.

Cosmetic reshape by direct composite resin technique - closing of diastemas in anterior teeth

Lima, J.P.M.; Boaventura, J.M.C.; Júnior, M.E.S.; Candido, M.S.M.; Neto, S.T.P.

Currently, esthetics is one of the greatest challenges of Dentistry. Dentists are frequently approached by patients that are unsatisfied with the harmony of their smile and, one of the cases that more commonly cause patient dissatisfaction is diastema in anterior teeth. The clinical practice requires more and more a correct planning and easily accomplished procedures, ahead of a more demanding and clarified population. The settlement of a treatment plan makes the dentist more confident to handle the case. In view of the issues mentioned above, this work reports a case of the transformation of maxillary anterior teeth by altering the space proportion between them. A direct composite resin technique was used for closing the diastemas, comprehending an accurate esthetic planning and smile harmonization based on the golden proportion obtained directly from the plaster model and accomplished by case waxing. This restorative technique considerably facilitates the work of the dentist with regard to cases of greater esthetic complexity. The treatment involved small superficial grinding on enamel surface in order to reshape the involved teeth. The outcomes of this case demonstrate that this treatment approach has a simple planning and is easy to perform, with a reduced clinical time (two sessions in this case).

Cytotoxic effects of different concentrations of chlorhexidine on the odontoblast cell line MDPC-23

Lessa, F.C.R.; Nogueira, I.; Aranha, A.M.F.; Giro, E.M.A.; Hebling, J.; Costa, C.A. S.

The aim of this study was to evaluate the cytotoxic effects of different concentrations of chlorhexidine gel (Chx) to an immortalized odontoblast-cell line (MDPC-23). The cells (30,000 cells/cm²) were plated into 24-well dishes (6 wells *per* group) and incubated for 72 hours. After this period, the complete culture medium (4-MEM) was replaced by fresh 4-MEM mixed with Chx gel in such way that the following experimental groups were established: Group 1: Chx 0.06%; Group 2: Chx 0.12%; Group 3: Chx 0.2%; and Group 4: Chx 1%. In Group 5 (control) the cells remained in fresh 4-MEM. After 2-hour incubation of the cells in contact to the experimental Chx preparations or control solution, the cell metabolic activity was assessed by the MTT assay, which measures the mitochondrial respiration of the cells. The numeric data obtained from the MTT assay were submitted to the statistical analysis of Mann-Whitney. In Groups 1, 2, 3, and 4 the cell metabolism decreased by 77.5%, 81.0%, 81.0%, and 82.5%, respectively. The difference between these experimental and the control groups was statistically significant. Regarding the Chx preparations, it was observed statistically lower cytotoxic effects in Groups 1, 2, and 3 than in the Group 4. According to the experimental conditions, it was concluded that all concentrations of Chx preparations caused intense cytotoxic effects (more than 75% of cell metabolism inhibition) when applied directly on the cultured MDPC-23 cells.

Surface roughness of condensable composite resins: effect of surface polishing

Boaventura, J.M.C.; Padovani, G.C.; Queiroz, R.S.; Lima, J.P.M.; Cândido, M.S.M.; Porto-Neto, S.T.

The aim of this study was to evaluate, comparatively, the surface roughness of composite resins as a function of the finishing and polishing technique. Microhybrid (M1: Z100™ - control group) and Condesable (M2: P60™, M3: Prodigy Condensable™, M4: Surefill™) composite resins were selected. Thirty circular specimens with dimensions of 5x2mm were fabricated for each material and stored in saliva substitute at 37°C, for a 24-hour period before the accomplishment of polishing procedures and surface roughness reading. The resins were allocated to two polishing techniques: (P1) without superficial polishing and (P2) polishing with sandpaper (polishing machine) and subsequent polishing with felt disc with abrasive paste. Surface roughness was evaluated by using a profilometer (Digital Profilometer Prazis Rug-03) with three measurements *per* specimen. The values were analyzed statistically by analysis of variance (p>0.05). The results revealed statistically significant differences among composite resins as pronounced as between the polishing techniques. It may be concluded that, for all types of composite resin, surface roughness was less accentuated in P1 compared to P2; and that the M3 material presented the lesser roughness, followed by an increasing sequence with M1>M2>M4.

Quantitative analysis of the capacity of translucent posts in transmitting luminous energy in its different depths

Morgan, L.F.S.A.; Pinotti, M.B.; Albuquerque, R.C.; Poletto, L.T.A.; Peixoto, R.T.R.C.; Albuquerque, R.C.

The study evaluated quantitatively the luminous energy transmitted in the different depths of several fiber posts. Ten glass fiber posts (White Post DC®, DT Light Post®, Aestheti Post®, C-Post®, FRC Postec®, Cosmopost®, Fiberkor Post®, Exacto®, Reforpost Mix® e Reforpost®) were inserted into black resin blocks. The specimens were cut with a precision machine (Isomet 1000, Buehler) and the depths of 12, 8, 4 mm and top surface were assessed. The light-transmitting measurements were done using a digital power measuring equipment (NOVA, OPHIR). The accuracy of the positioning of the light-curing unit (Curing Light 2500, 3M ESPE) in relation to the specimen was assured by a custom-made metallic mold, especially fabricated for this experiment. Data were submitted to the Kruskal Wallis test (p<0.05). At the depth of 12mm, FRC Postec was the post with higher luminous energy, which was similar to that of the control specimen. However, at the depth of 8mm, the posts White Post DC and DT Light Post presented similar values to the control and higher than that of FRC Postec. At the depth of 4mm, White Post DC was similar to the control presenting the highest values, and Exacto presented the lowest value. FRC Postec and DT Light Post were intermediate to those. The other posts did not present significant values at these depths. On the top surface, White Post DC was similar to DT Light Post and FRC Postec, even though it was lower than the control. C-Post presented the lowest value. The following conclusions were drawn: the amount of transmitted luminous energy depends on the type of post. There was a significant decrease in the amount of light transmitted by all posts with the increase of depth. Even without the post, the luminous intensity inside the duct seems to decrease to insufficient levels for polymerization especially in the apical third.

Reestablishment of anterior guide in tooth wear patient

Chiok-Ocaña, L.; Gonzalez-Bernal, H.; Mondelli, R.L.; Pereira, J.C.; Mondelli, J.

Stress determined by the modern society together with the esthetic demands and behavioral changes can be responsible for alterations in the stomatognathic system. Bruxism presents as the main oral pathology related to psychological alterations; it is associated with maxillary discrepancies, causes wear on incisal and occlusal tooth surfaces and loss of dental hard tissue. Depending on its severity, it can compromise the smile esthetics and the occlusion. Tooth wear is a common problem of multifactorial origin in the dental practice, and its rehabilitation can be made through direct adhesive restorations, making the treatment more accessible to the patient. The aim of this work was to review and discuss the most relevant aspects of tooth wear, by reporting a case in which esthetics and function were recovered, consequently increasing patient comfort.

Technique of sculpture with occlusal matrix in posterior tooth

Moraes, M.L.L.; Franco, M.H.M.; Leandrini, J.C.S.

The purpose of this work was to describe the occlusal sculpture technique in posterior teeth using composite resin. In recent years, it has been very common the report of occurrence of initial occlusal enamel lesions that are only detected by an interproximal x-ray, which compromises the dental structure. Composite resin is the most frequently used restorative material for these instances, as direct restorations meet all contemporary patient's esthetic expectations and demands. This technique enables to record the anatomic details before starting cavity preparation. This record restores the original anatomy of the tooth and eliminates the sculpture stage, in such a way that it requires less chairtime. Moreover, this technique also minimizes the dental attrition to the structures surrounding the restoration during the sculpturing time.

Gradual sculpture and stratification of chroma in composite resin for posterior teeth: laboratorial steps

Moreira, F.C.L.; Rodrigues, P.C.F.; Portilho, C.D.M.; Souza, J.B.; Freitas, G.C.; Netos, J.M.R.; Lopes, L.G.

Currently, composite resin selection for direct restoration of posterior teeth has become an important stage in the restorative procedures, since there is a great commercial availability presenting different optical, physical and mechanical properties. However, in addition to the choice of the material, the restorative technique is extremely important. Thus, the placement of small composite increments in a gradual manner, together with the selection of the ideal color for each layer, provides a simplified protocol to restore class I and II cavities. This allows the reestablishment of anatomy, function and color, in addition to reducing the tensions resulting from polymerization shrinkage. In this way, the aim of this work was to describe the

laboratorial steps of class I and II cavity restoration using the technique of gradual sculpture with stratification of chroma. The selected teeth for accomplishment of the steps were maxillary first molars. For class I cavities, DA3 shade was used for dentin and EA2 and T-Yellow were used for enamel, all from Opalis resin (FGM). For Class II cavities, YE shade was used to establish the mesial marginal crest, A3 for dentin's body and A2 and YE for enamel, all from Esthet X (Dentsply). Brown and yellow stains were used for pit and fissures characterization. When restoring posterior teeth directly using composite resin, the dentists must have an integral knowledge of tooth morphology combined with the use of appropriate techniques and case planning, in order to have an acceptable esthetic outcome. The technique hereby presented is a useful tool for clinicians because it provides high-quality restorations that reproduce, as close as possible, the optical and morphological properties of dental tissues.

Low intensity laser therapy in temporomandibular disorder: analgesic effects and masticatory efficiency

Venezian, G.C.; Mazzetto, R.G.; Carrasco, T.G.; Junior, W.M.; Crosio, D.M.; Mazzetto, M.O.

The purpose of this study was to evaluate the analgesic effect of low intensity laser therapy and its influence on masticatory efficiency in patients with temporomandibular dysfunctions. This study was performed according to a random, placebo-controlled, and double-blind research design. Fourteen patients were selected and allocated into two groups (active and placebo). Infrared laser (780nm, 70mw, 105J/cm²) was applied precisely and continuously onto five points of the temporomandibular joint area: lateral point (LP), superior point (SP), anterior point (AP), posterior point (PP), posterior-inferior point (PIP) of the condylar position. This was performed twice a week, for a total of 8 sessions. To ensure a double-blind study, two identical probes supplied by the manufacturer were used: one for the active laser and one for the inactive placebo laser. They were marked with different letters (A and B) by a clinician who did not perform the applications. A visual analogical scale (VAS) and a colorimetric capsule method were employed. Data were obtained at three time points: before treatment (Ev1), shortly after the eighth session (Ev2), and thirty days after the first application (Ev3). Statistical analysis revealed significant differences at 1% significance level, which implies that superiority of the active group offered considerable temporomandibular joint pain improvement. Both groups presented similar masticatory behavior, and no statistical differences were found. Regarding the evaluation session, Ev2 presented the lowest symptoms and highest masticatory efficiency throughout therapy. Therefore, low intensity laser application is effective in reducing temporomandibular dysfunction symptoms, but has no influence on masticatory efficiency.

Anterior esthetic reestablishment by laminated veneer and total metal-free crown

Souza, F.B.; Sábio, S.; Sábio, S.S.

The esthetic demands of dental patients have increased considerably, thus requiring appropriate solutions from restorative dentistry. Therefore, dentofacial composition and color of the teeth are deeply valued nowadays, which makes necessary that, in addition to having good taste and knowledge, the dentist be aware of the properties and characteristics of modern materials so that highly satisfactory results can be achieved in re-establishing dental esthetics. This work reports the case of a young female patient, unsatisfied with her smile, who sought for an esthetic restorative treatment. In order to give back to the patient the pleasure of smiling, a porcelain indirect laminated veneer was placed on 11, and a total metal-free crown was placed on tooth 21 using the IPS Empress system. The final result was highly pleasant and satisfactory, once the patient showed a great pleasure in smiling again, thus increasing her self-esteem and improving her social life.

Microtensile bond strength of adhesive resin cements to enamel

Oliveira, M.M.; Botta, A.C.; Júnior, S.D.

Resin cements are increasingly used in dental clinic due to their excellent mechanical properties, adequate bond strength and improved esthetics. The aims of this study were to assess the microtensile bond strength of three adhesive resin cements in the cementation of composite resin indirect restorations on enamel and the influence of acid etching in the bond strength. Two null hypotheses were tested: (1) Resin cements promote similar microtensile bond strength to enamel; (2) The bond strength is not affected for the acid etching. Fifteen caries-free human third molars were sectioned buccolingually and at the cemento-enamel junction. The teeth were randomly allocated in 5 groups (n=3), according to the use of acid etching before of the cementation of pre-cured composite resin blocks (Z250; 3M/ESPE) and adhesive resin cement used: G1: Rely X ARC (3M ESPE), G2: Rely X Unicem self-adhesive cement (3M ESPE), G3: Rely X Unicem + acid etching, G4: self-etching cement Multilink (Ivoclar Vivadent), G5: Multilink + acid etching. After cementation, the teeth were sectioned

and submitted to microtensile test. Fractured surfaces were classified in adhesive, mixed and cohesive failures. Data were submitted to analysis of variance and Dunnett T3 test at 5% level of significance. Bond strength means (MPa) in a decreasing order were as follows: G3 (34.4) > G1 (19.5) = G2 (13.3) > G2 = G4 (5.4) = G5 (5.6). Adhesive failures were distributed in: G1: 25.0%; G2: 51.4%; G3: 38.2%; G4: 8.7% and G5: 22.2%. In conclusion, the bond strength is measured to the type of adhesive resin cement used. The self-adhesive cement associated with previous enamel acid etching promoted the highest bond strength.

The use of esthetic direct veneers in cases of color changes by posttraumatic endodontic treatment

Sampaio, P.C.P.; Pinheiro, H.B.; Benetti, A.R.; Apayco, L.C.C.; Coneglian, E.A.C.; Ishikiriyama, S.K.; Atta, M.T.

Nowadays, the search for esthetic treatments is associated with enhancing the smile by providing shape harmony, alignment, position and color of the teeth. The improvement of composite resin provides simpler and more conservative alternatives to solve cases of color changes in anterior teeth. The esthetic direct veneers appear as a solution for cases of color changes with the advantage of a shorter clinical time and lower cost. Nonvital teeth require the use of glass fiber post systems to enhance tooth resistance. The present work reports the case of an adult female patient with color changes of teeth 11, 12 and 21 due a posttraumatic endodontic treatment. As a first option, an internal bleaching was done, but the result was not as expected. The definitive option was reinforcing dental structure with a glass fiber post system (Reforpost - Angelus) and restoration with direct veneers. Opallis (FGM) composite resin was used according to the color stratification technique. A satisfactory esthetic and functional outcome were reached on the patient's smile.

Dental recontouring by esthetic direct restorations and periodontal plastic surgery: case report

Lima, M.D.R.C.; Pinheiro, H.B.; Sampaio, P.C.P.; Atta, M.T.; Ishikiriyama, S.K.; Coneglian, E.A.C.

Agensis of the permanent maxillary lateral incisor causes discomfort to patients because it leads to smile disharmony. Its prevalence ranges from 2.5 to 35% in a 3:2 female-to-male ratio. Dental recontouring and periodontal plastic surgery can be used for correction of this situation. The success on restorative dentistry is determined not only by the high-quality and functional esthetic of the restoration, but also by the interaction with the surrounding tissues. This case report involves a young patient with agensis of teeth 12 and 22, as well as presence of tooth 62 with color alteration due to endodontic treatment. In order to develop an esthetic, harmonic smile, the integrated and conservative treatment was chosen. The first step was the accomplishment of a periodontal plastic surgery on tooth 11 for correction of the regular concave arch. After healing, laser dental bleaching was performed. Tooth 13 was recontoured and reshaped, being transformed into a lateral incisor. Esthetic direct composite resin veneers (Opallis - FGM) were made on tooth 62, to obtain the shape of a permanent maxillary lateral incisor, with similar color to that of the natural adjacent tooth. With this interdisciplinary approach, it was possible to recover the esthetic harmony of the patient's smile.

Multidisciplinary aspects on the restoration of endodontically treated teeth: a case report

Michelazzo, A.L.; Mattos, M.C.R.; Aguilera, J.F.O.; Cury, A.H.; Pereira, J.C.; Pegoraro, T.A.; Ishikiriyama, S.K.

A multidisciplinary view is essential to achieve optimal clinical result for the currently available restorative treatments in dentistry. A 23-year-old female patient came to the Restorative Dentistry Clinic at the Bauru Dental School complaining about the color of her maxillary right second premolar. In addition to the esthetic aspect, the patient mentioned that after endodontic treatment she had been instructed to follow with the definitive treatment by a coronal reconstruction. The need for a periodontal intervention was determined clinically and radiographically, in order to re-establish the biological distances and final restoration of the remaining tooth. After the periodontal surgery and the reinstate of the biological distances, the restorative treatment was conducted by luting a fiber-reinforced post (D.T. Light Post, Bisco Inc.) into the root canal with a dual-cured self-etching and self-adhesive resin cement (Biscem, Bisco Inc.), followed by the final restoration (build-up and crown) with Z350 composite resin (3M ESPE). Two conclusions are remarkable in this report: 1) A multidisciplinary view is a notable requirement to achieve optimal results in dental care; 2) The wide array of materials now available for the restoration of endodontically treated teeth can provide functionally and esthetically acceptable results, by a relative easy technique and exempt of a laboratorial step.

Esthetic conservative procedures: enamel microabrasion

Consolmagno, E.C.; Cunha, L.F.; Furuse, A.Y.; Mondelli, J.; Mondelli, R.F.L.

Extrinsic pigmentation and enamel hypoplasia, of hereditary or acquired origin, present diverse treatments described in the literature. Enamel microabrasion has been a viable alternative because in addition to providing a good esthetic result, it is a fast and easily performed procedure. A 22-year-old female patient sought treatment due to unpleasantness with thin opaque white lines crossing all the surface of her teeth, characterizing a severe degree of dental fluorosis. After rubber dam isolation, two 10-second applications of a paste prepared with equal portions of pumice and 37% phosphoric acid was applied intermittently with an abrasive rubber point at low speed. Between applications, the teeth were copiously rinsed for elimination of paste residues. After, microabrasion, the teeth were polished with felt disk and polishing paste followed by topical application of acidulated phosphate fluoride during 4 minutes. This conservative treatment by enamel microabrasion promoted very satisfactory clinical results, eliminating the thin opaque white fluorotic lines from tooth surface.

Restoration of fractured anterior tooth using the stratification technique

Cunha, L.F.; Furuse, A.Y.; Benetti, A.R.; Mondelli, J.

The restoration of anterior teeth of young patients can be challenging to dentists, especially when it is not possible to bond the tooth fragment. Composite resins have not only demonstrated good clinical behavior due to its mechanical properties, but also became available in a variety of shades that reestablish the translucence of enamel, the opalescence of dentin, and the bluish aspect of the incisal edges. In order to optimize the results, it is important to properly follow the operative procedures, starting from tooth preparation up to the final finishing and polishing procedures. Likewise, the restoration sequence is important to restore value, chroma and saturation and, consequently, reestablish the natural appearance of the teeth. Therefore, the aim of this case report is to present the restoration of a fractured anterior tooth using a nanofilled composite resin and the stratification technique to restore shape, esthetics and function.

Esthetic and conservative treatment in anterior teeth

Kegler, E.; Melo, J.C.P.; Gonzáles, H.; Mondelli, R.F.L.

During the past decades, in dentistry, the areas with fastest advance and development were those related to esthetics. It is the dentist's obligation to acquire a deep knowledge of the anatomy and optical behavior of the tooth structures and of the various dental materials and techniques available to produce excellent treatment outcomes. Currently, many patients are not satisfied with their teeth or smile and are looking for a treatment that might give them the perfect smile. The different types of treatment available in these days include: porcelain crowns, direct and indirect veneers, composite resin restorations, cosmetic contouring, enamel microabrasion and tooth bleaching. It is very important for the dentist to understand the differences between the techniques regarding esthetic outcomes, preservation of dental structures, and clinical longevity when elaborating a treatment plan. The objective of this work was to present a case with an esthetic and conservative resolution. The technique used was tooth bleaching with a hybrid source of LED/laser and 35% hydrogen peroxide, cosmetic contouring and restoration using direct nanohybrid composite resin, with a silicone guide. The results were satisfactory esthetics and preservation of the dental structure obtained with clinical procedures of easy execution.

Compressive strength study of three dental cements at two different periods

Natalício, G.L.; Silva, B.M.A.H.; Freitas, M.F.A.; Freitas, C.A.; Mondelli, J.

The compressive strength represents one of the most important mechanical properties in relation to the masticatory forces and the dental materials. This work had as objective to evaluate the compressive strength of three dental cements (a zinc phosphate, a glass-ionomer and a resin cement), at the periods of 1 h and 24 s. For this test, 10 specimens of each material were fabricated using a split cylindrical polytetrafluoroethylene matrix (4 mm in diameter and 6 mm in height), with two internal orifices that allowed obtaining two simultaneous specimens. Specimen dimensions were in compliance with the recommendations of the American Dental Association (ADA # 96 specification) and the International Organization of Standardization (ISO 9917:1(E) standard). The results were analyzed statistically by two-way ANOVA and Tukey's multi-comparison test with $p < 0.05$. The resin cement presented the highest compressive strength means in comparison to other the cements, at both periods of time. On the other hand, the glass-ionomer cement presented the lowest compressive strength means amongst all materials, and at the different periods.

Evaluation of three dental cements in relation to shear punch strength

Gonçalves, E.S.; Silva, B.M.A.H.; Freitas, M.F.A.; Freitas, C.A.; Mondelli, J.

The dental cements must present satisfactory mechanical properties in order to support masticatory forces and occlusal loads in the oral cavity. The shear punch strength is a simple and efficient method to evaluate the strength of a material, by means of an axial load applied to dislocate a same material, or materials between itself. The objective of this work was to evaluate the shear punch strength of three dental cements (zinc phosphate, glass ionomer and resin cements). For this test, specimens were prepared using a ring-shaped matrix with dimensions of 14 mm of internal diameter and 1.5 mm of height and were attached to proper device for the test. Ten specimens of each material, for the respective test, were analyzed in the periods of 1 and 24 hours. The results were analyzed by two-way ANOVA and Tukey's multi-comparison test ($p < 0.05$). The resin cement presented the highest shear punch strength means, whereas the glass ionomer presented the lowest means among all tested materials, together with the evaluation periods.

Analysis of Vickers hardness in Nobel implants simulating the fluoride action in oral environment

Pereira, A.; Filho, R.B.F.; Pessoa, R.S.; Ribeiro, A.L.R.; Vaz, L.G.

Currently, titanium dental implants have been widely used to replace lost teeth and the fluoride present in toothpastes may alter the surface of these implants. The aim of the present study was to evaluate the Vickers hardness (VH) of commercially pure titanium implants with treated surface of Nobel Biocare® trademark, after simulating the action of fluoride in the oral environment for 5 and 10 years. Twenty one implants were randomly assigned to three groups: G0 (control, $n=7$), G5 (5 years, $n=7$), G10 (10 years, $n=7$). Three VH readings *per* specimen were made on the implant apices (Buehler microdurometer model 1600-6300). For simulation of fluoride action, the specimens were immersed in fluoride solution (1500 ppm, pH 5.3) for 184 hours (G5) and 368 hours (G10), the control group being immersed in distilled water. There was no statistically significant difference regarding the implant hardness after fluoride action for any of the groups (G0 $p=0.46$; G5 $p=0.73$; G10 $p=0.73$; Wilcoxon matched pairs test). However, there was significant difference among the groups ($p < 0.001$; Kruskal-Wallis test). Multiple comparisons showed that G10 was different from G0 before and after fluoride action ($p < 0.001$). Within the limits of this study, it may be concluded that fluoride was not able to alter the Vickers hardness of dental implants in either of the experimental periods.

Anterior restorations without bevel - the reason to use them

Cesnik, R.M.; Kabbach, W.; Andrade, M.F.; Cesnik, R.M.; Clavijo, V.G.R.

Fracture of the anterior teeth during childhood is common and sometimes the presence of the fractured fragment indicates tooth reattachment. However, the fragment is not always available or has already lost its optical properties. In this context, restoration of fractured teeth by the direct technique is challenging, even more when the dentist wants to preserve the maximum dental structure. This case report presents a clinical protocol for direct composite resin restoration of teeth 11 and 21, which had a middle third fracture in a young patient in whom it was preferred not to prepare a buccal bevel.

Extensive restorations in posterior teeth: problems and solutions

Oliveira, G.U.; Valdivia, J.R.M.; Gonçalves, E.S.; Mondelli, J.

In the clinical practice, the placement of direct posterior restorations could be difficult due to the large number of obstacles that are posed during the restorative procedure. In addition to a good diagnostic and an accurate treatment plane, it is important to know and to be skilled in different procedures, as well as make a correct choice and use of adjusted materials and accessories to obtain a successful restoration. The most common problems are the changes in the biological distances, lack of retention of the restoration, lack of enamel on the gingival cavity wall, difficulty in matrix adaptation, recovery of dental anatomy and contact point. This case report presents solutions for the restoration of posterior teeth with extensive loss of structure, using composite resin.

Adhesive cementation using a chemically actived system

Cioffi, M.S.; Kabbach, W.; Andrade, M.F.; Clavijo, V.G.R.

The adhesive cementation of fixed metal-free restorations using pure ceramic is an important step for the success of the restorative treatment, especially because it makes feasible a more homogenous distribution of forces exerted by the tooth-restoration

complex. Therefore, the success of this procedure is directly related to the knowledge of adhesive and luting systems used, as well as their possible incompatibilities. The guidelines for use of the actual self-curing resin-based cements, which associate the benefits of adhesive self conditioning hybridization with the chemical polymerization of resin cements, will be reported.

Composite resin in posterior teeth - feasibility of the direct technique for replacement of old amalgam restorations

Alves, S.V.; Andrade, M.F.; Kabbach, W.; Clavijo, V.G.R.

Nowadays, dark-colored restorations in posterior teeth are less tolerated by patients, who prefer the replacement of amalgam restorations. The popularity of composite resins is notorious, especially in posterior restorations. Nevertheless, its indication to restore teeth that possess old amalgam fillings should be carefully evaluated. The purpose of the present work was to discuss the indications of posterior composite resin restorations for replacement of old amalgam fillings by a case report. The unsatisfactory amalgam restorations on teeth 44, 45 and 46 were replaced by composite resin restorations using adhesive direct techniques because there was material indication.

Extensive functional and esthetic rehabilitation: reducing costs and optimizing results

Francisconi, L.F.; Prado, J.M.; Vasques, M.A.B.; Francisconi, M.F.; Pereira, J.C.; Francisconi, P.A.S.

Nowadays, even though emphasis has been given to prevention in Dentistry, missing posterior teeth is still observed relatively often, which can cause overfunction of anterior teeth, thus providing consequent wear of them. This is a cumulative process that demands, over time, extensive functional and esthetic rehabilitation, many times with an interdisciplinary approach. Therefore, this case report intends to elucidate possible alternatives for treating these alterations, which would make possible to reduce costs and treatment time, optimizing the outcomes. The treatment protocol started with the anamnesis and review of clinical history, considering unsatisfactory esthetic aspects and loss of occlusal vertical dimension (OVD) as the main patient's complaint. Clinical exam revealed absence of teeth 16, 17, 24, 25, 26, 27, 34, 36, 37, 45, 46 and 47, as well as the presence of pronounced incisal/occlusal tooth wear in all remaining present teeth. Unsatisfactory removable partial dentures (RPDs) were substituting lost structures. As longer and expensive treatments (fixed partial dentures, cantilevers or dental implants, for example) did not meet the patient's emotional and financial expectations, the treatment of choice was OVD rehabilitation by new RPDs and reconstruction of worn dental structure with direct composite resin. Immediate evaluation showed patient satisfaction and constant follow up has proved the treatment effectiveness until the present moment. It is important to emphasize that preservation is imperative to the success of cases like this. It may thus be concluded, that simple treatments can become an acceptable option for cases of extensive functional and esthetic rehabilitation, reducing costs and optimizing results.

EMax system - A new option in restoration

Moffa, E.B.; Kabbach, W.; Calixto, L.R.; Andrade, M.F.; Clavijo, V.G.R.

Development of new metal-free ceramic systems for indirect restoration, with physical properties similar to that of metal alloys, permits the fabrication of restorations with better mechanical properties and excellent esthetic characteristics. Moreover, free-metal ceramic restorations meet great popularity due to the increased demand of patients for a harmonic smile. In this work, we report a case of smile rehabilitation by using IPS e.Max System, a new highly promising ceramic system. The possibility of recovery of shape and dental function combined with esthetic characteristics, such as color, translucence and opacity, biomimicking the dental structure, have broadened the indication of this system. Clinical protocol as well discussion of the use possibilities of IPS e.Max system in smile rehabilitation are discussed in this study.

Association of bruxism and alimentary disturbances: case report.

Machado, N.A.G.; Branco, C.A.; Fonseca, R.B.; Barbosa, G.A.S.; Soares, C.J.; Neto, A.J.F.

Bruxism is a pathological activity of the stomatognathic system that includes grinding and clenching teeth during parafunctional movements of the jaws. Clinically, it relates with wear of the dental structure and muscular and articular discomforts, presenting a great number of local etiological, systemic, psychological and hereditary factors, requiring a multidisciplinary treatment. Its consequences range from small damages, evolving gradually to dental (abfraction, wear and tear, trines), periodontal

(recessions, mobility) and more severe muscle-articular alterations. When associated with alimentary habits or digestive disturbances, it may become more destructive to the dental hard tissues. This work presents a bruxism case associated with an acidic diet and episodes of gastric reflow, generating severe wear and cracking of the dental structures. From the diagnosis, a multidisciplinary treatment plan was established, following the current concepts of bruxism. The initial treatment consisted of the correction of the alimentary habits and gastric disturbances, followed by the installation of an interocclusal device in centric relation of occlusion (CRO) for reestablishment of the occlusal stability, vertical dimension of occlusion, anterior guidance and return of the normal muscle activity (90 days of use). After improvement of the initial symptoms was confirmed, the rehabilitating treatment was implemented in CRO by means of accurate procedures using composite resin, recovering the esthetic, functional and occlusal stability, followed by the installation of a new interocclusal device, with the function of maintaining the reached condition.

Association of orthodontics, operative dentistry and occlusal adjustment for functional and esthetic dental treatments

Oliveira, R.G.; Carlo, H.L.; Branco, C.A.; Neto, A.J.F.; Carlos, J.S.; Rodrigo, B.F.

The increasing demand for esthetic dental treatments has led to the use of invasive techniques that remove great amounts of tooth structure. Although indirect restorative procedures enable optimal esthetic results, there is a great removal of sound tooth structure. Therefore, the aim of this study was to present a case report where the use of orthodontic dental movements, closing of diastemas with composite resin and occlusal adjustment enabled the accomplishment of a non-invasive treatment approach with high esthetic results. At the end of the orthodontic movement, specific composite resin shades for each dental region were used in association with a proportional distribution of restorative materials among the teeth, resulting in an optimal esthetic result. The occlusal adjustment allows a correct distribution of occlusal contacts which contributes for the maintenance of orthodontic treatment and preservation of composite resin restorations. It may be concluded that the association of non-invasive dental procedures can generate satisfactory results, avoiding the removal of sound tooth structure.

Evaluation of low intensity laser therapy in the treatment of myofascial pain syndrome

Carrasco, T.G.; Carrasco, L.C.; Mazzetto, M.O.

The aim of this study was to evaluate the effectiveness of the low intensity laser therapy (LILT) in the treatment of myofascial pain syndrome (MPS) in a double-blind study and the establishment of accurate parameters of application. Sixty patients with MPS in the masseter and temporalis muscles had been enclosed in this study. Thirty of them (test groups) were treated with LILT (GaAlAs, 780nm; 50mW, 60mW, 70mW; 20, 40, 60 s) varying the doses of application (25J/cm², 60 J/cm², 105J/cm²), comprising 8 sessions two times a week. The other thirty underwent the same protocol but received placebo laser treatment (controls). The evaluation parameter was the visual analog scale (VAS) and the evaluations were assessed just before the treatment (Ev1), immediately after the fourth application (Ev2), immediately after the eighth application (Ev3), after fifteen days of the last application (Ev4), after 30 days of the last application (Ev5). The results showed statistically significant reduction of pain in the laser groups compared to the placebo groups (ANOVA p<0.05), demonstrating the superiority of the laser therapy in relieving chronic pain in the MPS trigger points for the studied muscles. There was no statistically significant difference between the averages obtained immediately after the therapy and after 1 month (p>0.05). Better results were found with 25J/cm² for the temporal muscle and 60J/cm² for the masseter muscle. LILT was proven to be an appropriate therapy for MPS and should be considered as an alternative to other treatments.

CEREC 3 - The new generation of computed ceramic systems

Padovani, G.C.; Queiroz, R.S.; Calixto, L.R.; Boaventura, J.C.; Porto-Neto, S.T.; Candido, M.S.M.

The dental ceramics are in constant evolution and have presented significant improvements in its mechanical and esthetic characteristics. The Cerec is a sophisticated system that uses CAD/CAM (Computer Assisted Design/Computer Assisted Machine) technology to prepare ceramic blocks. After tooth preparation, CAD reading is made with a scanner, either in the patient's mouth or on a model poured on special gypsum for the system. The image of the future prosthesis is processed using specific software (CEREC 3D-CAD) and the ceramic block (CAM) is prepared. The objective of this work was to detail the clinical-laboratorial preparation of an overlay indirect restoration fabricated with Procad ceramics using CEREC 3 system. A patient sought treatment due to the fracture of tooth 26. During anamnesis, the patient reported that the fracture had occurred 2 months before. The tooth presented sensitivity to mastication and to cold stimulus. In intraoral clinical

examination revealed normal periodontal tissue and absence of tooth losses. Tooth 26 was fractured with presence of carious tissue. The radiographic examination did not show any periapical and/or periodontal alteration. Due to the position of the tooth and its great structure loss, it was planned, as a manner of reinforcing the dental remainder, the fabrication of an indirect all-ceramic restoration using CEREC 3D system, which was performed after protecting the dentin-pulp complex with glass ionomer cement (Vitrebond). It was observed that the prosthesis presented a good marginal adaptation, though limited esthetic outcome because, during the laboratorial fabrication protocol, it was developed from a monochromatic ceramic block.

The indication of cosmetic tooth remodeling for cases of minor severity of anterior open bite

Nomoto, D.M.; Furuse, A.Y.; Mondelli, J.

Tooth remodeling can be used as an alternative treatment for cases of minor severity of anterior open bite. The orthognathic surgery and/or the orthodontic treatment would be the ideal treatment for the correction of this skeletal problem. However, the bite closure by occlusal adjustment and cosmetic contouring is less traumatic, less expensive and a faster treatment. By this technique it is possible to rehabilitate the function and to improve the dentofacial harmony. Moreover, the facial-third proportion and labial-seal with the perioral muscles in normal function can also be achieved. This work has the purpose of demonstrating a case of anterior open bite closure by selective occlusal adjustment. This technique promoted better occlusal function and improved the protrusive movement and partially the lateral movement of the patient. Additionally a better esthetic was achieved.

Smile esthetic rehabilitation: closure of multiple diastemas and cosmetic contouring

Aguilera, J.F.O.; Medina-Valdivia, J.R.; Furuse, A.Y.; Francischone, C.E.; Mondelli, J.; Mondelli, R.F.L.

Nowadays, esthetics plays an important role in daily life. Alterations, such as agenesis, may cause multiple diastemas and compromise the smile harmony. In these situations orthodontic treatment alone cannot solve the esthetic and functional problem. To improve the final result the golden proportion can be used as a guide in the smile rehabilitation. The good adhesion properties of composite resins offer to both professional and patient a conservative and esthetic outcome with good longevity. The purpose of this work was to present a case report of a 17-year old female patient who was referred to the Department of Operative Dentistry (Bauru School of Dentistry) to close multiple anterior diastemas after a 4-year orthodontic treatment. The diastemas were caused by multiple agenesis of maxillary right lateral incisor and four first premolars. Furthermore, the maxillary left lateral incisor was peg-shaped. The esthetic treatment of the anterior maxillary right area consisted of canine and second premolar cosmetic contouring. After tooth contouring, composite resin restorations were placed to close the diastemas. A golden proportion grid was used to guide the restorations. The treatment was conducted after tooth bleaching and occlusal adjustment.

Restoration of posterior pulpless teeth - adhesive endodontic crown

Kabbach, W.; Clavijo, V.; Andrade, M.F.

Tooth bleaching in widely destroyed crowns constitutes a challenge to the dentist, and it requires the development of techniques and materials capable of providing and/or keeping the resistance of tooth structure and the retention of the restorative material to the cavity. A technique proposal is the system of Adhesive Endodontic Crown, also called Endocrown, which consists of a ceramic restoration that comprehends the full dental and an apically integrated retention into the pulp chamber, without the placement of a post. This case presents a therapeutic option to restore devitalized posterior teeth with extensively destroyed coronal remainder using the Endocrown system. The techniques of preparation, impression and surface strengthening are described by the presentation of this case to illustrate the possible use of this system

Use of ozone in carious lesion treatment

Rodrigues, P.C.F.; Lopes, L.G.; Freitas, G.C.; Moreira, F.C.L.; Portilho, C.D.M.; Campos, B.B.; Souza, J.B.

The use of ozone in dentistry is presented as a new alternative in the treatment of carious lesions, as its clinical effectiveness has been proven by many studies related to the inhibition of virus, bacteria and fungi. Ozone (O₃), an allotropic variety of oxygen, is constituted by triatomic molecules of this element. It needs to be prepared at the moment of use due its instability, or rather, it comes back to be oxygen in short

time space when used in parenteral ways or directly in gaseous form. Mixed with water or oil, it can be used topically and by prolonged time. Because of its acknowledged property of inhibiting and/or destructing many oral cavity bacteria, such as *Streptococcus mutans*, *Streptococcus sanguis* and *Actinomyces odontolyticus*, its use in the treatment of carious lesions is based on its antimicrobial activity. The reduction of the biofilm acidity makes possible the diffusion of calcium and phosphate ions to the carious lesions and allows remineralization of the affected dentin and enamel. Currently, ozonotherapy is considered a promising therapy by its low investment and maintenance cost, ease of application and satisfactory clinical results. In view of the aforementioned issues, the aim of this study was to present the ozone uses in the treatment of carious lesions, demonstrating its action mechanism, indication, limitations, advantages, disadvantages and perspectives. This review of literature was carried out by electronic searches using the PubMed, SciELO and Bireme databases. Full-text articles were retrieved from CAPES online journals database.

Previous broken tooth restoration using glass fiber posts settled in dentin

Paganelli, G.G.; Furuse, A.Y.; Benetti, A.R.; Cunha, L.F.; Mondelli, J.

In Dentistry, glass fiber posts become used in diverse situations, such as splinting of teeth and reinforcement of metal-free fixed partial dentures, also serving as an alternative to the use of intracanal metallic cast retainers. In general, these glass fiber posts were introduced to the market as an alternative for reinforcement and improvement of the mechanical properties of structures based on resins. The good results obtained with glass fiber intracanal posts raised the possibility of using these retainers in dentin. This case report presents the prototype of a new glass fiber post to be fixed in dentin. The objective of this new type of post is to anchor extensive direct composite resin restorations, without compromising the esthetic or causing stress in the dentin. The idealization and elaboration of these posts were based on the same principles used in the development of metallic posts inserted in dentin. The posts are pre-counteracted in a way that 2 mm is cemented into the dentin and 2 mm is enclosed in the mass of the restoration. The orifices in dentin are prepared with spiral drills used for screwing the metallic posts into the dentin. The glass fiber posts can be fixed into the orifices by means of adhesive techniques. This post system is an alternative to the conventional metallic pins and its viability has been already been evaluated by clinical and laboratorial studies.

The importance of restorative test when using anterior composite resins

Castro, F.C.; Kabbach, W.; Calixto, L.R.; Clavijo, V.G.R.; Andrade, M.F.

Inadequate anterior restorations compromise the appearance. Any alteration in color and form, even if minor, is not well accepted by patients, who have esthetic demands and seek for replacement of these restorations. In this aspect, it is challenging to reach esthetic success, especially when opting for conservative treatments that try to preserve maximum dental structure. For this reason, special care must be given to the restorative tests to obtain satisfactory results with maximum predictability. This case report deals with the restorative tests used in the replacement of old filling by composite resin restorations on teeth 11 and 21.

Evaluation of the published terms in articles of four dental journals with reference to the Describers in Healthy Sciences (DeCS)

Portilho, C.D.M.; Moreira, F.C.L.; Rodrigues, P.C.F.; Lopes, L.G.; Souza, J.B.; Martorell, L.B.; Freitas, G.C.

The search and retrieval of references in dental literature indexed in SciELO (Scientific Electronic Library Online) database are standardized by the Describers in Healthy Sciences (DeCS). The DeCS has been developed with the aim of allowing the common terminology use for research in three languages providing a consistent and unique way for recovery of information. If describers are be inadequately used, the article will not be retrieved and consequently will not be cited in others studies. In this context, this research evaluated if the terms used in articles published in four dental journals indexed in database SciELO - Dental Press of Orthodontic and Orthopedic (A), Brazilian Dental Journal (B), Journal of Applied Oral Science (c) and Brazilian Oral Research (D) - between 2005 and 2006, were in accordance with the DeCS describers. The results showed that regarding the year 2005 and the number of articles published in the journals in this year, the percentages of terms cited in Portuguese in accordance with the DeCS were respectively 36.7%, 55.5% and 91% for A, C and D journals. And the English terms agreed in 28%, 57.8% and 88% for B, C and D journals, respectively. In 2006, a positive correlation between the percent increase in article publication and the published terms was observed in all journals. It may be concluded that authors, publishers and copyholders must be more rigorous on the analysis and choice of the describers cited in articles.

Influence of feldspathic ceramic shade and cement photoactivation period on microhardness of dual resin cement.

Máximo, R.O.; Santana, F.R.; Silva, N.; Carlo, H.L.; Fonseca, R.B.; Soares, C.J.

The feldspathic ceramic shade and photoactivation period of the cement, when associated, can alter the hardness of the resin cement. The aim of this study was to evaluate the influence of the photoactivation period and feldspathic ceramic shade on the microhardness of dual resin cement. One hundred bovine incisors were selected for this study. Their roots were cut off and their crowns were embedded in polystyrene resin. Next, they were randomly divided into 20 groups ($n = 5$). Standardized cavities (4.0 mm in diameter and 1.0 mm in depth) were prepared on the buccal surfaces. Ceramic restorations (Noritake Ex 3) (4mm in diameter and 4mm thickness) were fabricated in shades A1, A2, A3, A3.5 and A4. A dual resin cement (Rely X-ARC) was inserted into each prepared cavity and a mylar strip was positioned over it. The ceramic pastille was coupled to a perforated metal device and positioned between the cement and the light source, and was light cured for 40, 80, 120 and 160s. Vickers hardness test was performed on the cement layer, with a 50g load application for 30s, making 5 indentations *per* specimen. Two-way ANOVA (4x5) and Tukey's test ($\alpha = 0.05$) showed difference for the factors photoactivation period and shade. The results (in MPa) were: A1t40 (18.1±1.4)a; A1t80 (20.8±1.9)a; A1t120 (21.0±1.1)a; A1t160 (22.4±2.3)a; A2t40 (13.8±1.3)b; A2t80 (19.4±1.0)a; A2t120 (20.1±1.4)a; A2t160 (21.4±1.7)a; A3t40 (11.9±2.2)b; A3t80 (18.3±0.8)a; A3t120 (19.4±1.7)a; A3t160 (20.3±4.0)a; A3.5t40 (9.1±2.2)c; A3.5t80 (18.9±1.9)a; A3.5t120 (18.7±2.1)a; A3.5t160 (19.8±3.0)a; A4t40 (6.5±1.3)d; A4t80 (15.7±2.4)b; A4t120 (17.4±1.1)ab; A4t160 (19.7±2.8)a. The increase in feldspathic ceramic shade saturation decreased the hardness when polymerized for 40s. The increase in polymerization time to 120 and 160s decreased the influence of ceramic shade saturation on cement hardness.

Oral Diagnosis

Study about oral health of elderly people resident in the "São Francisco de Assis Home"

Oliveira, A.C.M.; Montandon, A.F.B.; Oliveira, M.P.; Massucato, E.M.S.

The increase of the Brazilian elderly population has placed in evidence physiological processes of this age range, adding resources to minimize or to delay undesirable alterations. The aim of this study was to evaluate the oral conditions of 76 aged residents of the "São Francisco de Assis Home" of the city of Araraquara. The patients were examined at the asylum facility and data from clinical interview and oral examination were collected. Most patients were female (61.8%) and the mean age was 76 years. Regarding systemic alterations, 92.4% of the aged presented some kind of health problem, being mostly cardiovascular alterations (43.3%) and psychiatric/neurological disorders (28.9%). With respect to medications, the most used were antihypertensive and psychiatric drugs (28.1% and 24.0%, respectively). Regarding oral hygiene, 34.7% reported to clean the mouth three times a day, but most patients presented bad oral hygiene and removable dentures in poor cleaning conditions. Also, injuries and/or alterations in the oral mucosa were evaluated, the most prevalent being: actinic cheilitis (13.4%), non-papillated tongue (10.4%), furred tongue (10.4%) and candidiasis (6.6%). This study evaluated the oral conditions of elderly individuals aiming at instituting a guidance program directed to this population in order to improve life quality of this age group.

Clinical evaluation of the treatment of denture-related stomatitis by *Candida albicans* using therapeutic protocols with systemic and topical antifungal agents associated or not with hygiene orientation

Vieira, A.S.; Moraes, S.N.; Maia, R.M.L.C.; Magalhães, V.T.B.; Barros, L.A.P.

Denture stomatitis can be manifested on the oral mucosa as lesions that are associated with the use of complete dentures. This study evaluated, comparatively, the effectiveness of four therapeutic protocols for denture-related stomatitis in complete denture wearers treated at the Dental Course of UFES. The patients were submitted to clinical exam to verify the presence of denture-related stomatitis and mycological exam of the palatal mucosa for isolation and identification of *Candida* spp. The patients were randomly assigned to four groups, according to the therapeutic protocol: Group I - administration of a systemic antifungal agent (fluconazole); Group II - administration of a topical antifungal agent (nistatin); Group III - administration of a systemic antifungal (fluconazole) associated with oral hygiene protocol; and Group IV - instructions of complete denture cleansing. In conclusion, the most efficient treatment approach to the denture-related stomatitis was the association of systemic antifungal therapy (fluconazole) with instruction on oral hygiene.

Temporomandibular dysfunction and ear symptomatology: a clinical report.

Melchior, O.M.; Carrasco, T.G.; Mazzetto, M.O.; Carrasco, L.C.; Hotta, T.H.

The fact that different pathologies may have the same signs and symptoms reinforces the importance of making a correct diagnosis and treatment plan. It also shows that the differential diagnosis is a very important parameter to distinguish TMD and otological problems. In the case reported hereby, audiological exams and occlusal splint treatment were undertaken. After occlusal splint treatment, the only remaining complaint was essentially tinnitus, which was associated with frequent and enduring exposure to intense noise in the workplace. Therefore, identification of each pathology, occurring simultaneous or not, guides patient referral to the appropriate healthcare professional and, consequently, adequate treatment.

Transmigration of mandibular premolar: a case report

Alves, D.B.M.; Pedrosa, E.F.N.C.; Carvalho, I.M.M.; Freitas, D.Q.; Rodrigues, A.C.; Andreo, J.C.

Transmigration is the name given to an ectopia in which teeth are found in areas distant from the alveolar processes. The initial angulation of the mandibular second premolar germ and the early loss of the permanent first molars can influence the distal migration of the mandibular second premolar. Some studies have reported that ectopic teeth can be found in a variety of places of the oral cavity and also in other areas of the human body. There are reports of teeth in the maxillary sinus, mandibular condyle, coronoid process, mandibular angle, orbit, palate, mentum and also the skin. Previous studies showed that in children with cleft lip and palate, the occurrence of dental anomalies is higher than in normal children. The objective of this study is to report a case of migration of tooth 35 in a patient under treatment at the Hospital for Rehabilitation in Craniofacial Anomalies (HRAC-USP), and also to investigate whether the migration process is similar to that occurring in individuals without cleft lip and palate. The migration of tooth 35 was confirmed by 8 panoramic radiographs and one periapical radiograph that were taken during the patient's treatment between 1978 and 2002, and available at the fling service of the Department of Dental Radiology of HRCA (HRAC-USP). It may be concluded that the distal migration of the left mandibular second premolar (tooth 35) when associated with the presence of cleft lip and palate is a quite rare condition because, as far as it could be ascertained, there are no similar cases previously reported in the literature, but it occurred in a similar way in individuals without cleft lip and palate.

An atypical lesion caused by onychophagia

Regis, R.R.; Soriani, N.; Paranhos, H.F.O.; Lovato, C.H.; Souza, R.F.

Onychophagia is defined as the habit of biting the nails. It is a nervous, repetitive, embarrassing, socially undesirable habit that can be found in 6-60% of the world population. The aim of this study is to describe an atypical lesion associated with onychophagia and to present a brief literature review on this habit. An adult male patient undergoing routine dental care reported the development of an unguinal lesion on the left thumb. The nail presented an uneven surface, with reduced thickness, a depression over the lunula and a visible petechia underneath the lesion. As the patient reported exacerbation of his parafunctional habits, it was clear the existence of an association between these habits and the lesion. A counseling approach was planned in order to instruct the patient to avoid biting the nails and removing the surrounding epithelium. After two months, the lesion had disappeared secondary to nail growth. It could be observed how important the dentist could be on detection of onychophagia and referral to the patients to the most appropriate treatment.

Cone bean technology

Moron, B.M.; Azevedo, B.C.; Azevedo, J.R.; Capelozza, A.L.A.

Conventional x-ray imaging is essential to settle a diagnosis of maxillary diseases. The limitations in the interpretation of the images are mainly due to the formation of a two-dimensional image of three-dimensional structures. Recently introduced to the market, the Cone Bean technology allows 3D facial image acquisition and reconstruction. This technological advance contributes significantly to the study of patients who need facial reconstructions or dental implants, and to the more accurate identification of the diseases that affect the bone and dental structures. The attainment of 3D images still allows the construction of archetypes that not only assist in the surgical planning, but also reduces the surgical time considerably. Image production, indications, advantages and cost of this new technology are addressed in this work.

Keratoacanthoma and squamous cell carcinoma: differential diagnosis

Boos, F.B.D.J.; Iwaki, L.C.V.; Souza, L.R.K.; Ghizzi, V.C.; Misawa, M.Y.O.; Farah, G.J.

The keratoacanthoma denomination was firstly used by Rook, Winster (1950), describing the clinical and histological course of the lesion. Historically, this entity has been included as synonymous of self-healing squamous cell carcinoma, sebaceous molluscum and pseudocarcinomatous molluscum. It is defined as a benign epithelial neoplasm, originated from the superior portion of the sebaceous gland of the hair follicle. Clinically, it presents as an exophytic nodule, central keratin-filled crater, normally not exceeding 1.5 cm in diameter, firm, covered by rapid-growth normal epithelium. In the lower lip, a differential diagnosis should be undertaken with squamous cell carcinoma because this is an area of high prevalence of this pathology and the keratoacanthoma resembles very much clinically and histopathologically the squamous cell carcinoma. Treatment of keratoacanthoma requires excisional or deep incisional biopsy, with the inclusion of the clinically normal adjacent epithelium in order to obtain an accurate histopathologic interpretation. As a treatment approach, surgical excision presents better esthetic results compared to a possible spontaneous remission. The aim of this work is to report the case of a patient who presented with a well-circumscribed solitaire nodule, located in the lower lip, where an incisional biopsy was carried out. After the histopathologic diagnosis, complete removal of the lesion was performed. The etiology, clinical and histological characteristics, the differential diagnosis from the squamous cell carcinoma, and the possible treatment options are discussed.

Identifying and correcting errors in periapical x-rays

Bersanete, G.R.; Lautenschlager, G.A.C.; Capelozza, A.L.A.

The correct radiographic interpretation of the structures that surround the teeth and bone in the jawbone and jaw and of the pathologies that occur in this region, allows the dentist to make a more accurate diagnostic elaboration. Radiographic errors of prescription, technique and processing make this interpretation difficult or even impracticable. Currently, the use of film holders for periapical and interproximal radiographic techniques minimizes errors of image elongation and shortening. However, errors in the exposure and processing of periapical films are still frequent. The objective of this work was to use exposed radiographic films with errors to assist undergraduate students and dentists in the identification and correction of errors of periapical radiographic technique and processing. These errors, when not solved, impair image interpretation and diagnosis of the disease, resulting in unnecessary exposure of the patient to radiation. All procedures to be discussed are in accordance with the guidelines established in the Regulation #453 of the Ministry of Health, issued in June 1998.

Adenoid cystic carcinoma of the palate: a case report.

Freitas, P.; Consolaro, A.; Gurgel, C.N.C.; Lara, V.S.

A 63-year-old white female presented to the clinic with the chief complaint of a "non-healing wound on the palate" with 1-year history and periods of pain and bleeding. On intraoral examination, an ulcer with elevated borders was observed on the palate, presenting approximately 2.5 cm in diameter. An incisional biopsy was performed and the lesion was sent to histopathological examination at the Oral Pathology Laboratory. The microscopic analysis revealed nests and cords of basaloid hyperchromatic epithelial and myoepithelial cells, either forming a solid pattern, a cribriform pattern with microcystic spaces or tubular pattern with ductiform structures. Mild perineural invasion was observed and the cystic and ductiform spaces were filled with mucoid material. Based on the microscopic features, the diagnosis of adenoid cystic carcinoma was settled, and the patient was referred to an oncologist. Adenoid cystic carcinoma is one of the most common malignant salivary gland tumors and, when it affects the minor salivary glands, the palate is the most frequent location. Clinically, it presents as a painful, slow-growth mass, exhibiting a flat or ulcerated surface. Microscopically, it is characterized by ductal and myoepithelial cells arranged in three defined patterns: cribriform, tubular and solid, and these patterns can be associated. Perineural invasion is a characteristic microscopic feature of this lesion. The treatment of choice is radical surgery combined with radiotherapy. It has a trend for local recurrences and distant metastases and the prognosis depends on many factors, such as, the histological type, clinical stage, bone invasion, location and tumor size. The case of adenoid cystic carcinoma reported hereby highlights the importance of the diagnosis of palatal lesions, which may be malignant salivary gland tumor and mimic lesions associated with trauma or infections.

Infected fibro-osseous lesion: case report

Moino, A.L.U.; Araújo, M.L.; Rodrigues, M.T.V.; Sant'Ana, E.; Consolaro, A.; Damante, J.H.

A 31-year-old white female reported pain and infection on the maxilla for 2 months. On oral examination, a swelling on the left maxilla, absence of maxillary left canine and retention of deciduous left canine were verified detected. The time evolution was 6 months. A vestibular fistula and suppuration were observed. Panoramic, periapical and occlusal radiographs disclosed a great radiolucent area intermingled with irregular radiopacities extending from the left lateral incisor to the left second premolar and a slight migration of the root of the maxillary left lateral incisor. The left canine was displaced superiorly at a horizontal position, transversely in a buccopalatal direction and involved into the mass. Computed tomography (CT) highlighted the relations of the lesion with the nasal and oral cavities. The continuity with the adjacent bone with no precise limits was well demonstrated by the CT scan. The patient was submitted to surgical removal under general anesthesia and the microscopic examination of the piece revealed osseous areas with cemento-like formations associated with intense cell proliferation, and highly sclerosed cementoossifying material. There was also normal bone, inflammation and biofilms, which led to the diagnosis of an infected fibro-osseous lesion. After 1 year of follow up, the patient is in general good conditions.

Dentigerous cyst associated with the development of complex odontoma: case report

Ghizzi, V.C.; Ferreira, G.M.; Filho, L.I.; Iwaki, L.C.V.

The odontoma is an odontogenic tumor in which there is a complete differentiation of the cells, reaching enamel, dentin and a variable amount of cementum and pulp. The odontoma is involved by a fibrous capsule that may occasionally develop a dentigerous cyst, which seems to originate from the enamel, being generally an asymptomatic and slow-growth lesion. Hirshberg et al. (1994) reported the association of odontoma and odontogenic cyst in 24% of the studied cases, which demonstrate that this is an unusual lesion that should have an accurate diagnosis. A 28-year-old Caucasian female patient was treated under complaint of pain in the "roof of the mouth" upon drinking of cold beverages. The extraoral physical exam revealed an asymptomatic swelling at the region of the canine fossa. The intraoral examination revealed that the swollen area was hardened on the buccal surface of tooth 13 and that there was a dome-shaped volumetric increase on the palatal side. A panoramic radiograph suggested a cystic lesion in the right maxilla with root resorption on the teeth 11 and 12. Inside the wound there were two circular radiopaque images. Fine-needle aspiration biopsy presented a yellow-citrine liquid characteristic of a cystic lesion. Initially, teeth 11 and 12 were endodontically treated, followed by surgical enucleation of the lesion, which made evident the intimate relation of the radiopaque masses with the lesion wall, obtaining two hard tissue fragments and one of soft tissue sample. The microscopic examination confirmed the diagnostic hypothesis of dentigerous cyst associated with the odontoma. The clinical and radiographic controls at 3, 6 and 12 months postoperatively suggest effective progressive mucous and bone healing of the surgical wound. Patient goes on with no complaints and with remission of signs and symptoms.

Prevalence of actinic cheilitis in an oral health campaign in the city of Campinas, SP

Zanetti, R.; Flório, F.M.; Moraes, P.C.; Lima, Y.B.A.; França, F.M.G.; Araújo, V.C.

The chronic or excessive exposure to solar radiation can result in a pre-malignant tissue alteration characterized by a diffuse lesion on the vermilion of the lower lip known as actinic cheilitis (AC). The aim of this study was to evaluate the prevalence of actinic cheilitis during an oral health campaign in the city of Campinas, SP, in the first semester of 2005. 420 individuals were examined (215 females and 205 males) with mean age of 47.1 years (± 15.4). After filling out a specific questionnaire arguing about their socioeconomic and demographic data, type of access to dental services and self perception in oral health, the volunteers underwent clinical and epidemiological examinations by previously trained and calibrated examiners, the activity being completed with educative lectures regarding oral self examination and care with respect to solar exposures. The prevalence of AC was 18.1% (n=76), with predominance in the male population (69.7%) among individuals that classified themselves as Caucasian (73.7%) and individuals aged 45-60 years (40.8%). Among the patients with AC, 46.1% reported to be exposed to the sun during the work, 4 days/week (4.9 \pm 3.9 hours/day), 36.8% were exposed during leisure (1.6 day/week; 1.3 \pm 2.0 hours/day) and 28.6% during sport activities (1 day/week; 0.6 \pm 1.4 hour/day). In conclusion, preventive strategies in adult patients must also be directed towards tissue alterations deriving from excessive exposure to the sun, in order to prevent the onset and/or progression of lesions with potential of malignant transformation.

Scintillography as an auxiliary diagnostic method in dentistry

Touron, B.; Gonçalves, P.Z.; Buller, I.F.R.; Capelozza, A.L.A.

This study aimed to address the main indications of scintillography as an image diagnostic method in dentistry, its advantages and disadvantages. This examination receives this name due to the use radioactive composites (isotopes) connected to different pharmacologic substances, such as, polyphosphates, pyrophosphates or diphosphates, labeled by 99m-technecio. Using low amount of emitted radiation, this method evaluate the absorption, distribution and concentration of these isotopes, which participate in the metabolism of the specific tissues and organs. After the impact of radioactive iodine in the treatment of some thyroid gland diseases in the 50's, the scintillography became indispensable for the settlement of diagnoses for the thyroid gland. Because it is a high-sensitivity exam for detection of some early stage diseases at a lower cost, which allows a rapid and single-session evaluation of the whole skeleton, bone scintillography has attracted the attention of professionals of different health fields. The greater the blood concentration in the region, the greater the drug concentration. However, it must be considered that the scintillographic exam is nonspecific, and any changes on bone formation may result in abnormal radiotope placements. In dentistry, the scintillography exam may be used on cases of suspected metastasis, early diagnosis of oral and maxillofacial complex diseases, fractures, arthritis, osteomyelitis, Paget disease, fibrotic dysplasias, hemangiomas, pseudo-arthroses, osteoradionecrosis and traumatic bone cyst. The image is obtained because the administered radio-medicines concentrate in the bone and hydroxyapatite matrix, labeling the osteoclastic and osteoblastic activity of the desired region, thus demonstrating the new bone formation. The scintillography can also be useful in the diagnosis of condylar hyperplasia and the determination of salivary gland size, localization and function.

Periapical inflammatory cyst associated with a primary tooth: case report.

Mori, A.A.; Strosi, J.P.; Marques, L.M.; Farah, G.J.; Iwaki, L.C.V.; Filho, L.I.

Periapical inflammatory cyst is also known as apical periodontal cyst, radicular cyst or apical cyst. It is an odontogenic cyst whose development is directly related to inflammatory processes that can stimulate the proliferation of epithelial cells that will in turn trigger the formation of these pathologies. These epithelial sources usually originate from the epithelial rests of Malassez, but they may also be related to the crevicular epithelium, sinusal lining or epithelial lining of fistulous routes. Clinically, this cyst is usually asymptomatic. However, occasionally, swelling and mobility or displacement of the adjacent teeth may be observed. Radiographically, it presents as a well-defined radiolucent area with linear contour, circumscribed by a continuous radiopaque border, suggestive of bone reaction in the periapical region of the involved tooth. The treatment of choice is usually surgical enucleation. Nevertheless, in cases of large cysts (>2 cm), marsupialization or decompression can be necessary. The objective of this work is to report the case of an 11-year-old female child presented with facial asymmetry in the inferior third of the face. On intraoral examination, tooth 75 presented an extensive restoration, mobility and expanded bone cortical. The radiographic examination revealed endodontic treatment and a radiolucent area circumscribed by a radiopaque halo. Surgical enucleation was performed after fine-needle aspiration. The anatomopathological diagnosis indicated a periapical inflammatory cyst. The authors discuss and question the etiology of this lesion, the differential diagnosis with odontogenic keratocyst and the unicystic ameloblastoma, and especially the definitive diagnosis of periapical cyst associated with a primary tooth, which is a rare occurrence.

White lesions of oral mucosa: case report and differential diagnosis

Mandaliti, A.C.; Sampieri, M.B.; Rodrigues, M.T.V.; Damante, J.H.; Junior, O.F.

The white lesions of oral mucosa are a complex group of lesions characterized by presence of stains or white plates whose differential diagnosis depends on a detailed clinical examination (anamnesis and physical examination) and, in the majority of times, a biopsy is necessary. This case refers to a 45-year-old Caucasian patient who was referred to the Oral Diagnosis Clinic of FOB/USP for evaluation of white plaques on his oral mucosa. The plaques were present on both sides of the retromolar and jugal areas and were asymptomatic. The patient was smoker and used a mandibular removable partial denture. The final diagnosis was frictional keratosis and lichenous lesion and the patient has been periodically followed up.

Gorlin-Goltz syndrome: diagnosis and 4-year follow up in a 6-year-old child

Silva, M.A.M.; Munhoz, E.A.; Sant'Ana, E.; Consolaro, A.; Júnior, O.F.

A 6-year-old female patient was referred to our service due to a tumefaction in the left mandible that was hard to palpation. Radiographically, two radiolucent areas, divided by a bone septum and measuring approximately 3 cm each were observed, displacing

the germs of the permanent teeth. Incisional biopsies in the two lesions were performed and a diagnosis of odontogenic keratocyst was reached. Due to the appearance of the odontogenic keratocyst at an early age and to the existence of clinical features, such as presence of numerous nerves, frontal boss, hypertelorism and mandible prognathism, there was suspicion of Gorlin-Goltz Syndrome. This syndrome, also known as nevoid basal cell carcinoma, is characterized by multiple odontogenic keratocysts, nevoid basal cell carcinomas, hypertelorism, plantar/palmar and skeletal alterations, such as bifid rib, scoliosis, vertebral fusion, frontal boss and temporoparietal and mandibular prognathism. The patient was referred to the pediatrician and, after evaluation, vertebral anomalies were found in T3 and T4. After 4 years of observation, the patient developed 3 other odontogenic keratocysts that appeared in the posterior region of the right maxilla involving the germ of tooth 17, in the periapical region of the mandibular incisors and in the posterior region of the left maxilla involving the germs of teeth 27 and 28. This work presents the characteristics of Gorlin-Goltz syndrome as well as its evolution and treatments carried out throughout the 4 years of surveillance.

Osteonecrosis of the jaws related to bisphosphonate therapy

Romanowski, M.; Strujak, G.; Gomes, K.; Drechmer, M.; Carlini J.L.

Bisphosphonates are drugs broadly used in the treatment of patients with osteoporosis, Paget's disease and metastatic bone disease, especially from breast cancer, prostate cancer and multiple myeloma. After its chronic use, it has been observed osteonecrosis in the jaws, together with bacterial infection and bone exposure. Treatment according to literature includes expectation, use of antibiotics and debridement of the infected area. However, none of these treatments have shown suitable results. A consensus among experts states that prevention, preceded of proper interview and primary identification of clinical or radiographic alterations are the best procedures for a better prognosis. A 71-year-old man who was diagnosed with prostate cancer 2 years before and metastatic disease 2 months after total prostatectomy received Zometa/4mg (Zoledronic acid) for 16 months. He presented with pain, chewing difficulty and bad taste when swallowing. In addition, he presented with regions of exposed necrotic bone in the mandible measuring 2cm in the left side and 3 cm in the right side. Treatment included antibiotic therapy for acute infection management, chlorhexidine mouthwashes, curettage and removal of exposed bone areas that were in contact with oral cavity. A jelly haemostatic sponge was used for isolating the lesion from the oral cavity, with the intention of improving chewing and healing of the external mucosa. The patient referred improvement of the pain, chewing and taste after 3 months. He is still under treatment without cure prevision. Antibiotics are still given for prevention of acute infections and new bone exposure areas are being extracted.

Pemphigoid: diagnosis and treatment

Oliveira, R.B.S.; Araújo, M.R.; Albuquerque, D.F.; Consolaro, A.; Damante, J.H.

Pemphigoid is an autoimmune disease characterized by the development of vesicle-bullous lesions on the skin and mucosal surface. Patients develop antibodies directed against one or more components of the basal membrane, resulting in the formation of subepithelial blisters. The term pemphigoid is used because of its clinical similarity to pemphigus, although the microscopic characteristics and prognosis are different. Initially, it involves the mucosal surface, while skin involvement is rare. In some areas, the ulcerated lesions may result in scar formation. Oral mucosa is affected in many cases and the gingiva is the main site of occurrence, followed by the eyes. The development is slow and the lesions appear several months before the diagnosis is established by biopsy and immunofluorescence. This study intends to review concepts and present two cases that are currently being followed up, aiming the diagnosis of the lesion.

Maxillary central giant cell lesion: Intralesional corticosteroids and bone plastic surgery treatment

Nápoles, B.B.; Capelozza, A.L.A.; Sant'Ana, E.; Damante, J.H.; Araújo, M.R.; Zanda, M.J.

Central giant cell lesion is also called as giant cell tumor or giant cell granuloma, but it is not a tumoral lesion. In spite of its neoplasia-like locally aggressive pattern, it is considered as a nonneoplastic lesion. Its etiology is related to an exacerbated response to trauma. The histopathological features are multinucleated giant cells. Because of its locally aggressive behavior, the most commonly referred treatment is surgery, usually including curettage. However, this procedure causes great morbidity to the patient. Another treatment option is an intralesional injection of corticosteroids followed by a bone plastic surgery. A 12 year-old white female presented with an exophytic expansible lesion on the anterior maxilla that caused divergence of the long axis of the central incisors, had 2-month evolution and was secondary to trauma. Oral, radiographic and histological examination revealed a central giant cell lesion. A laboratory investigation of parathyroid hormone excluded the possibility of a

brown tumor of hyperparathyroidism. The treatment protocol was intralesional injection of triamcinolone acetonide (20 mg diluted in anesthetic at 1:1 ratio), using 1 mL of the solution for each 1 cm³ of the lesion, and totalizing 6 weekly applications. Clinical-radiographic follow up was performed. After 3 months, the regression of the lesion was observed and a bone plastic surgery was performed to reestablish the esthetics of the affected area. This treatment protocol was deemed as satisfactory because it permitted lesion remission, causing less morbidity, avoiding the extraction of the involved and great resection of the maxilla.

Peripheral ameloblastoma with two recurrences

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A 79-year-old, white male denture wearer went to the Oral Diagnosis Clinic of FOPUC-MG with a well-circumscribed nodule on the right mandible measuring 1.5 x 2 cm of diameter, with smooth surface, normal color and painful symptomatology during mastication. The clinical diagnosis was fibrotic hyperplasia with indication of a conservative excisional biopsy. The microscopic diagnosis was peripheral ameloblastoma. The patient returned 15 days later presenting a local volume increase, suggestive of denture trauma. Nine months later, a lesion with the same characteristics as that observed at the first clinical visit was detected. Periapical, panoramic and occlusal radiographs were taken. The periapical image showed little erosion in the superficial bone. A new surgery was scheduled with safety margins of 5 mm and removal of periosteal tissue underneath the lesion. Denture grinding was done to reduce the local trauma. The follow up visits were performed 2 and 16 months after the surgery, with no evidence of clinical or radiographic lesion recurrence.

Dentist-patient relationship against infectious-contagious diseases

Faleiros, P.L.; Aranega, A.M.; Silva, P.I.S.; Marão, H.F.; Fattah, C.M.R.Z.

Dentist-patient relationship against infectious-contagious diseases has been object of several investigations in different countries. Studies published in the late 1980's revealed that most dentists were concerned in treating HIV+ patients. Most recent studies have shown that the willingness in assisting these individuals has increased, indicating a larger understanding of the dental professional regarding infectious-contagious diseases. However, in the Brazilian literature, few studies are based on the report of patients with these pathologies, approaching their experience with respect to the dental care. The major goal of this work was to evaluate, by the application of 200 questionnaires to individuals with infectious-contagious diseases, the behavior of dentists during the dental treatment. As much as 35% of the interviewees did not seek dental care after being diagnosed with the disease. From those who reported their disease to the dentist, 3% were not treated. Among the treated ones, 16% were assisted at public institutions, 18.5% in public institutions specialized in treating patients with infectious-contagious diseases, 30.5% in private clinics; 17% revealed the diagnosis to the dentist. 12% of the respondents believed that there was some special care regarding the use of protective barriers by the dental staff and only 5% judged to have suffered discrimination. From the patients that did seek dental care, 11.5% answered that they would not inform the diagnosis in the event of undergoing a future dental treatment. Based on the collected data, it may be concluded that, according to the patients' perception, the dentist use different protective barriers during the treatment of individuals with known infectious-contagious diseases. Although the reported discrimination rate was low, the fear of prejudice persists, which was demonstrated by the great patient refusal to inform the dentists of their condition of having an infectious-contagious diseases.

Dermoid cyst of the buccal floor: a case report

Gomes, R.S.; Ferreira, G.M.; Farah, G.J.; Silva, M.Z.M.; Pires, L.C.; Vinci, F.C.; Daniel, A.N.

The dermoid cysts are considered uncommon developmental malformations. They are limited by epidermis-like epithelium containing dermal structures attached to the cystic wall. Their most common location in the midline of the buccal floor, but they may also be found laterally to the midline or in other areas, such as the submandibular region. They can be found below or above the geniohyoid muscle. The cysts located above of the geniohyoid muscle usually cause sublingual swelling, thus provoking a displacement of the tongue superiorly, which may impair feeding, phonation and breathing. The cysts located below the geniohyoid muscle may cause submental swelling giving a "double chin" appearance. Clinically, they can vary, in size, from some millimeters to centimeters, presenting as a painless, slow-growth mass with consistency similar to that of "rubber or dough". For diagnosis and settlement of the treatment plan, generally, clinical characteristics and imaging exams, such as computed tomography (TC) and magnetic resonance imaging (MRI) are associated, which are important methods to observe lesion extension. However, in most cases, the definitive diagnosis is obtained by histopathological examination. The objective of this work is report a case of a 41-year-old melanoderma female patient who was admitted to the

Metropolitan Hospital of Sarandi/PR presenting a painless swelling in the sublingual region. The patient was submitted to enucleation of the lesion under general anesthesia and the macroscopic piece was sent to histopathological examination with the hypotheses of dermoid cyst, branchial cyst or plunging ranula. The hypothesis of dermoid cyst was confirmed.

Panoramic radiography: acquisition, interpretation and errors

Imada, T.S.N.; Teixeira, R.C.; Albuquerque, D.F.; Araújo, M.R.; Capelozza, A.L.A.

Radiography is the most common complementary exam used at the dental office. Good quality radiography allows the dentist a better interpretation and greater support on the diagnosis of the jaw's pathologies, improving treatment efficacy. This study aims to discuss the most frequent errors in panoramic radiography, suggesting how to avoid them. There are four basic requirements to obtain good quality radiography: maximum detail, minimum distortion, appropriate density and contrast. Detail is the capacity of reproduction of the exposed object. Unsharpened images occur when there is a movement either from the machine, the film or the patient during the exposure. Detail is associated to the size of the focal area, film sensitivity and processing. Distortion is directly related to the enlargement or reduction of the exposed object and interferes with the interpretation of the image. Density refers to different film darkness. Over-processing, a short film-object distance and overexposure provide darkened images, complicating the interpretation. Radiographs should have a median density. Contrast is characterized by the difference between white and black, going through the shades of gray, considering the medium contrast where it is observed greater scale in shades of gray. Thus, dentists should obtain great detail radiography, low distortion, medium density and contrast in order to establish a correct diagnosis.

Periodontal lateral cyst in an adolescent patient: diagnosis and treatment

Santos, M.R.; Pereira, F.P.; Miyahara, G.I.; Crivelino, M.M.; Demathé, A.

Paradental cyst is a rare non-keratinized developmental odontogenic cyst that occurs adjacent or lateral to a vital tooth root. It is found mainly in adults (5th to 7th decades). In 75% to 80% of the cases, it occurs associated with the lateral incisor, canine and lower premolars. Without painful signs or clinical symptoms, they are usually diagnosed during routine radiographic exams. Radiographically, it appears as a circular or tear-shaped well-circumscribed radiolucent area. Paradental cyst is treated by surgical enucleation and it has not trend to recurrence. A 15-year-old boy was referred to the Oral Diagnosis Clinic of the University of Araçatuba/UNESP due to a periodontal abnormality detected in a radiographic exam for further orthodontic treatment. During intraoral exam, an abnormality was observed in the crown of tooth 45. Radiographically, it was observed a circumscribed radiolucent area between teeth 45 and 46 with 5 mm in the largest diameter. Pulp vitality test of teeth 45 and 46 was positive. Surgical enucleation of the lesion was accomplished. Histological features added to clinical characteristics allowed the definitive diagnosis of paradental cyst. Follow-up is being conducted and the beginning of bone repair was observed in the area 1 month after lesion enucleation. This work presented the diagnosis and treatment of paradental cyst in an adolescent patient.

Neurofibroma in a child: case report

Joaquim, R.C.; Demathé, A.; Pereira, F.P.

Neurofibroma is the most common neoplasm of peripheral nerves derived from an admixture of Schwann cells and perineural fibroblast proliferations. Solitary tumors are more common in young adults and they present as asymptomatic slow-growth soft tissue lesions, which vary greatly in size from tiny nodules to large masses. This work presents a case of a 4-year-old patient referred to the Department of Surgery of the Dental School of Araçatuba/UNESP with esthetic complaints due to facial volumetric increase that hindered breathing. Clinical and imaging investigation showed a volumetric increase in the buccal and nasal area. There were also nodules in the legs. The surgical intervention was accomplished under general anesthesia for resection of the intraoral lesion and incisional biopsy of legs nodules. The pieces were sent for histological examination and the diagnosis was plexiform neurofibroma. Postoperative follow-up was satisfactory, being observed a volumetric decrease. The patient stays under clinical and radiographic evaluation for case surveillance.

Nasolabial cyst: case report

Álvares, B.G.; Demathé, A.; Queiroz, T.P.; Sobhia, A.M.P.; Junior, I.R.G.; Miyahara, G.I.; Pereira, F.P.

Nasolabial cyst is a rare developmental cyst of uncertain pathogenesis. Clinically, it appears as a tumefaction of the upper lip, lateral to the midline, causing elevation of the wing of the nose. They are more commonly observed in adults, with prevalence

in the fourth and fifth life decades. Due to its soft-tissue origin, in most cases, there is not radiographic alteration. This paper documents the presentation and management of a 40-year-old man that came to the Department of Surgery of the Dental School of Araçatuba/UNESP complaining of a volumetric increase in the face, painless, with evolution of approximately 29 years, which hindered breathing. Intraoral examination revealed a swollen area in the deep maxillary fornix. There were no radiographic alterations. Intraoral puncture was accomplished and it was obtained a liquid of brown coloration. The lesion was excised via intraoral access under local anesthesia. The removed piece was sent to the laboratory of pathology of the Dental School of Araçatuba and a diagnosis of nasolabial cyst was obtained. There were no postoperative complications and it was observed a decrease of the facial edema with improvement of patient's breathing.

Palatal torus: case report

Garcia, P.; Capelozza, A.L.A.

The torus is considered as an anomaly of the jaws and is characterized by the appearance of a bone excrescence that has a typical outer cortical bone. It is a slow-growth lesion lined by a thin mucosa that occurs in the midline of the palate or in the lingual surface of the mandible in the premolar and molar regions. It has an incidence of up to 20% in adults and can occur in individuals of both sexes aged above 12 years. It requires treatment in the cases where the patient presents a history of discomfort, phonation or feeding difficulties, as well as in the cases of injuries on its surface due to trauma. The objective of this work is to present a case of torus in a 47-year-old patient, operator of a loading machine, who attended the Integrated Clinic of Prosthodontics at FOB/USP. The patient did not present any symptoms and was not aware of the bone growth in his palate. The anomaly was discovered during intraoral examination and an area of larger growth in the midline of the hard palate. It was hard, painless to palpation and lined by normal mucosa. The planned prosthetic treatment was performed and the patient was given information about his palatal torus and was instructed to sought treatment Clinic of Semiology of our school, in case of traumatic injury to the area of the torus.

Correlation between tumor-associated tissue eosinophilia and clinical staging of oral squamous cell carcinoma

Assao, A.; Tjioe, K.C.; Faustino, S.E.S.; Kowalski, L.P.; Landman, G.; Moraes, R.V.; Oliveira, D.T.

The presence of eosinophils in oral squamous cell carcinoma (SCC) has been observed in cases of extensive muscular infiltration. The aim of this study was to verify whether there is any relation between the presence of eosinophils and the process of stromal invasion in malignant tumors. A total of 43 patients treated for oral verrucous carcinoma or well-differentiated SCC, with or without lymph node involvement, at the Head and Neck Surgery and Otorhinolaryngology Department of the Cancer Hospital A.C. Camargo (Fundação Antonio Prudente, São Paulo, Brazil) from 1980 to 2000 were examined. The eosinophils were quantified in a x400 field using a camera connected to a computer with an image-analysis software. Tumor-associated tissue eosinophilia was classified according to intensity as absent/mild (≤ 175 eosinophils/mm²) and intense (>175 eosinophils /mm²) and it was statistically correlated with its microscopic features and clinical data by Fischer's exact test. Most SCC with III and IV TNM stages (72%) presented intense tissue eosinophilia while absent/mild tissue eosinophilia was frequently detected in SCC with I and II TNM stages ($p=0.024$). These findings suggest that the presence of an intense tissue eosinophilia in SCC seems to be associated with the clinical tumor outcome characterized by extensive muscular infiltration and tissue destruction.

Knowledge of dental students of Unifal-MG of the consequences and complications of the oral piercing use

Almeida, A.S.; Cardoso, C.A.B.; Pereira, A.A.C.; Hanemann, J.A.C.; Oliveira, A.T.

The aim of the present study was to characterize the population of dental students at the Federal University of Alfenas (Unifal-MG) that use body piercing and evaluate the knowledge of these future health professionals of the complications caused by body piercing use, especially in the mouth. Three hundred and sixty six dental students were enrolled in this study. The students answered a survey with questions about their demographics (age, gender, race, etc), information about the use of body piercing, including local of use and for how long they used the piercing, and questions about the willing to use it. Knowledge of the pathologies and problems related to the use of body piercing was also investigated. The statistical correlations between the demographic information and the specific variables described above were obtained by the chi-square test with level of significance of 5%. The results demonstrated a sample constituted mainly of women (58.2%), Caucasians (83.5%) and 15-25-year-old age range (75.1%). Most interviewees reported to be heterosexual (97.8%) and catholic (99.7%). The prevalence of piercing users' among the undergraduate students

was 33.1%. The female students were found to practice more body piercing than the male students, this difference being statistically significant ($p<0.001$). Generally, the students that use body piercing have a higher level of knowledge about the possible complications related to its use than those students that do not use it. The problems related to the use of body piercing can be of local, systemic or even social nature. Therefore, health professionals have to know the risks and consequences of body piercing and inform the population about them, as well as be aware of the possible harms deriving from body piercing.

Ameloblastoma associated with odontogenic keratocyst (keratocystic odontogenic tumor) in the maxilla

Centurion, B.S.; Araújo, M.R.; Albuquerque, D.F.; Lawal, M.; Consolaro, A.; Damante, J.H.

A 66-year-old white male complained about bad adaptation of his maxillary denture about one year. He referred episodes of nose suppurant drainage. Oral examination revealed a swelling on anterior edentulous maxilla. Panoramic, periapical and occlusal radiographs revealed extensive unilocular osteolytic lesion, demarcated by sclerotic margins, vestibular and palatal corticals were expanded and measured 4 cm of diameter. Computed tomography detailed the relations of the lesion with oral and nasal cavities demonstrating partial absence of the vestibular osseous cortical. Aspiration and incisional biopsy were performed, leaving a marsupialized cavity. Microscopic analysis showed a virtual cystic cavity surrounded by parakeratinized stratified squamous epithelium intensely basophilic basement membrane and palisaded cells, leading to the diagnosis as keratocystic odontogenic tumor. After 5 months, the surgical enucleation was performed and the microscopic findings were compatible with ameloblastoma in the area of odontogenic keratocystic tumor. No recurrence was observed after 1 year of follow-up.

Prevention and treatment of some oral complications of head and neck radiotherapy

Tjioe, K.C.; Sá, J.C.R.; Rubira, C.M.F.; Damante, J.H.

Radiotherapy plays an important role in the treatment of patients with head and neck cancer. The field and the radiation dose depend on the histological type, location and size of the tumor and on patient's health. In addition to neoplastic cells, healthy structures, like salivary glands, oral mucosa, teeth, muscles, bone and TMJ may be affected. The purpose of this study is to discuss oral complications caused by radiotherapy, focusing on prevention and treatment. Oral sequelae of radiation are classified in acute (mucositis, dysphagia, hyposalivation), intermediate (dysgeusia, dysphagia and hyposalivation) and late (radiation caries, hyposalivation, periodontal disease and osteoradionecrosis). Acute exacerbation of focal infection and severe mucositis may require adjustments or interruption of the radiation treatment schedule. Patient follow-up by a dentist on pre, peri and post-radiotherapy may prevent or reduce side effects and future complications. These dental procedures and preventive care are discussed in this study, focusing on oral health maintenance and improvement of patient's quality of life.

Ranula caused by sialolithiasis: a case report

Silva, R.C.; Delazare, P.H.M.; Lyrio, M.C.N.; Maia, R.M.L.C.; Barros, L.A.P.

Sialolithiasis is one of the most frequent pathologies of the salivary glands, involving both major and minor glands, but especially the ductal system of the submandibular gland. Mucocoele and ranula (specifically located in the floor of the mouth), are mucous extravasation phenomena that affect salivary glands due to malformation or rupture of gland ducts, changing the normal salivary flow and leading to its deposit in the adjacent tissues. The two main causes for the appearance of ranula are the trauma and the obstruction of gland ducts for the sialolith formation. The purpose of this case report is to address the importance of an accurate diagnosis and immediate treatment when salivary stones are found.

Epidemiology, diagnosis and treatment of lichen planus in the "Buccal Lesions Project" developed at the State University of Maringá

Ido, V.Y.; Silva, M.C.; Pieralisi, N.; Silgueiro, R.S.; Pires, L.C.; Iwaki, L.C.V.

Lichen planus is a chronic mucocutaneous disease of unknown etiology. Starting from a literature review, the purpose of this work was to evaluate the clinical aspects of the lichen planus, as well as to compare these findings with literature reports. 26 clinical records from the archives of the "Epidemiology, Diagnosis and Treatment of Buccal Lesions" extension project, of the Department of Dentistry of the State University of Maringá (PR, Brazil) between 1995 and 2005 were consulted and reviewed. The data were controlled and analyzed. Ultimately, they led to the

conclusion that the lichen planus is a common disease in middle-aged women, in its reticular form and with preferential location in the mucosa. When there is burning sensation or pain, the use of medications (corticosteroids) relieves the symptoms. Additionally, the histopathologic exam of the lesion associated with its clinical observation is the more accurate method to establish the final diagnosis

The importance of Radiology for Forensic Dentistry in human identification

Martins, E.C.; Martins, E.C.; Caputo, I.G.C.; Inada, M.; Silva, R.F.; Daruge, E.

In current days, Radiology plays an important role in several fields, mainly in health areas. Since the discovery of x-rays, it has been used to visualize organs and/or structures where the man is not able reach. In Dentistry, the Radiology has also an important contribution in the diagnosis and human identification. Supported by the legislation (CFO - Law 5081/1966, Art. 6º and CFO - 63/2005, Art. 64), the dentist is entitled to use of x-ray equipments in dental offices for diagnostic purposes. Dental radiologists may also run imaging exams for Forensic Dentistry goals. In human identification, Radiology has an important applicability providing radiographs that will aid the forensic dentist to complete the cases with satisfactory information. Identification can be done by conventional, panoramic and digitalized radiographs. In human identification, radiographs from the skull, face or teeth can help estimating the age of children and adults. Post-mortem radiographs may reveal evidences of ante-mortem dental treatments that will help in human identification. The work of the forensic dentist becomes easier when a good documentation, especially complete dental radiological documentation, is available.

Eagle's syndrome: a report of one case treated with intraoral approach

Strujak, G.; Romanowski, M.; Gomes, K.U.; Biron, C.; Gebert, A.O.; Carlini, J.L.

In 1937, Eagle described some cases of pharyngeal and cervicofacial pain caused by elongation of the styloid process (more than 25mm) or calcification of its ligaments. He believed that 4% of the population had the process elongated, and 4% of these patients had symptoms. The symptoms of this condition are vague pharyngeal pain, cervicofacial pain, foreign body sensation in the pharynx, dysphasia, pain on head movements, irradiated pain on the temporomandibular joint and superior limb, earache, headache and vertigo. The variations of these symptoms are attributed to the variations of styloid process length and position, made by adjacent tissues fibrosis for infection, fracture or surgery in the styloid process region. Diagnosis may be difficult with symptom variation. The purpose of this work is present the case of a 39-year-old female patient, who came to our service complaining of pain on the tonsil fossa, on the head movements, on swallow and on opening the mouth, this symptoms irradiated to the ear region, and foreign body sensation on the pharynx. The processes are seen on the panoramic radiograph at both sides. Tenderness to palpation was elicited bilaterally in the tonsil fossa. Styloidectomy was made bilaterally with an intraoral approach. After surgery, the patient had breath complications, needed medication and mechanical ventilation. Seven days later, the patient shown limitation on mouth opening, pain on swallowing and was asked to go to an otolaryngologist because of nose refluxing. Within 30 days, there was an improvement on mouth opening and symptom resolution. The patient is still being followed up.

Conscious sedation with nitrous oxide

Carmo, C.H.; Tobouti, P.L.; Laranjeira, A.P.J.; Tanaka, C.E.; Martins, L.P.

Conscious sedation with nitrous oxide and oxygen basically aims to reduce the anxiety of the patient, thus increasing his/her pain threshold. It is a state of depression of the conscience in which the patient can keep the airways functioning independently and properly and can answer to physical stimuli and verbal command. In contrast with drug-induced anxiety control, which demands certain caution, requiring evaluation of the physical and psychological state of the patient, conscious sedation with nitrous oxide has rapid absorption and elimination, facilitating the control of its effect and allowing the patient to perform any activity immediately after the treatment. The nitrous oxide has little effect on the cardiovascular and respiratory systems, mainly because of its low power, hindering a deeper anesthesia. Therefore, the nitrous oxide has fast induction and recovery due to its blood/gas partition coefficient. Conscious sedation with N₂O/O₂ is contraindicated for patients with blockage of superior airways, psychiatric problems, obstructive chronic pulmonary disease, asthma, etc. The administration of nitrous oxide is regulated by the dentist until reaching the ideal concentration for the patient. The technique of conscious sedation does not eliminate the use of local anesthetics, but rather the combination of the two methods is efficient. The use of conscious sedation with nitrous oxide and oxygen has increased among skilled professionals throughout the country due to its high safety margin and benefits for both the patients and the professionals.

Endodontics

Analysis of the sealing capacity of apical plugs prepared with gray MTA Angelus®, CPM® and MBPc cements

Fidelis, N.S.; Orosco, F.A.; Bramante, C.M.; Garcia, R.B.; Bernardineli, N.; Bortolo, M.V.; Moraes, I.G.

The purpose of this study was to evaluate the sealing capacity of apical plugs prepared with gray MTA Angelus®, CPM® and MBPc cements. Ninety-eight human single-rooted teeth were first hand instrumented in a crown-down direction, then prepared with Gates-Glidden drills (from #5 to #1) and finally with #50 to #90 K-files. The #1 Gates-Glidden drills and all files passed 1 mm beyond the apical foramen. The external surface of the teeth was rendered waterproof and the teeth were assigned to 3 groups (n=30), according to the materials used in apical plug preparation, as follows: Group 1- gray MTA Angelus®; Group 2- CPM®, Group 3- MBPc. Eight teeth served as positive and negative controls, in which apical plugs were not prepared. The sealing capacity was analyzed by the assessment of 2% Rhodamine B dye leakage, after immersion of the teeth for 48 hours at 37°C. Kruskal-Wallis and Dunn's tests were used for statistical analysis (p<0.05). The results showed that, comparing the sealing capacity of the tested materials, MBPc presented statistically significant better results than the other cements.

Is it necessary the use of matrix in perforations treated with MTA?

Assumpção, T.S.; Moraes, I.G.; Bernardineli, N.; Garcia, R.B.; Broom, N.J.; Bramante, A.S.; Bramante, C.M.

Among the different types of treatments for tooth perforations, is their sealing with calcium hydroxide and, more recently, mineral trioxide aggregate (MTA). The aim of the present study was to show the importance of matrix use when the perforation is sealed with MTA and to describe the technique for this preparation. MTA insertion should be carefully done not to extrude to the periodontal space because it could impair the repair process. Matrix preparation is important to prevent this occurrence. This matrix can be fabricated from calcium hydroxide or calcium sulfate, which are inserted via perforation, for further insertion of MTA.

Treatment option for avulsed permanent teeth

Tolentino, L.S.; Fracasso, M.L.C.; Pavan, N.N.; Boselli, G.; Tolentino, E.S.; Queiroz, A.S.

Dental avulsion is a complex injury that affects the pulp tissue, periodontal ligament and alveolar bone. It is more frequent in children aged 7 to 11 years. The prognostic is directly related with the extra-alveolar time and there is a consensus regarding the fact that the shorter the period (<30 minutes), the greater the possibility of pulp revascularization and periodontal ligament fiber reinsertion. Likewise, the need of maintaining the avulsed tooth in an adequate storage medium is consensual. This work reports a case of replantation of an avulsed maxillary right central incisor, which was rendered complex because the clinical attendance was undertaken 48 hours after the injury and the avulsed tooth was kept dry by the patient, a 10-year-old male child. The dental care was provided at the emergency service of the Dental Clinic of UEM-Pr. The radiographic examination showed integrity of the alveolar wall. The tooth was secured by its crown, coronal access was prepared and the root canal was filled with a calcium hydroxide and propylene glycol paste because tooth had open apex. The patient received local anesthetics, the blood clot was removed and the alveolus was prepared for replantation. After that, a rigid retention was placed for 7 days and postoperative medication was prescribed. Eight sessions for changes of the calcium hydroxide-based dressing were undertaken during 12 months, followed by the definitive root canal filling. After 18 months, the tooth presents a normal appearance and the radiographic examination revealed a subtle alteration in the apical root third. It may be concluded that, although the initial conditions indicated an unfavorable prognostic and are contraindicated in the scientific literature, a considerable benefit for the patient was achieved, as the treatment allowed the reintegration of the patient to his social life, as well as the maintenance of the growth and face development.

Evaluation of physicochemical properties of retrograde filling sealers containing mineral trioxide aggregate and an experimental epoxy sealer

Vivan, R.R.; Vasconcelos, B.C.; Bramante, C.M.; Garcia, R.B.; Bernardineli, N.; Moraes, I.G.

This study evaluated some physicochemical properties of different retrograde filling sealers containing mineral trioxide aggregate (MTA) and an experimental epoxy sealer. The cements comprised ProRoot MTA, gray MTA-Angelus®, white MTA-Angelus®,

C.P.M., an experimental MTA and MBPc (epoxy). Evaluation of pH and release of calcium ions was performed with aid of polyethylene tubes. The tubes were filled with the sealers and immediately immersed in test tubes containing deionized water. Evaluations were performed at 3, 24, 72 and 168 hours. The pH was calculated using a pH meter and the calcium ion release was assessed by atomic absorption spectrophotometry. The tests used for evaluation of the physicochemical properties followed the ADA's #57 specification, except for the setting time, which included utilization of a Gilmore needle. The results demonstrated that all tested sealers presented alkaline pH and were able to release similar calcium ion contents. Concerning the setting time, sealers fabricated by the company Angelus presented the shortest periods. With regard to solubility, all sealers had values close to 1.0%. In conclusion, according to the pH and considering the analyzed time points, there was statistically significant difference only between the 24- and 72-hour periods. In relation to calcium ion release, there was a decrease at the 24-hour period, with increase in the other periods and statistically significant difference in all time points. MBPc presented the largest setting time. With respect to the solubility, there was statistically significant difference between MBPc and the MTA-containing cements.

An in vitro evaluation of dye leakage of three temporary restorative materials

Melani, A.C.F.; Corrêa, C.Q.A.; Bombana, A.C.; Pereira, P.Z.; Zárate, C.B.R.

The aim of this work was to evaluate in vitro dye leakage of three temporary restorative materials in root canals between sessions. Thirty extracted human mandibular molars were selected and received MOD cavity preparations and coronal access. The cavities were cleaned, sealed with cotton balls to protect the canal entrance and received a layer of gutta-percha, leaving a space of 4 mm between the gutta-percha and the cavosurface angle, for further placement of the other materials. The teeth were randomly assigned to three groups: Group 1: Gutta-percha + Coltosol® + Vidrion R®; Group 2: Gutta-percha + Coltosol® + Fill Magic®; Group 3: Gutta-percha + Coltosol® + IRM®. Each material was inserted in a thickness of 2 mm. The specimens were rendered completely waterproof with nail polish, leaving a 2-3 mm window around the MOD cavity. The teeth were then incubated at 37°C and 100% humidity for 24 hours. Thereafter, the specimens were placed in 0.5% methylene blue dye solution at pH 7.2 for 48 hours. After removal of excess dye, the teeth were cut on the buccal and lingual surfaces. To determine the leakage area and the total tooth area, all the specimens were photographed with a digital camera, the images were entered in the AutoCAD (R14) software and the values were converted into percentage. In a decreasing order of leakage, the materials are arranged as follows: Fill Magic®, Vidrion R® and IRM®. The Kruskal-Wallis test revealed significant differences at 5% among the materials. It may be concluded that Fill Magic® resin showed the best performance to restore temporarily endodontically treated teeth.

Horizontal fractures: diagnosis and treatment

Miranda, J.T.; Tolentino, L.S.; Yamamoto, K.; Boselli, G.; Alves, M.L.M.; Endo, M.S.; Hidalgo, M.M.

Horizontal root fractures, also known as intra-alveolar root fractures, represent hard structure disruption from the root that becomes separated into a coronal and an apical fragment. Although fractures can occur in all parts of the root, the middle third is the most affected. The aim of this study was to demonstrate, by means of three case reports, the sequence of procedures to be adopted in case of horizontal root fracture. In the first case, surveillance was the treatment approach of choice. In the second case, the coronal fragment was treated endodontically, while in the third case, the endodontic treatment was started in both fragments, but only the cervical portion was filled with gutta-percha because it was dislocated. Over time, it was observed radiographically normal conditions and absence of adverse clinical signals and symptoms with a good prognosis, which were reached due to the correct diagnosis and treatment.

SEM analysis of root-end preparation using two ultrasonic tips

Borgo, M.; Torres, M.; Bernardinelli, N.; Garcia, R.B.; Moraes, I.G.; Bramante, C.M.

The purpose of this study was to evaluate the regularity of root-end preparations performed with two types of ultrasonic tips. For such purpose, 18 mandibular premolars with one root canal were selected and apicoectomized. After this, diamond and stainless steel tips and the association of both were used for preparation of the root-end cavities. Clinical and SEM analyses showed smoother walls with the use of stainless steel tips. The association of both tips did not change the quality of the preparation.

Bacterial leakage versus dye leakage in obturated root canals using RSA and Grossman sealers

Zapata, R.O.; Abarca, D.M.; Bramante, C.M.

The aim of this study was to compare in vitro bacterial and dye leakage using cold lateral condensation and Grossman (Endofill) and Roeko seal automix (RSA) sealers. One hundred and one single-rooted teeth were used. 45 roots were used in the dye leakage test using black Indian ink for 21 days, 15 roots were used as control (no sealer). For bacterial leakage test, 56 roots were used. *Enterococcus faecalis* ATCC 29212 and the Bilis Esculin medium were used to evaluate bacterial leakage for 21 days, 3 roots being used as negative controls and 3 roots as positive controls. Statistical analysis revealed significant differences between the sealers and between the tests. RSA sealer leaked significantly less than the Grossman sealer in both tests ($p < 0.01$). The bacterial test was more effective to show the leakage ($p < 0.01$). In conclusion, root canal sealers are susceptible to coronal leakage. No relation could be observed between the results obtained with both two tests.

Treatment of external root resorption by employing calcium hydroxide and MTA: a case report

Rivas, V.E.Z.; Nishiyama, C.K.; Moraes, F.G.; Hussne, R.P.

One of the causes of external root resorption is the presence of an impacted tooth adjacent to a permanent one. Third molars are the teeth with the highest prevalence of impaction, followed by maxillary canines. To cease the resorption process, an interdisciplinary treatment approach is needed. It is aiming at eliminating the cause by orthodontic movement or extraction of the impacted tooth, in addition to altering the conditions that favor the clastic action, with intracanal dressing changes. A 15-year old patient with a pre-foramen fissure was referred to the Endodontic service of H.R.A.C. for evaluation of tooth 21, which presented an external resorption on the lateral root surface, caused by impaction of tooth 23. The endodontic treatment started with periodical changes of calcium hydroxide dressings, every 60 days, for 2 ½ years, until a repair process was observed. During this period, orthodontic traction was carried out for tooth 23, which took about 3 months to erupt and 6 months to be in occlusion. Filling was performed with mineral trioxide aggregated. Case follow up was accomplished every 6 months, demonstrating a complete repair of periapical tissues and the recovery of tooth 21, thus confirming the success of the therapy employed.

In vivo assessment of the antimicrobial action of 1% sodium hypochlorite, 2% chlorhexidine and 10% castor oil detergent as endodontic irrigants

Siqueira, D.C.R.; Torres, S.A.; Bernardinelli, N.

The objective of this study was to evaluate in vivo the antimicrobial activity of 1% sodium hypochlorite, 2% chlorhexidine and 10% castor oil detergent in 18 root canals of human anterior teeth with pulp necrosis and periapical lesion. After antiseptic access surgery, the first microbiological sample was taken with four sterile absorbent paper points. Instrumentation was performed with K-files using 1.8 mL of the irrigants and the second microbiological sample was taken. The third sample collection was made 72 h after biomechanical preparation. The samples were transported on PBS solution, submitted to serial decimal dilution, streaked in plates with Tryptic Soy Agar, and incubated in aerobic and anaerobic conditions. The number of colony-forming units (cfu) was counted after incubation periods. According to the studied sample, the applied methodology and the results obtained, it may be concluded that all irrigants showed significant numerical reduction after biochemical preparation and an increase in number of microorganisms after 72 hours. The biochemical preparation was not able to prevent bacterial recolonization. After 72 hours, 2% chlorhexidine and 10% castor oil were more effective than 1% sodium hypochlorite.

The importance of the differential diagnosis in paraendodontic surgery

Néspoli, F.G.; Moraes, I.G.; Victorino, F.R.; Bernardes, R.A.; Bernardinelli, N.; Camargo, E.J.; Baldi, J.V.

Paraendodontic surgery aims to solve complications resulting from root canal treatment or intimately related with the periapical region. A 55-year-old Caucasian patient was referred to the Endodontic Clinic of the School of Dentistry of Baur to be submitted to a paraendodontic surgery in the region of tooth 21 with presumptive diagnosis of inflammatory radicular cyst. However, the periapical radiographic examination of tooth 21 by Clark's localization technique and total occlusal radiograph of the maxilla, it was observed the preservation of the apical periodontal space of the affected tooth and presence of intact lamina dura, with suggestive diagnosis of residual cyst. The paraendodontic surgery was performed with buccal access in the region of teeth 21 and 23 and total flap elevation. After removal of the

bone plate and cyst enucleation, it was observed the absence of involvement of the root apices of the adjacent teeth with the surgical bone wound, thus corroborating the radiographic findings. The piece was sent for histopathological analysis, confirming the diagnosis of residual cyst. This case report demonstrates the importance of the correct interpretation of the signs and symptoms disclosed in the clinical evaluation and in the complementary imaging exams for the preservation of teeth and prosthetic pieces without the accomplishment of unnecessary surgical interventions.

Corrective paraendodontic surgery

Xavier, B.R.A.; Portilho, C.D.M.; Junior, J.R.C.; Arruda, M.; Rangel, A.L.

The paraendodontic surgery comprehends several procedures, among which the most important is the resolution of failures or accidents occurred during conventional endodontic treatment. The surgical procedures should be scrupulously indicated. Only after eliminating all possibilities of conventional endodontic treatment, surgery should be considered as an option. This case describes a surgical correction by apicoectomy in a tooth that had already been submitted to a failed paraendodontic surgery. A 44-year-old patient came to the Clinic of Specialization in Endodontics of FO/UFG, presenting with gingival fenestration in the apical third of the maxillary right incisor, partially exposing the root apex and the retrofilling material. After radiographic examination, the root canal was retreated and a new surgery was performed. Initially, a flap was elevated, with sulcular incision and oblique relaxing incision at the region of the canine on the same side, the bone wound was enlarged for better visualization of the root apex, followed by apicoectomy with removal of approximately 3mm of the root, which was curetted. The soft tissue surrounding the root was removed for histopathological analysis. Retrofilling was made with MTA and hydroxide of calcium. Due to the gingival fenestration, a bovine collagen biological membrane was used, thus avoiding penetration of soft tissue into the site at which new bone formation should occur, followed by repositioning of the flap and suture. The histopathological analysis revealed a fibrotic scar. One month after surgery, the gingival tissue was healed, without fenestration. Three- and six-month radiographic follow up revealed the occurrence of bone healing.

Root-end fracture during retropreparation using ultrasonic instruments. A scanning electron microscopic analysis

Bortolo, M.V.; Urra, C.; Garcia, R.B.; Moraes, I.G.; Bernardinelli, N.; Fidelis, N.S.; Bramante, C.M.

The purpose of this study was to use a protocol to evaluate, in vitro, the occurrence of root-end fracture during retropreparation using ultrasonic instruments. Twenty palatal roots of human maxillary molars were selected and impressions were taken after the apicoectomy and after the retropreparation. The roots were then assigned to two groups according to the type of root-end preparation: Group 1-performed with smooth retrotips-S12/90 (Satelec, Merignac, France) and Group 2-performed with diamond-coated retrotips-S12/90D (Satelec, Merignac, France). The replicas and the roots were coded and prepared for analysis under scanning electron microscopy (SEM). They were examined, recording the incidence, extent and amount of fractures after each procedure. There were more fractures in Group 1 than in Group 2. Also, there were more fractures on the roots than on the replicas, probably, decurately of the process of metallization, necessary for preparation for SEM analysis.

Bleaching of endodontically treated teeth with led-laser system: case report

Troiano, M.; Nagano, R.; Oliveira, A.; Floriam, L.J.; Marchesan, M.

This study reports a case of dental trauma with coronal fracture followed by endodontic treatment of the maxillary right and left central incisors (11/21) in a 13-year-old patient who presented with darkening of the tooth remnant but not of the attached fragments. In order to reestablish esthetics after root canal treatment, bleaching was performed with red 35% hydrogen peroxide associated with a led-laser system. Therefore, 3 mm-thick intracanal barriers were placed at the root canal entrance at the cementoamel junction with zinc phosphate cement in order to avoid gas penetration from the oxo-redox reaction of bleaching product. The led-laser system used to photoactivate this process had a central diode laser (790 nm, 40 mW) and 8 surrounding leds (567 nm, 57 mW). The process was repeated 3 times and the zinc phosphate barriers were replaced, as the literature suggests that leakage increases after this period. Fifteen days after bleaching, root canals were prepared to receive glass ionomer posts cemented with resin-based cement and the definitive crown was placed with composite resin. The advantage of using the led-laser system in dental bleaching is that it allows the gel to be placed only at the darkened portion of the crown while with conventional whitening the entire surface is affected. In this case, the original color of the crown remnant was recovered and harmony with the attached fragments was reestablished.

Pulpectomy in teeth with pulp necrosis: single- or multiple-session treatment?

Pimentel, L.B.; Fraga, S.C.; Garcia, R.B.; Yamashita, J.C.

The literature is divided in two treatment protocols. The results of some studies involving biomechanical preparation, intracanal medication and, later obturation have shown that there are no significant differences in the obtained results from those reached with the single-visit approach. However, it has been demonstrated that biomechanical preparation alone is not sufficient to remove the microbiota of root canals. The microorganisms persist inside the dentinal tubules and in the periapical region in the form of biofilms. Therefore, the use interappointment intracanal medication may increase the success rate in cases of pulpectomy in teeth with pulp necrosis and periapical lesion.

SEM evaluation of root surface after chemopreparation with different substances

Santin, J.; Campos, G.R.; Gonçalves, F.R.; Silva, D.P.; Silva M.C.P.

This study evaluated, by scanning electron microscopy (SEM), the influence of chemical solutions used in the chemomechanical preparation of root canals on dentinal structure. Eight bovine teeth had their crowns removed at the cervical region and the roots sectioned longitudinally, being standardized in 10 mm, having the cementoamel junction as a reference. The fragments were treated with 0.5%, 1% and 2.5% sodium hypochlorite (NaOCl), 1% NaOCl + Endo-PTC, 2.5% NaOCl + Endo-PTC, and 2% chlorhexidine gel, and were thereafter immersed in 17% EDTA for 3 minutes. The control group was maintained in distilled water for 20 minutes. The specimens were then submitted to SEM analysis at 500x and 1500x magnifications. The groups treated with 2% chlorhexidine gel and distilled water presented with a large inter and peritubular dentin surface, with few and small-diameter dentinal tubules. The teeth treated with 0.5% and 1% NaOCl, and 1% NaOCl + Endo-PTC presented with a smaller inter and peritubular dentin surface, with dentinal tubules with a larger diameter and in larger number, in addition to the presence of small depressions. In the groups treated with 2.5% and 5.25% NaOCl, and 2.5% NaOCl + Endo-PTC, the dentin surface was heavily altered presenting a smaller area of inter and peritubular, large-sized tubules and depressions throughout the dentin surface. According to the employed methodology and the obtained results it may be concluded that the use of NaOCl in the tested concentrations and associations with Endo-PTC was able to cause more alterations on dentin morphology by increasing the number and diameter of exposed dentinal tubules in comparison to chlorhexidine gel and distilled water.

In vitro evaluation of the influence of sodium hypochlorite and EndoPTC in the adhesion of Rely X resin cement

Gonçalves, F.R.; Silva, D.P.; Venâncio, J.S.; Silva, M.C.P.; Campos, G.R.

Biomechanical preparation of the root canal system is a very important step to the success of the endodontic treatment. The aim of this study was to evaluate, in vitro, the influence of chemical substances used in the chemomechanical preparation on the bond strength of Rely X resin-based cement to root dentin. 55 bovine teeth had their crowns removed at the cervical region and the roots sectioned longitudinally, being standardized in 10 mm, having the cementoamel junction as a reference. Next, the specimens were embedded in autopolymerizing resin blocks and were treated as follows: 1% sodium hypochlorite (NaOCl) (Group 1), 2.5% NaOCl (Group 2), 1% NaOCl + Endo PTC (Group 3), 2.5% NaOCl + Endo PTC (Group 4) and distilled water (Group 5), for a period of 20 min. Thereafter, all specimens were immersed in 17% EDTA for 3 min. One specimen of each group was submitted to SEM analysis for evaluation of the surface. For the tensile bond strength test, the specimens were etched with 37% phosphoric acid for 15 seconds, Single bond adhesive system was applied followed by Rely X resin-based cement. Bond strength means (in kgf) were as follows: G1(12.39);G2(13.75);G3(10.11);G4(13.42) and G5(5.68). The SEM analysis showed that groups 1, 2, 3 and 4 presented a larger number of open dentinal tubules with greater diameter, extensive area of depressions on the surface and less amount of intertubular dentin, in comparison to the control group (lesser number of exposed dentinal tubules). The associations of chemical substances did not affect the bond strength of the resin-based cement to the root dentin in comparison to the groups treated with sodium hypochlorite.

Radiographic evaluation of root canal ramifications before and after the endodontic treatment performed by postgraduate students from FOP-UNICAMP

Pereira, M.V.S.; Montagner, F.; Quadros, I.; Gomes, B.P.F.A.

The aim of this work was to evaluate, by means of radiography, the frequency of root canal ramifications before and after the endodontic treatment performed by postgraduate students. Eight hundred and one cases were selected from 1500 endodontic treatments performed between 1995 and 2002. The radiographic

evaluation aimed to determine the frequency and the classification of root canal ramifications, such as lateral canals, recurrent canals, collateral canals, inter-radicular canals and apical deltas. Lateral canals (4.3%), apical deltas (3.6%) and interradicular canals (0.25%) were the most frequently found ramifications. The greater frequency of lateral canals was found in the maxillary first molars (0.74%) and in the maxillary central incisors (0.49%). The greater frequency of apical deltas was in the mandibular first molars (0.87%). Mandibular first molars presented 0.12% of the inter-radicular canals. Recurrent and collateral canals were not found in the examined teeth. It was concluded that molars are the teeth with the greatest frequency of radiographically detected ramifications. The presence of such ramifications emphasizes the need of a proper chemomechanical preparation, followed by an adequate root canal filling, in order to seal the ramifications.

Clinical complications due to the lack of knowledge of root canal internal anatomy of the root canals: case report

Fontes, T.S.; Pereira, M.V.S.; Lyon, L.A.; Silveira, A.M.V.

The knowledge of internal dental morphology is essential for the correct execution of the root canal disinfection and shaping. Several factors can make the treatment fail, such as fracture of instruments in the root canal and perforations. Fracture of endodontic instruments can be an obstacle to the treatment progression, or even pose risk to treatment completion, such as in cases where root perforation establishes an artificial communication between the pulp chamber or root canals and the periapical tissues. This event is usually due to the lack of knowledge of dental anatomy. The analysis of the pulp chamber is complex because the, using the available resources, the endodontist should interpret the image of a three-dimensional structure in only one dimension. Therefore, deep knowledge of the internal of tooth anatomy is extremely important to reduce the incidence of failures that could lead to tooth loss. Failure of the endodontic treatment frequently represents the lack of observation in one of the initial operative steps. These situations are illustrated by the presentation of the cases of two endodontic instruments fractured inside the root canal and root perforation that induced treatment failure with consequent tooth loss.

Enucleation of apical periodontal cyst with apicoectomy: case report

Davalos, P.M.E.; Venâncio, C.A.B.; Corotti, M.

It is acknowledged that the endodontic treatment has advanced over time both technically and scientifically, thus reaching greater success rates. However, root canal therapy involves some complex operative steps that subject to failures, accidents and a wide array of complications that can lead, in some cases, to complete failure. For cases that cannot be treated by conventional endodontic treatment, endodontic surgery appears as an important treatment resource, as observed in the present case report. A 17-year-old female patient was referred to the Clinic of Endodontics of Uningá for presenting a periapical lesion associated with the root-filled tooth 22, which was under orthodontic treatment. After evaluation of the situation, endodontic surgery for cyst enucleation was indicated together with apicoectomy of tooth 22, which was satisfactorily treated endodontically. The treatment approach was considered as successful because, until the present moment, the case evolves with the gradual disappearance of the radiographic periapical lesion signs, showing an excellent healing process.

Bond strength of Endofill sealer to root canal walls after the surface treatment with CO₂ laser

Alves, G.T.O.; Oliveria, A.G.; Marchesan, M.A.; Alfredo, E.; Silva-Sousa, Y.T.C.; Sousa-Neto, M.D.; Gabriel, A.E.S.

New technologies have been investigated to increase the adhesion of endodontic sealers to root canal walls. Among them, the CO₂ laser has shown promising results due to the microretentive pattern created on dentin surface. Therefore, this study evaluated in vitro the adhesion of Endofill sealer after surface treatment with CO₂ laser, using the push out method and comparing the results to those of conventional dentin treatments. Forty-five caries-free maxillary canines had the crowns sectioned and the root canals endodontically treated. The roots were included in aluminum molds with acrylic resin (16 mm diameter and 8 mm height) and regularized with SiC papers. The internal diameter of each canal was standardized with a tapered diamond drill under a flat base. The specimens were randomly divided into 3 groups (n=15) according to the surface treatment: GI - CO₂ laser irradiation (3W, continuous mode, during 10 s), GII - 2 mL 17% EDTA (5 min), GIII - 2 mL of distilled water (5 min - control). The specimens were then filled with Endofill sealer and stored at 37°C by a period of three times the sealer setting time. After this, the push out test was performed in a universal testing machine at a crosshead speed of 1 mm/min. Kruskal-Wallis test (p<0.01) showed that the specimens that received CO₂ laser application had the highest bond strength means (0.137 ± 0.036 KN). The water (0.082 ± 0.030 KN) and EDTA (0.092 ± 0.036 KN) groups were statistically similar to each other

(p>0.01) and had the lowest means. It was concluded that surface treatment with CO₂ laser increased the adhesion of Endofill sealer to the root canal walls.

Bond strength of a resin-based cement after root canal preparation with endodontic chemical substances

Silva, D.P.; Gonçalves, F.R.; Venâncio, J.S.; Silva, M.C.P.; Campos, G.R.

The present study evaluated "in vitro" the influence of chemical substances used in the chemomechanical preparation on the bond strength of Rely X resin-based cement to root dentin. 55 bovine teeth had their crowns removed at the cervical region and the roots sectioned longitudinally, being standardized in 10 mm, having the cemento-enamel junction as a reference. Next, the specimens were embedded in autopolymerizing resin blocks and were treated with the following sodium hypochlorite (NaOCl) concentrations: 0.5% (group 1); 1% (group 2); 2.5% (group 3); 5.25%, in addition to the control group that received distilled water (group 5), for periods of 20 min. Thereafter, all specimens were immersed in 17% EDTA for 3 min. One specimen *per* group was submitted to SEM analysis for surface evaluation. For the tensile bond strength test, the specimens were etched with 37% phosphoric acid for 15 seconds, Single bond adhesive system was applied followed by Rely X resin-based cement. Bond strength means (in kgf) were: G1:(7.77); G2:(12.39); G3:(13.75); G4:(23.12) and G5:(5.68). Data were submitted to statistical analysis. The SEM analysis showed that the root dentin, when in contact with NaOCl, presented alterations in its morphological structure, with reduction of the intertubular dentin, increase in the diameter of dentinal tubules and presence of areas of depressions on the surface. Based on the obtained results, it may be concluded that 5.25% NaOCl increased significantly the bond strength of the resin-based cement to dentin compared to the distilled water and the other NaOCl concentrations.

Pediatric Dentistry

Orofacial changes in patients with mucopolysaccharidosis

Tanaka, M.H.; Cavalcante, L.B.; Figueiredo, E.L.; Giro, E.M.A.; Caminaga, R.M.S.; Nascimento, P.B.L.

Mucopolysaccharidoses (MPS) are lysosomal storage diseases caused by a deficiency or absence of any of the enzymes that break down mucopolysaccharides. These build up in the lysosomes and impair cell function. The MPS can be classified into seven types depending on the enzyme that is deficient. The defective gene for the MPS is in one of the autosomal chromosomes; therefore it is an inherited condition of autosomal recessive transmission, except for Hunter Syndrome (MPS Type II), where the defect is in the X chromosome. The objective of this study was to report the case of two male uterine siblings with mucopolysaccharidosis type II, aged 6 and 16 years old, with emphasis on orofacial manifestations. Upon examination, severe systemic changes were detected, such as hydrocephaly, prominence of the temporal and frontal bones, hepatosplenomegaly, mental retardation, joint, pulmonary and heart changes and dental changes were also observed, namely delayed tooth eruption, diastemas and enlarged alveolar ridge. These characteristics are directly or indirectly associated with the accumulation of mucopolysaccharides in the tissues. Therefore, it is very important to know the changes that have taken place so that an adequate treatment plan may be settled to improve the oral conditions and quality of life of these patients.

Replantation of an avulsed primary maxillary central incisor and management of dilaceration as a sequel on the permanent successor

Paschoal, M.A.B.; Sakai, V.T.; Oliveira, T.M.; Moretti, A.B.S.; Santos, C.F.; Machado, M.A.A.M.

This case report outlines the sequel and possible management of a permanent tooth traumatized by the predecessor, a primary maxillary right central incisor that was avulsed and replanted by a dentist 1 hour after the trauma in a 3-year-old girl. Three years later, discoloration and fistula were present, so that the primary tooth was extracted. The patient did not come to the scheduled follow-ups in order to perform a clinical and radiographic control of the succeeding permanent incisor, only returning when she was 10 years old. At that moment, impaction and dilaceration of the permanent maxillary right central incisor were detected radiographically. The dilacerated permanent tooth was then surgically removed, and an esthetic fixed appliance was constructed with the crown of the extracted tooth. Positive psychological influence of the treatment on this patient was also observed.

Congenital toxoplasmosis as an etiological factor in West syndrome

Calvacante, L.B.; Tanaka, M.H.; Kishimoto, K.Y.; Bocardi, K.; Caminaga, R.M.S.; Giro, E.M.A.

Congenital toxoplasmosis is transmitted to the fetus through blood by a focus of infection in the placenta. Roughly 75% of the congenitally infected newborns are asymptomatic. However, nearly all of these children will present clinical manifestations of congenital toxoplasmosis as they develop and these may include: ophthalmologic changes, CNS abnormalities (microcephaly, hydrocephaly, encephalomyelitis, convulsions and mental retardation), jaundice, anemia and thrombopenia. Toxoplasmosis is one of the most common prenatal forms of catastrophic epilepsy and West syndrome represents from 3 to 11% of this type of epilepsy. Phenytoin is used to control convulsions in these cases and drug-induced gingival hyperplasia occurs as a side effect in 65% of the patients. The objective of this study was to emphasize the clinical protocol and the dental treatment of a patient with West syndrome due to neurological sequelae from congenital toxoplasmosis, who presented drug-induced gingival hyperplasia in the entire dental arch, tartar and high caries activity. Initially, the neurologist was asked to replace phenytoin by another drug that did not induce gingival hyperplasia. Preventive and restorative treatments were undertaken. Four months after the substitution of phenytoin by topiramate, gingivoplasty was done in each quadrant in monthly intervals. The obtained results were favorable both esthetically and functionally and, after an 18-month follow-up, a slight decrease in gingival growth was observed. In conclusion, the substitution of phenytoin by topiramate and gingivoplasty, as well as oral hygiene advice, improved the oral health of the patient.

Baby's oral anomalies

Souza, D.B.; Buss, M.F.; Borgo, P.V.; Ganhoto, A.P.A.

This work has as objective to present the most frequently found anomalies in the oral cavity of babies and the adequate treatments for these cases. The anomalies considered as the most frequent are: native ankyloglossia, natal and neonatal teeth, ulcer of Riga-Fede, pearls of Epstein, nodules of Bohn, cysts of the dental blade and hematomas of eruption. The current trend in health is to give emphasis to an early care. Therefore, few-month-old babies are now taken to the pediatric dentist. It is therefore important that the dentist has knowledge of the morphological characteristics of babies' oral cavity and the standards of the normality. This way, he/she can recognize and diagnosis, in a safe and correct way, the probable anomalies occurring at early childhood, tranquilizing the parents and establishing the therapeutic approach indicated to the case.

Dental fluorosis - clinical aspects and associated etiological factors

Paquier, G.M.; Boaventura, J.M.C.; Brito, C.A.; Padovani, G.C.; Lima, J.P.M.; Queiroz, R.S.; Carrara, C.E.

Dental fluorosis occurs as a consequence of prolonged intake of fluoride in small doses, but above the ideal quantity, during tooth formation. It is characterized by an increase in the porosity of the enamel surface, which gives the tooth an opaque appearance. Clinical characteristics are defined by a range of alterations that comprises fine white lines around the tooth up to conditions in which there is a localized enamel loss associated or not with pigmentation. The clinical appearance of dental fluorosis can be classified in grades reflecting the stages of increasing severity. This work presents clinical situations showing several degrees of fluorosis, suggesting the influence of different factors on its etiology.

Effect of Er:YAG laser irradiation on incipient carious lesions: morphological analysis

Alencar, C.J.F.; Tashima, A.Y.; Navarro, R.S.; Mendes, F.M.; Zzell, D.M.; Haddad, A.E.

This in vitro study aimed at evaluating the morphological characteristic of incipient carious lesions, in primary teeth, after irradiation with Er:YAG laser (KaVo Key II). The sample (12 enamel blocks) was submitted to pH cycling (7 days) for the formation of lesions. Then, the specimens were randomly divided into 4 groups (n=20): C – control, LF – Er:YAG laser in focused mode (18.67 J/cm²), L3 – Er:YAG laser in defocused mode (3 mm; 3.23 J/cm²), L6 – Er:YAG laser in defocused mode (6 mm; 1.04 J/cm²). After treatments, the specimens were prepared for scanning electron microscopic analysis (n=3). The SEM analysis showed that group LF presented superficial ablation of demineralized enamel and that the surface irradiation was not uniform. No significant morphological change was observed in group L6, whereas the images obtained for group L3 suggest an increase in porosity as compared to group C. It may be concluded that subablative parameters for Er:YAG laser, in defocused mode 3 and 6 mm, that can be applied on incipient carious lesions, without

causing surface damage were obtained.

Complete spontaneous regression of congenital epulis in an 8-month-old baby

Gurgel, C.V.; Santos, C.F.; Oliveira, T.M.; Sakai, V.T.; Machado, M.A.A.M.

This work reports the case of a 7-day old girl, who was referred to the clinic of pediatric dentistry of our institution because of the presence of a pedunculated mass protruding from the front of the mouth. The mass was attached to the maxillary alveolar ridge on the right of the midline, and was clinically diagnosed as a congenital epulis. The baby had no airway obstruction and was able to feed well. A conservative treatment was proposed, with monthly follow-up appointments to monitor the lesion. After 8 months, the lesion had completely regressed, preventing the girl from being exposed to unnecessary surgical procedures in her first few days of life. The eruption of the upper anterior teeth was not affected.

The dentist and the schizophrenic patient

Neto, J.S.E.A.; Marta, S.N.

Schizophrenia is a chronic mental disorder that appears during adolescence or adulthood. It is the most serious mental disorder and the main cause of psychiatric internments. It affects 1% of population without predilection for gender or race. The term schizophrenia was described by Bleuler in 1908 and means "splitting of the mind" or "shattered mind", characterized by disorganized thinking, and experiencing of delusions or hallucinations, without emotional responses with genetic and environmental factors. The most known types of this pathology are simple, hebephrenic, catatonic, paranoid, and residual type. The pharmacological therapy for schizophrenia is usually antipsychotic medication mainly to provide symptomatic relief from the positive symptoms of psychosis. The dental treatment for schizophrenic patients must consider the period of crisis manifestations and drug therapy. The choice for ambulatory dental treatment is the use of physical restraint because of the possibility of patient's crisis during the appointment. Furthermore, the dentist should be integrated in a multidisciplinary staff and aware of scientifically based information in order to offer an efficacious and safe treatment, aiming at the welfare and promotion of quality of life of these patients.

Esthetic space maintainer: a solution for premature loss of primary teeth

Gonçalves, C.C.; Sousa, K.R.; Costa, A.M.M.; Maia, S.A.; Almeida, M.E.C.

The premature loss of primary teeth by caries disease is very common in Brazilian children, which causes shrinking of dental arch and affect the balance of the stomatognathic system. This loss is an etiologic factor of occlusal dysfunctions. The prevention of this problem can be made with devices called space maintainers, which are able to preserve the occlusal integrity, keep the teeth in their positions and allow the eruption of permanent teeth. The objective of this work to demonstrate the importance of this device with the report of a case of a 4-year-old male patient that was treated at the Pediatric Dentistry clinic of the State University of Amazonas (UEA). The treatment of this patient included extraction of root remnants of primary teeth and fabrication of removable acrylic resin space maintainers. This was the best treatment option because esthetics and functional results were achieved and the patient's psychological conditions improved.

Effects of the low-power laser therapy on the activity of the MDPC-23 odontoblast-like cells

Oliveira, C.F.; Hebling, J.; Sacono, N.; Souza, P.P.C.; Lessa, F.C.R.; Costa, C.A.S.

The aim of this in vitro study was to evaluate the effects of the low-power laser therapy on the activity of odontoblast-like MDPC-23 cells regarding the total protein synthesis and expression of collagen type 1 (Col-1) and fibronectin (FN). Cells were seeded (1.5x10⁴ cells/cm²) on Petri dishes and submitted to stress by reducing the addition of fetal bovine serum into the culture medium. After 3 days, the GaAlAs-diode laser [Thera Laser, DMC Equipments Ltda; (λ)-830nm, (?)-0,6mm, (ñ)-90 mW, (D)-141.5 J/cm² and (°)- 4J] was applied (six application every 12-hour interval) at the bottom of the Petri dishes where the cells were attached (Group 1). In Group 2 (control) the cells were not irradiated. The total protein synthesis was evaluated in a spectrophotometer at 680 nm and the data submitted to the statistical analysis (Mann-Whitney). Col-1 and FN expression was evaluated by RT-PCR. GAPDH was used as control. In contrast to the data presented by several in vitro studies in which different cell lines were bio-stimulated by laser therapy, the MDPC-23 cells activated by laser irradiation did not show significant up-regulation of the total protein synthesis. The expression of Col-1 and FN was down-regulated by the laser therapy used in this investigation. Under the tested conditions, it was concluded that the parameters of the laser therapy used in this experiment bio-modulates the MDPC-23

activities by causing no changes in the synthesis of total proteins, but down-regulating the Col-1 and FN expression.

The presence of supernumerary teeth and its consequences

Matos, D.S.; Ricci, H.A.; Nogueira, I.; Abreu-e-Lima, F.

The mesiodens is most usual type of supernumerary teeth and it is located in the anteroposterior region, between the upper central incisors. In most cases, this tooth has a conical shape and short root and is embedded. This alteration is more prevalent in males and the mixed dentition is the most affected one. The presence of supernumerary teeth can be responsible for some deleterious effects for the patient, such as malocclusion, diastemas, root resorption of adjacent teeth, cystic degeneration and permanent tooth impaction. The purposes of this case report were to alert the clinicians about the consequences of the permanence of a supernumerary tooth and the proper treatment management. In the Pediatric Dentistry Clinic of the School of Dentistry of Araraquara (FOAr-UNESP-Brazil) the presence of an embedded mesiodens was detected radiographically in a 7-year-old male child with malocclusion and anterior diastema. The extraction was performed and orthodontic treatment was conducted for closure of the diastema created by the delayed detection of the mesiodens. Based on the case outcome, it may be concluded that the consequences of the permanence of a supernumerary tooth can be avoided when early diagnosis is performed.

Oral management of a child with mixed dentition affected by amelogenesis imperfecta

Menezes, C.C.; Moretti, A.B.S.; Sakai, V.T.; Oliveira, T.M.; Silva, S.M.B.; Machado, M.A.A.M.

Amelogenesis imperfecta is a hereditary developmental disorder affecting the deposition, calcification or maturation of dental enamel in both the primary and permanent dentitions. Patients usually present tooth sensitivity as well as problems in chewing function and esthetics. In addition, dissatisfaction with the tooth appearance is often found, affecting the patient's social life. Oral rehabilitation of children with primary or mixed dentition is complex, since no definitive treatment can be done during periods of growth and until the end of eruption of the permanent dentition. This clinical report describes the oral management of a 7-year-old girl with mixed dentition affected by AI. The patient showed accentuated tooth wear and root resorption, decreased occlusal vertical dimension, open bite and alteration in the sequence of eruption of the permanent teeth. Most of the teeth were restored with resin-modified glass ionomer cement. This approach markedly decreased the patient's dental hypersensitivity and improved functional chewing and esthetics. Positive psychological influence of the treatment on this patient was also observed.

Fluoride concentration in some commercially available fermented milks

Lodi, C.S.; Manarelli, M.; Delbem, A.C.B.; Sasaki, K.T.; Martinhon, C.C.R.

The increase in the consumption of industrialized beverages among children has increased the intake of fluoride ions in the age of fluorosis risk. The goal of this study was to evaluate the fluoride ion concentration in some fermented milks present in the national market and correlate them as a possible fluorosis risk factors. Three batches of 6 fermented skim sugared milks (Parmalat®-uva, Chamyto®, Paulista®, Batavito®, Yakult®, Vigor Club®) were investigated. Fluoride concentration was evaluated after facilitated microdiffusion by HDMS (Taves modified by Whitford method, 1996). Parmalat® products ranged from 0.0221gF/g to 0.0311gF/g, Chamyto® from 0.2281gF/g to 0.2721gF/g, Paulista® from 0.1821gF/g to 0.2201gF/g, Batavito® from 0.0281gF/g to 0.0301gF/g, Yakult® from 0.1151gF/g to 0.2061gF/g and Vigor Club® from 0.8081gF/g to 1.1711gF/g. No product had any specification about fluoride concentration on the label. In conclusion, all analyzed products had some fluoride ion concentration, which contribute to the increase of fluoride intake. The fermented milks evaluated in this study are risk factors to dental fluorosis, indicating the need of a larger control of their consumption.

Shear bond strength of adhesive systems to primary tooth dentin. Influence of Er:YAG laser energy variation

Frigeri, C.B.; Dibb, R.G.P.; Torres, C.P.; Silva, J.M.G.; Contente, M.M.M.G.; Oliveira, R.H.; Borsatto, M.C.

The objective of this in vitro study was to evaluate the influence of Er:YAG laser energy variation on the shear bond strength to primary tooth dentin. Thirty human were primary molars sectioned buccolingually and embedded in self-curing acrylic resin with the facial or lingual surfaces exposed. The specimens were ground wet to obtain flat dentin surfaces and randomly divided in groups, according to adhesive

systems used, Single Bond (SB) total etch adhesive and Clearfil Tri- S Bond (3S) self-etching adhesive, and according to type of preparation, conventional (high speed) and cavity preparation using Er:YAG laser (frequency 2Hz) with energy variation (mJ) as follows: I- conventional cavity preparation + 37% phosphoric acid etching, 10s + SB (control); II- conventional cavity preparation + adhesive system 3S (control); III- 200mJ + SB; IV- 200mJ + 3S; V- 250mJ + SB; VI- 250mJ + 3S. Using a split bisected polytetrafluoroethylene jig, the specimens were individually fixed in a metallic champing device and Filtek Z250 (3M) composite resin cylinders were fabricated for the shear bond strength test using a universal testing machine (50 kgf/0.5mm/min). Failure modes on fractured sites were determined using a stereomicroscope at 40x magnification. Data were analyzed statistically by two-way ANOVA and Fisher's test. SBS means in MPa were: 6.95 (+ -2.33); 10.72(+ -3.15); 4.14(+ -1.65); 10.06(+ -2.60); 5.38(+ -1.57) and 9.20(+ -2.41), respectively for groups I, II, III, IV, V and VI. Regarding the preparation mode, groups I and II had statistically significant better results than groups III, IV, V and VI. 3S showed higher means and significantly different from SB, independent of the mode preparation used. However, comparing energies of 200 and 250mJ, there was no statistically significant difference. It may be concluded that Clearfil Tri- S Bond had better values of adhesion to all preparations, either bur-cut or laser-irradiated.

Prevalence of white spot lesions in young children assisted in the Baby Clinic of the Dental School of Araçatuba/UNESP between 1996 and 2004

Alves, K.M.R.P.; Capucci, L.D.; Cunha, J.Z.; Cunha, R.F.

Dental caries is a multifactorial infectious disease, influenced by carbohydrate-rich diet and the action of saliva, resulting in gradual mineral loss and destruction of dental structure. Caries lesions restricted to enamel can be arrested by dental biofilm control, dietary changes and use of fluoride. The purpose of the study was evaluate the prevalence and the profile of white spot lesions in patients aged 0 to 4 years assisted at the Baby Clinic of the Dental School of Araçatuba/UNESP, São Paulo, Brazil, between 1996 and 2004. By dental record analyses, 191 children were selected. 746 cases of teeth with white spot lesions were found. The results showed that children aged 18-24 months had greater presence of white spot lesions (29.3%). 269 (36%) out of 746 teeth presented remineralized enamel and only 71(9.52%) turned into cavitation and that the primary left central incisors were more prevalent in both cases, respectively (16.36% and 22.53%). We concluded that it is important instruct parents with respect to diet and oral hygiene at the specific age of their babies (18-24 months) and that attending a prevention program lead to greater white spot lesion remineralization.

Art to evaluate special need patients' behavior during dental assistance

Alves, K.M.R.P.; Santos, M.J.P.; Aguiar, S.M.H.C.A.

This project proposes using art to condition special need patients' behavior during dental assistance at CAO. The behavior of 96 patients was assessed before and after participation in the activities using a questionnaire to check the viability of the project, behavior and level of neurological impairment. 48 patients were categorized with mild neurological impairment, 34 moderate, 13 severe and 1 profound. The project was viable for 97% of the patients, being described as calm (54%) and happy (40.6%). Patients' behavior during dental treatment indicated 19.6% as definitely negative, 24% negative, 9.4% definitely positive and 47% positive. A total of 56% demonstrated improvement resulting in favorable conditions for treatment (positive), 90.6% showed behavioral improvement with some significance and 87.5% were in favorable conditions of treatment (positive and definitely positive). The use of art as a process of adaptation and conditioning patients with special needs was proven as helpful for their dental assistance.

How to manage the lack of children's cooperation during dental treatment

Costa, L.S.T.; Possobon, R.F.; Carrascoza, K.C.

The use of strategies of handling the behavior in Pediatric Dentistry allows the establishment of an adequate dentist-patient relation, which contributes to reduce dental anxieties and fears. This work reports the case of a 57-month-old male child who did not allow the dentist working during preventive dental care sessions. He presented extreme cry, hand on the mouth, avoiding clinical examination, physical and verbal aggression directed to the mother and dentist. These manifestations also occurred at home at toothbrushing time, according to mother's report. The treatment approach was to set appointments to the child for programmed sessions of handling of behavior. The strategies used were: a) Modeling: the sessions were programmed so that the dentist reached one definitive objective, with full cooperation of the child, coming close themselves, to each session, of the final objective (clinical examination/toothbrushing); b) Distraction: use of common toys or with dental reasons, having the goal to increase the dentist-child interaction; c) Positive reinforcement: by compliments, gifts and playful activities. After 4 sessions, the

child was fully collaborative, allowing in-office clinical examination and professional oral hygiene and at-home toothbrushing and oral hygiene.

Healing effect of *Mentha viridis*: experimental and clinical studies

Assunção, L.R.S.; Santos, M.J.P.; Elias, G.P.; Aguiar, S.M.H.C.A.; Felipini, R.C.; Silva, C.A.

In the last decades, the use of phytotherapeutic products has increased due to their pharmacologic efficacy presented in several diseases. Antibacterial, analgesic, antiseptic, antiinflammatory, antiviral and immunomodulatory effects have been attributed to *Mentha piperita*, specie of mint commonly cultivated in Brazil. However, there are no studies about the effects of *Mentha viridis* (Mv), a plant belonging to the same family of *Mentha piperita*. The aim of the present study was to evaluate the effect of Mv on the healing process of herpetic and aphthous lesions in humans, and dorsal cutaneous wounds in Wistar rats. A carbopol gel added with 5% of Mv extract was applied onto the lesions and cutaneous wounds. For the control group, the natural extract was not incorporated into the gel. The effect of the treatment was evaluated by clinical analysis in humans and by macroscopic and histological analyses in the animals. The clinical results demonstrated that the premature application of Mv inhibited the herpetic vesicle formation, decreased the burning pain associated with the lesions and accelerated the wound healing process. In the animals (n=7/group), the effect of Mv was observed at three treatment periods (1, 4 and 7 days) and the preliminary results of the macroscopic and histological analysis showed that Mv also accelerated wound healing. These results suggested that Mv can be a therapeutic option for treatment of oral lesions, with analgesic, anesthetic and healing effects. The mechanisms that are involved in these effects should be evaluated by additional studies.

Radiographic diagnosis of a large occlusal caries judged to be an incipient pit-and-fissure lesion

Tessarolli, V.; Sakai, V.T.; Oliveira, T.M.; Moretti, A.B.S.; Silva, S.M.B.; Machado, M.A.A.M.

The treatment of a large dentin caries, which seemed to be a small pit-and-fissure carious lesion on the occlusal surface of a permanent mandibular right first molar in a 6-year-old boy, is presented. The treatment included root canal filling and the sealing of the cavity with composite resin. Underlying periodontal tissue healing could be radiographically observed at the 14-month follow-up. Therefore, it is possible that a better visual examination, with careful cleaning and drying of teeth, may improve occlusal caries detection. Dentists should examine bitewing radiographies carefully for occlusal demineralization. As radiographs are an effective method of lesions caries diagnosis, they should be recommended at appropriate ages to aid early detection of these lesions.

Pediatric dental approach for patients in the early childhood

Peres, J.A.; Gomide, M.R.; Neves, L.T.

In early childhood, children are involved in an active process of evolution and their behavior in the dental clinic is determined by a series of factors, such as age, maturity, dentist's approach and previous experiences. The pediatric dentist, with psychological knowledge of the different stages of children development, should analyze and indicate the most effective methods for behavior management and psychological preparation. During early childhood, the manifestations of dental anxiety can assume several forms, such as crying, refusal to enter the room or open the mouth, shaking hands or screaming. In this age range, techniques with physical restraint are usually necessary to contain improper movements during dental treatment and may be active or passive. After 18 months of age, language techniques as tell-show-do can be used with an appropriate vocabulary. The goal of child conditioning is to present the dental environment and to show that the procedures to be performed are not associated with pain or discomfort. The objective of this work is, by a literature review, to address the most common behaviors and different management techniques used for the 0-3-year-old age group aiming at adaptation of the child to the dental care.

Correction and prevention of Class III malocclusion in an early treatment: a case report

Chaves, J.M.V.S.; Silva, S.M.B.; Abdo, R.C.C.; Eleutério, A.S.L.; Machado, M.A.A.M.

The application of the Planas Direct Tracks concept and technique may represent an interesting tool for the early treatment. This is a very strong tendency among clinicians. When perfectly understood and applied, the neuroocclusal rehabilitation reorients growth to a morphological normalization. In the beginning, the class III

can be defined as a functional reflex of an anterior position of the mandible, which without proper treatment of the malocclusion, will induce dental, neuromuscular and skeletal deformities. The result is a modified size and shape of the respective skeletal units. There are still great controversies about when is the best moment to start the class III treatment. The eruption of the primary incisors establishes an important period of development. A good treatment starts with a good clinical interview. The purpose of this study is to report a case in which a baby (class III patient) was successfully treated with Planas Direct tracks in early primary dentition. The case illustrates the importance of the early diagnosis. Although more studies are needed to determine the effects of the early treatment in the human primary dentition, the results suggest that the Planas Direct Tracks can be optimal in preventing malocclusions.

Influence of beverages usually consumed by children on enamel microhardness of primary teeth: in vitro evaluation

Gonçalves, S.C.D.; Dibb, R.G.P.; Torres, C.P.; Silva, J.M.G.; Contente, M.M.M.G.; Oliveira, R.H.; Borsatto, M.C.

This in vitro study evaluated the influence of a lemon soft drink (Sprite®), a soy-based apple juice (Ades®) and a strawberry juice (Kapo®) on the superficial enamel microhardness of primary teeth influenced by time. Forty crowns of primary incisors put on acrylic bases with the buccal surface exposed (3mm) were divided in four groups (n=10), according with the tested solutions and control group, where the specimens stayed in artificial saliva. After measurement the initial microhardness, immersion cycles were undertaken with 75 mL of solutions, 3 times a day, with intervals of 4 hours during a total period of 60 days. The microhardness were measured 7, 15, 30, 45 and 60 days of repetition of these cycles by a pyramidal Knoop indenter (50 gf, 10 seconds and 5 indentations). After each immersion/agitation cycle, the specimens were washed and kept 37°C in 15 mL of artificial saliva with daily changes until the next cycle. Data were submitted by ANOVA with solution and time as the factors. Regarding the solutions, Sprite® presented the greatest microhardness variation, being statistically different from others groups. For the factor time, there was progressive loss during the studied periods. Regarding time/solution interaction, Sprite® varied 81.55% in 60 days. We concluded that all beverages produced gradual and significant alteration on superficial microhardness in all evaluated periods. However, Sprite® altered the enamel in a more accentuate manner. Saliva presented a gain of superficial hardness until 30 days (p<0.05), diminishing and stabilizing on the initial values.

Treatment of dental anomalies in pediatric dentistry: surgical and psychological aspects

Caruso, R.G.G.; Oliveira, C.S.B.M.; Oliveira, A.L.B.M.; Rosell, F.L.

The oral surgery applied to children, works with the same basic principles as the one applied to adults, but some differences must be considered, like the techniques applied during the surgery (do to the size of the oral cavity, localization of inferior alveolar nerve, dentition phase, presence of the permanent tooth germ, amount, type and injection of local anesthetics) or techniques used while handling psychological limitations of the child. Some anomalies detected during childhood, like root dilaceration, supernumerary teeth or dental ankylosis, are commonly associated with delayed or absent eruption of permanent teeth. In addition, a detailed clinical interview, clinical exam and correct evaluation of the radiographs are fundamental for the diagnosis and choosing of the correct treatment. The purpose of this study was to address the main clinical and psychological aspects of surgery in pediatric dentistry. Three different cases are presented (ankylosis of tooth 54; supernumerary teeth in the anterior region; root dilaceration of tooth 11) to aid the understanding of these aspects, in addition to showing the complications and consequences that can be generated by the permanence of these alterations in the oral cavity.

The autistic patient in the dental office

Sant'Anna, E.; Chiacchio, V.; Castilho, A.R.F.; Marta, S.N.

Autism or developmental disorder is a disturbance of complex behavioral development with multiple etiologies and varied degrees of severity. Bleuler used the expression "autism" for the first time in 1911, to assign the loss of the contact with the reality that was caused by difficulty or impossibility of communication. The autism is the third more prevalent developmental disorder. It affects around 40 to 130 individuals for every 100,000 live born. The behavioral manifestations include deficiency in the social interaction and communication, repetitive and stereotypical behavior, and restriction of interests and social activities. The difficulties in social interaction are described as isolation or improper social behavior; poor visual contact; difficulty in participating of in-group activities; affective indifference, and lack of social or emotional empathy. When these individuals become adult, there is an improvement of the social isolation. The diagnosis of autism and its related disturbances depends

on the clinical evaluation of multidisciplinary staff and the use of objective scales, such as Childhood Autism Rating Scale (CARS). The management of autistic people by dentists requires an interdisciplinary intervention because the social-cognitive deficits and behavioral problems interfere with the integration of these patients in the dental office. Moreover, many of the autistics take neuroleptics and antipsychotic drugs, and there is the risk of convulsions during dental care. The prognosis of autism is changeable and is related to the patient's level of abilities, demonstrated in cognitive and language tests. Thus, the acquaintance of dentists with autism could favor the management of autistic patients during the dental treatment.

Orthodontics

Indirect bonding of brackets: simplified technique

Magno, A.F.F.; Porto, C.H.S.; Martins, R.P.; Martins, L.P.

Indirect bonding has several advantages over direct bonding in the orthodontic practice, such as improved precision in positioning of brackets, reduce chair time and, therefore, less stress to the orthodontist. Most traditional techniques are not used due to the cost, laboratorial time and because specific materials must be used for the production of the tray and bonding of the brackets. The aim of this work is to demonstrate a technique for indirect bonding focused on low cost and simplicity. The materials used are soluble glue, brackets, Vaseline, hot glue pistol, hot glue and adhesive. The brackets are bonded to the model with the soluble glue and painted with Vaseline before the hot glue bonding tray is made. The tray is then removed and soaked in water for removal of the soluble glue. At that time, the brackets are ready to be transferred to the mouth. This simplified technique of indirect bonding allows a correct and precise positioning of brackets. The procedure for indirect bonding became simple and accessible to all professionals with the use of the hot glue. This is due to the low cost and transparency of the hot glue, allowing the use of any kind of adhesive. Also, its good usability simplifies the laboratorial procedures.

Space closure using the segmented arch technique: fabrication and clinical use of T-loop spring for type A anchorage

Maia, S.A.; Meloti, A.F.; Goes, D.R.; Amaral, R.M.P.; Raveli, D.B.

The segmented arch technique uses an efficient device for orthodontic space closure called T-loop spring. This device develops a precise force system with control of tooth movement, delivering light continuous forces to teeth and optimizing their movement. The force system produced by a T-loop spring consists of several components: the alpha moment, the beta moment, horizontal forces, and vertical forces. Differential moments to anterior and posterior units are used for obtaining differential anchorage (A, B and C), differential tooth movement. Differences on preactivation bends and position of spring produce differential moments. In type A anchorage, the anterior unit (Alpha) moves by controlled tipping, with subsequent root movement and the posterior unit (Beta) is kept stable with translation. This poster board demonstrates how T-loop spring was fabricated with preactivations to type A anchorage and their clinical use.

Orthopedic treatment of class III malocclusion with rapid maxillary expansion (RME) and face mask

Guirro, W.J.G.; Pieri, L.V.; Henriques, R.P.; de Freitas, M.R.; Janson, G.R.P.; Henriques, J.F.C.

Class III malocclusion appears precociously and is complex to diagnose and treat, mainly in the mixed and primary dentitions. The ideal approach is to reach a positive horizontal overlap until the succession of the permanent upper central incisors associating rapid maxillary expansion with face mask therapy advancing the maxilla and its dentition from 1 to 2 mm, mandible clockwise rotation with more upward-forward direction in the mandibular condyle growth (in the early mixed dentition) and lingual inclination of the lower incisors. Activate the expansion screw 2/4 turn (twice a day) until the evidence of the median palatal suture opening (8-10 days) by the maxilla/anterior diastema occlusal radiograph, continue with ¼ turn/week (when no maxillary expansion is required) or ¼ turn/day until overcorrection with the palatal cusps of the upper posterior teeth touching the buccal cusps of the lower posterior teeth. The capping of the upper posterior teeth avoids undesired opening of the bite in the vertical pattern. The face mask is adapted and associated with the vestibular hooks of expander by means of bilateral elastics (3/8 inch in the first two weeks, than ½ inch and 5/16 inch) for the traction. The face mask is used full-time, except at school, until obtaining a 4-5mm positive horizontal overlap, and additional 6 months just for sleeping. Remove the expander appliance (band splitting plier) and the resin inside, and wear it as a full-time removable appliance, until the handing over the retainer appliance (impression took after one week), otherwise, the expansion

will be lost rapidly. Use the FR-3 as a retainer (whenever has residual growth) or put fixed appliance if necessary. This association is an option in Class III malocclusion treatment in the mixed and primary dentitions and the last attempt to avoid orthognathic surgery in early permanent dentition, with greater craniofacial adaptations in early mixed dentition.

Use of reverse lip lumber on early class II malocclusion treatment, subdivision with mandibular asymmetry

Grehs, B.; Pinto, A.S.; Grehs, R.A.; Pinto, L.A.M.S

This study aimed at evaluating the efficiency of reverse lip lumber on the asymmetry treatment of patients with Class II division 1 malocclusion, subdivision with mandibular problems corroborated through extraoral submental-vertex radiographs. The sample comprised 23 selected 8-11-year-old children at mixed denture phase, evaluated for a period of 12 months. Reverse lip lumber and unilateral elastic on the side of the asymmetry were used. The angular and linear measurements obtained from radiographs by means of the Radiocef program were submitted to statistical analysis using Student's t-test, Snedecor "F" test, and the Mann-Whitney-Wilcoxon non-parametric test. According to the results, 75% of the treated cases presented Class I dental relationship on the side of the asymmetry. The studied cephalometric variables showed mandibular rotation when maxilla and mandible were related. There was jaw repositioning showing the orthopedic effect of the appliance, and normalization of dental midline, but statistically significant tooth movements were observed. It may be concluded that the use of the reverse lip lumber system caused a statistically significant mandibular rotation.

Effects of low-level laser therapy irradiation on bone regeneration on midpalatal suture during rapid palatal expansion: literature review

Alencar, C.J.F.; Carvalho, D.S.; Filizzola, L.B.

The purpose of this study was to contribute to the application of low intensity laser in Orthodontics. We have revised the pertinent literature about the effects of low-power laser irradiation on bone regeneration during expansion of midpalatal suture. After revision, it may be concluded that low-level laser therapy (LLLT) with Ga-Al-As diode laser irradiation can accelerate bone regeneration in midpalatal suture during rapid palatal expansion and that this effect is dependent not only on the total laser irradiation dosage, but also on the timing and frequency of irradiation. The analgesic effects also contribute to the orthodontic treatment. Although further studies are still required, it may be suggested laser therapy may be of therapeutic benefit in inhibiting relapse and shortening the retention period by acceleration of bone regeneration and greater mineralization in the midpalatal suture.

Rapid maxillary expansion for passive eruption, mesiodens extraction and surgical traction of the tooth 21

Henriques, R.P.; Pieri, L.V.; Freitas, M.R.; Janson, G.R.P.; Henriques, J.F.C.

Supernumerary teeth are an anomaly of number due to hyperactivity of the dental lamina, local and genetic causes, being present in congenital dental anomalies. They occur in the maxilla and mandible, isolated or multiple, unilateral or bilateral, with malformation or normal size and shape. They rarely occur in the primary dentition. The prevalence is of 1% being males more affected than females (2:1), 90% to 98% occur in the maxilla, 90% in the premaxilla between the upper central incisors (mesiodens), on vertical, inverted or transverse positions, irrupted or impacted. Supernumerary teeth can stay during many years in the mouth without pathological consequences. The diagnosis is clinical and/or radiographic (Clark's technique in the maxilla; occlusal technique in the mandible). They can be detected precociously even in 5-7 year-old children. Supernumerary teeth could be removed when they interfere with the eruption of a permanent tooth, occlusion and esthetics. The radiographic follow-up is essential. An invasive surgical procedure of supernumerary tooth removal is not always necessary. It is only indicated when the adjacent teeth have their complete roots to avoid interrupting their formation due to the proximity of both. Ulotomy and orthodontic mechanics of leveling and/or orthodontic traction allow the supernumerary irruption becoming a simple extraction. This work reports the case of a 7 year-old boy with a mesiodens. He underwent only rapid maxillary expansion (RME) and radiographic follow-up by means of periapical and panoramic radiographic surveillance up to passive mesiodens eruption. RME provided an eruption corridor for the mesiodens, which, by its active eruption force, had a passive eruption, allowing a simple extraction and the surgical traction of the impacted tooth 21.

Surgically assisted rapid maxillary expansion: case report

Goes, D.R.; Dib, L.P.S.; Maia, S.A.; Meloti, A.F.; Amaral, R.M.P.; Raveli, D.B.

The treatment of severe maxillary transverse discrepancies, in adults, requires the surgically assisted rapid maxillary expansion (SARME), in such a way that the upper arch form may be corrected. Surgery makes possible the correct angulation and tipping of the teeth in their corresponding osseous bases, and provides a harmonic relationship between the dental arches. The purpose of this work is to present the case of a female patient, aged 33, presenting Angle Class I malocclusion, anterior open bite associated with skeletal posterior bite, tapered upper arch form, in addition an increased anterior facial height. SARME was indicated as an auxiliary means to fixed appliance orthodontic treatment, aiming at the correction of maxillary skeletal deficiency and the correct positioning of teeth in both dental arches. The expander utilized was the Hyrax-type, and the activation protocol was of a quarter turn, two times a day, for 14 days. After SARME, it was observed the correction of maxillary skeletal deficiency in the transverse direction with improvement of upper arch form (ovoid), making possible the correct alignment of the teeth and a harmonic anteroposterior relationship of the jaws.

Treatment of Angle class II division 2 with Pendex distalization appliance: a case report

Herrera, F.S.; Henriques, R.P.; Pieri, L.V.; Freitas, M.R.; Janson, G.R.P.; Henriques, J.F.C.

The Pendex intraoral distalization appliance is a modification of the Pendulum appliance (without expansion screw) introduced by Hilgers in 1992. It constitutes a treatment option for dentoalveolar Class II malocclusion with upper molar mesialization until ½ of premolar cusp, small overjet, severe deep bite on brachyfacial and mesofacial growth patterns. It is indicated in Class II Division 2 for upper molar distalization and simultaneous upper incisor proclination avoiding dental extractions mainly on brachyfacial patients with short lower anterior facial height (LAFH). It has advantages of easy confection, good acceptance and little patient compliance providing good results. It is constituted by an acrylic base plate with palatal anchorage; an expansion screw in the midline for lateral adjustments avoiding crossbite in the molar area; occlusal rests at first and second premolars on each side; and two .032" TMA springs parallel to the midline, at the level of the upper molar center of resistance. The activation of the springs parallel to the palatal midline at installation provides from forces of 200 to 250g on each side. Its greater disadvantage is more distalization of molar crowns than their roots requiring overcorrection and maximum anchorage (Nance button, headgear at night) immediately after removing the Pendex for retraction of the anterior teeth. There is a buccal inclination of the upper incisors. Class I molar relationship is established within 5.5 months on average. This work presents Angle Class II Division 2 case treated by Pendex.

The MARA appliance: a new option of Class II malocclusion treatment

Storniolo, J.M.; Chiqueto, K.; Janson, G.R.P.; Estelita, S.; Vieira, L.S.; Henriques, J.F.C.

The MARA (mandibular anterior repositioning appliance) is a fixed functional orthopedic appliance indicated to correct skeletal Class II malocclusion. It is formed by four stainless steel crowns which are cemented on first molars. Elbows of square stainless steel wire are fitted on maxillary crowns and keep the mandible advanced due to a mechanical interference with the mandibular arch; however, no fixed connection is established between the arches. This case report describes the MARA application in a 13-year-old girl, who initially presented a Class II malocclusion with deep overbite and accentuated overjet. After ten months, anteroposterior relationship, overbite and overjet corrections were obtained. The effects of the appliance were essentially dental with maxillary molar distalization, mandibular molar mesialization and mandibular incisor inclination to vestibular and protrusion. No maxillary changes occurred, but there was an increase on mandible length and on anterior and posterior facial heights. The advantages of MARA appliance are: it is fixed, so it is a non-compliance appliance and allows a quicker treatment than those with removable appliances; its handling is easy; it allows a gradual mandible advance; it can be used with other appliances; and it is comfortable to the patient due to the smaller size when compared to other functional appliances.

Treatment effects of Class II malocclusion associated with jasper jumper for anchorage

Salles, D.S.L.; Goes, D.R.; Dib, L.P.S.; Raveli, D.B.; Maia, S.A.

The Jasper Jumper appliance was idealized in 1987 by James Jasper with the aim of reproducing the mechanism of the Herbst appliance, however with the advantages of being flexible, of easy installation, more hygienic and allowing a larger freedom

of mandibular movement. It is one of the resources for correction of Class II malocclusion. This study report a case of a 16-year-old black female patient submitted to an orthodontic therapy with 4 premolar extractions. Jasper Jumper was used to aid in the treatment, providing anchorage reinforcement for closing of the spaces left after extractions. This is a mechanical alternative for the treatment of Class II malocclusions, where the control of the spaces is necessary for a correct treatment completion. Alterations were not observed on the maxillary and mandibular development. There were no changes in the craniofacial growth and dental alterations with discreet anterior inclination of the lower incisors. In the present case, the dentoalveolar alterations were favorable to malocclusion correction, demonstrating the viability of Jasper Jumper appliance use as anchorage when properly indicated.

Activator-headgear combination – clinical applications, effects and action mode

Valarelli, D.P.; Pieri, L.V.; Freitas, M.R.; Henriques, R.P.; Janson, G.R.P.; Henriques, J.F.C.

The headgear combination is a removable mechanical orthopedic appliance in which the headgear and the activator constitute a single block. This leads to muscle harmony, which influences both function and mandibular position, transferring forces to the apical bases and teeth and altering the position of the maxilla, mandible and teeth in 3 directions of space (horizontal, lateral and vertical), which results in significant orthopedic and/or orthodontic changes. It is indicated in the treatment of Class II, Division 1 malocclusion with maxillary and/or dentoalveolar protrusion, with slight maxillary constriction associated with mandibular retrusion in growing patients, mainly with vertical pattern. The mandibular advances by the wax bite are slow (4 mm *per* time) with posterior opening of 3mm for better biologic response. In the last advance, the incisors are led to edge-to-edge for deep bite correction, correcting skeletal median line and not dental median line deviations. The expansion screw is activated (¼ turn/month) for lateral adjustments between maxilla and mandible. The individual normal forces are from 350 to 600g with ½ inch elastics. The selected adjustments at the lower posterior region correct the curve of Spee. The treatment effects are: restriction of anterior maxillary displacement; significant mandibular protrusion; improvement in the maxillomandibular relationship and in convexity with reduction of ANB and NAP angles, maintenance of growth pattern with redirection of growth to a less vertical direction, palatal inclination of upper incisors without changes in the lower incisors; distal movement and slight "intrusion" of upper molars and mesial movement and significant extrusion of the lower ones; maintenance of nasolabial angle (NLA); passive contact of lips; return to normal breathing.

Lingual Orthodontics: another option for adult treatment

Amaral, R.D.P.; Gandini, M.R.E.A.; Goes, D.R.; de Mello, P.B.; Junior, L.G.G.

Lingual orthodontic treatment is an alternative to traditional treatment designed to malocclusion correction and tooth alignment in patients with high esthetic requirements, who refuse to use labial brackets. The clinical results achieved are similar in both techniques (labial and lingual). For the patient, lingual appliances have several advantages over labial appliances: the damage to buccal surfaces of teeth, buccal gingival hypertrophy or gingivitis, and better visualization of tooth alignment. Lingual treatment has some disadvantages as well: significantly longer chairtime and report of speech problems and tongue irritation. However, the advances in technology have changed the appliance design and laboratory protocols, simplifying the technique, with more accurate treatment completion, enhanced patient comfort and increased acceptance by orthodontists and patients alike.

Coincident x-ray and drill paths ensuring safe mini-implant placement

Barros, S.E.C.; Chiqueto, K.; Freitas, M.R.; Janson, G.R.P.

The interradicular septum is one of the most commonly used locations to insert mini-implants when a complete dentition is present. However, the risk of damage to adjacent dental roots must always be considered due to restricted bone availability. Although two-dimensional surgical guide has been used to determine safe implant site, the screw path in the septum can only be guided by a three-dimensional surgical guide. Nevertheless, even when three-dimensional surgical guide is used, the screw path into the bone cannot be safe if this guide does not allow a standardized link between radiographic and surgical procedures. Therefore, this study presents a three-dimensional radiographic-surgical guide that ensures an exact correspondence between radiographic and surgical procedure, making the x-ray and drill path coincident. It may be concluded that the use of the three-dimensional radiographic-surgical guide to orient both the radiographic and surgical procedures ensures that the drill path will be coincident to the safe x-ray path, observed on presurgical radiograph, minimizing the risks of damage to anatomical structures.

Treatment of class III malocclusion with facial mask and dental compensation

Gomez, S.P.P.; Ravelí, T.B.; Maia, S.A.; Ravelí, D.B.

Class III malocclusion could be defining as a facial skeletal discrepancy that cause morphological and functional distortions to the patient with growth. Orthodontic treatment has been frequently indicated to eliminate primary etiological factors and to avoid that an already installed malocclusion becomes more serious. The elimination of occlusal discrepancies, such as anterior and posterior crossbite, unilateral or bilateral, and correction of skeletal dysplasia represent the real need of intervention in these cases. Actually, more than 60% of the cases of Class III malocclusion present a maxillary involvement, needing some protraction form for correction. The maxillary expansion and the therapy with facial mask, used in Class III malocclusion, have been used with success in the last years. The aim of this work is to present a case where this treatment approach was used and obtained favorable outcomes.

Radiographic control of lower canines between mixed and permanent dentitions: report of three cases

Garcia, P.; Fernandes, T.M.F.; Sathler, R.C.; Pinzan, A.

The ideal orthodontic treatment must involve the observation and, if necessary, the management of the occlusal alterations from the primary to permanent dentitions. As a basic rule, the orthodontist should evaluate the physiological root resorption process in the period of transition from the mixed to the permanent dentitions. Physiological root resorption occurs as a natural and programmed phenomenon and results in the exfoliation of the primary teeth. An alteration in this process may result in establishment of a problem such as: malocclusion, impaction, resorption of adjacent teeth and cystic formation. The permanent canines have an important role for the esthetics of the smile and the masticatory function and are the teeth that most frequently display anomalies of eruption, after the third molars. For these reasons, it is important to the orthodontist to scrupulously diagnose an ectopic eruption pathway of the canines using clinical and radiographic data, in an attempt to prevent the retention of these teeth. The knowledge of the chain of events and alterations in the physiological resorption process will make possible to intervene, either speeding up or arresting, depending on the case. The purpose of this work is to present three cases and how the radiographic follow up, the early diagnosis and the interceptive approach can influence the adequate eruption of the lower permanent canines.

Class II treatment efficiency propitiated by fixed functional appliances

Pereira, A.F.; Barros, S.E.C.; Chiqueto, K.; Janson, G.R.P.; Henriques, J.F.C.

The success of Class II treatment with removable functional appliances depends mainly on patient cooperation, among other factors. Thus, fixed functional appliances that cause desired skeletal changes to Class II correction and eliminate the patient cooperation need have been developed. Moreover, these appliances allow the installation of fixed orthodontic appliances, joining both stages (orthopedic and orthodontic) in only one phase, making the treatment faster. Then, this literature review shows the most investigated fixed functional appliances, demonstrating their main characteristics and cephalometric effects. The fixed functional appliances evaluated were: Herbst, MPA (mandibular protraction appliance), Jasper Jumper and MARA (mandibular anterior repositioning appliance). It was observed that skeletal and dental changes induced by functional appliances are intensely discussed in the literature and the studies are unanimous on affirming that these appliances correct Class II malocclusion by increase of mandibular length, maxillary growth restraint, lingual inclination of maxillary incisors and buccal inclination of mandibular incisors. It may be concluded that the fixed functional appliances are efficient because they propitiate Class II correction in a shorter treatment time and do not depend on patient cooperation.

Orthodontic-surgery retreatment in a patient with TMJ ankylosis: case report

Oliveira, L.G.F.; Mazotinni, R.; Ribeiro, T.T.C.

The ankylosis of temporomandibular joint (TMJ) can be described as an impossibility of normal mandibular excursion by injury to the TMJ or its surroundings. Ankylosis can occur due to several pathologies, but has as main etiologies trauma and infection. The diagnosis is made based on clinical and image exams. Ankylosis interferes with the condylar growth center and causes facial deformities that are more severe as early as it has been installed in childhood. The aim of this work is report the case of a 21-year-old female patient with recurrent true left TMJ ankylosis of traumatic etiology, previously submitted an orthodontic-surgery with a costochondral grafting. The patient was submitted an orthodontic-surgery retreatment to correct the vertical discrepancy of third lower face and the dental relation and to restore the mouth opening. The physical therapy was an auxiliary resource in the postsurgical stage. Case evolution has shown functional rehabilitation and esthetic improvement, thus

providing a better social acceptance to the patient.

Biomechanical differences between lingual and labial orthodontics

Monini, A.C.; Peixoto, A.P.; Junior, L.G.G.

Because of its essentially esthetic characteristic, the lingual orthodontics has attracted the interest of orthodontists and general population. The increase of the beauty market in several segments (medicine, dentistry, cosmetics, etc) influenced the reappearance of lingual orthodontic treatment. Due its mechanical differences from buccal orthodontics, lingual orthodontics requires a special knowledge and training of the orthodontist. The objective of this work was, as part of the process of professional improvement and training, to review the literature and describe the main differences between both techniques, confirming the lingual approach as a safe option of orthodontic treatment.

Case report comparing the skeletal maturation stages of hand-wrist with cervical vertebrae

Meloti, A.F.; Maia, S.A.; Góes, D.R.; Amaral, R.M.P.; Pinto, A.S.

In order to achieve success in the orthodontic treatment of malocclusions with skeletal involvement, it is important that the treatment is done during a period of spurt of puberty growth (SPG). This SPG occurs within two years and it reflects the time of larger development and maturation of the craniofacial dimensions. There are several biological indicators utilized to identify the growth stages of an individual, the skeletal hand-wrist maturation being the most reliable. However, this method requires a specific radiograph that exposes the patient to an extra dose of radiation, whereas the lateral cephalograms are routinely requested in orthodontic documentation and allows cervical vertebrae observation, which is another indicator of skeletal maturation. The purpose of this study was to compare these two methods by reporting a case that showed simplicity and, to a certain extent, reliability in identifying the cervical vertebrae maturation stages. Hand-wrist radiographs and cephalograms of the same patient were utilized to correlate the hand-wrist maturation stages to those of cervical vertebrae. It was observed a great correlation between both methods, the analysis of cervical vertebrae being a feasible option to evaluate the patient's maturation stage. In conclusion, the identification of the cervical vertebrae maturation stages not only allows less exposure of the patient to radiation, but also presents as a simple, economically advantageous and efficient method for the diagnoses and planning of orthodontic treatment.

Rapid maxillary expansion (RME) associated with mesiodens eruption and surgical traction of tooth 21

Pieri, L.V.; Spin, M.D.; Freitas, M.R.; Janson, G.R.P.; Henriques, R.P.; Henriques, J.F.C.

Supernumerary teeth are an anomaly of number due to hyperactivity of the dental lamina, local and genetic causes, being present in congenital dental anomalies. They occur in the maxilla and mandible, isolated or multiple, unilateral or bilateral, with malformation or normal size and shape. They rarely occur in the primary dentition. The prevalence is of 1% being males more affected than females (2:1), 90% to 98% occur in the maxilla, 90% in the premaxilla between the upper central incisors (mesiodens), on vertical, inverted or transverse positions, irrupted or impacted. Supernumerary teeth can stay during many years in the mouth without pathological consequences. The diagnosis is clinical and/or radiographic (Clark's technique in the maxilla; occlusal technique in the mandible). They can be detected precociously even in 5-7 year-old children. Supernumerary teeth could be removed when they interfere with the eruption of a permanent tooth, occlusion and esthetics. The radiographic follow-up is essential. An invasive surgical procedure of supernumerary tooth removal is not always necessary. It is only indicated when the adjacent teeth have their complete roots to avoid interrupting their formation due to the proximity of both. Ulotomy and orthodontic mechanics of leveling and/or orthodontic traction allow the supernumerary irruption becoming a simple extraction. This work reports the case of a 7 year-old boy with a mesiodens. He underwent only rapid maxillary expansion (RME) and radiographic follow-up by means of periapical and panoramic radiographic surveillance up to passive mesiodens eruption. RME provided an eruption corridor for the mesiodens, which, by its active eruption force, had a passive eruption, allowing a simple extraction and the surgical traction of the impacted tooth 21.

Functional posterior crossbite

Soares, M.S.; Amaral, R.; Junior, L.G.G.; Monini, A.C.

Crossbite is a malocclusion characterized by an incorrect buccolingual relationship of the teeth. This problem could occur in the anterior and posterior region, the posterior being uni or bilateral. The crossbite can involve dental or skeletal components; when there is only dental involvement, it is considered as a dental crossbite; when there is bone involvement, it is considered as a skeletal crossbite. Occasionally, there may be a functional component. In these cases, there is usually occlusal interference in the canine region causing a difference between centric relation and maximum intercuspal position. In the primary dentition, this malocclusion usually starts on the primary canines; these teeth can have an edge-to-edge occlusion, with non-coincident centric relation and maximum intercuspal position because the mandible tends to deviate anteriorly or laterally in an attempt to provide comfort during function. This work reports a case in which the patient presented dental posterior crossbite with functional involvement. The proposed treatment was to try to remove the occlusal interference of primary canines using a wood spatula, but the patient did not cooperate with this conservative treatment. So, the option was canine grinding and installation of a removable appliance with inclined plane associated with the expansion screw. This treatment promotes crossbite correction and has a mean duration of one year. Posterior crossbite is not a self-corrected problem. It should rather be early corrected in the primary dentition, whenever as possible, because the persistency of this malocclusion may produce severe complications to the normal facial and dental arch growth and developmental processes, promoting facial asymmetry and functional problems.

Treatment of anterior dental crossbite

Cornélio, A.L.G.; Amaral, R.; Junior, L.G.G.; Monini, A.C.

Anterior dental crossbite is a Class I malocclusion that results from abnormal axial inclination of the position of the upper and/or lower teeth and it is a local problem that affects only teeth; so the maxilla and mandible are in normal sagittal relation. The most common etiological factor involved in anterior crossbite is the lack of space in the arch for eruption of the permanent incisor. As the incisors are formed and developed lingually of the primary teeth, they are forced to remain in a lingual position. Two cases of dental anterior crossbite are presented. In both cases, a conservative approach was the first option, such as the use of a wooden spatula in the upper right central incisor, in order to move the tooth buccally, but this technique requires maximum patient cooperation and it was not achieved. Therefore, it was decided to switch to a removable orthodontic appliance with digital spring. In both cases, treatment success was reached within few months, showing that, when the malocclusion is diagnosed and intercepted at an early stage, the patient can have normal occlusal development, which proves the efficacy of the preventive and interceptive treatments by using a simple appliance, with short treatment duration and low cost.

Efficacy of early treatment of transverse and vertical dysplasias: considerations and case report

Rocha, C.A.; Janson, G.R.P.; Freitas, M.R.; de Castro, R.C.F.R.

The aim of this work is to present the case report of a patient with Class I malocclusion, posterior crossbite, anterior open bite and severe crowding of maxillary and mandibular incisors. Tooth positioning inside the bone is basically determined by genetics. However, after eruption in the oral cavity, tooth positioning is also influenced by intra and extraoral muscles, which guide the final buccolingual (BL) positioning of teeth. In normal occlusion, the intra and extraoral muscles must be balanced to determine the BL positioning of teeth; thus, the eruption pathway of incisors must be followed up. The presence of tooth size discrepancy indicates spacing problems for permanent teeth. If a malocclusion with transverse (posterior crossbite) and vertical (anterior open bite) dysplasias is also present in addition to the lack of space for eruption of permanent teeth, a treatment sequence must be established. If diagnosed in centric relation, the crossbite must be initially corrected by the orthodontist, with aid of expanders. After this stage, vertical correction is achieved with utilization of a palatal crib. Correction of tooth crowding in the mixed dentition by serial extraction may be performed simultaneously with correction of anterior open bite. When the permanent incisors erupt, the muscular environment will be prepared to define the correct BL positioning of these teeth; thus, interceptive treatment of anterior open bite during the mixed dentition presents a favorable prognosis, since it will be concomitantly corrected with growth. The increase in age complicates the treatment of transverse and vertical dysplasias and the outcomes achieved are less stable.

Early therapy for dental open bite malocclusion

Moffa, E.B.; Monini, A.C.; Junior, L.G.G.; Goes, D.R.; Amaral, R.M.P.

Anterior open bite is considered as an alteration in the vertical relationship of maxillary and mandibular dental arches, characterized by the lack of contact between upper and lower anterior teeth. Anterior open bite can be classified as dental, when it has only tooth involvement; dentoalveolar, when it has tooth and alveolar bone involvement; and skeletal when it has basal bone involvement. The etiology of the development of anterior open bite is an interaction of many factors, namely alterations in dental eruption and alveolar growth and oral habits, such as altered function of tongue. Open bite without skeletal involvement can be self-correcting or corrected with mechanotherapy, such as a removable orthodontic appliance. This work presents a case treated with a removable appliance associated with palatal crib that was able to intercept the malocclusion. Early treatment of malocclusion during the primary or mixed dentition period has been indicated to reduce the need of more complex treatments in the permanent dentition.

Surgical orthodontic treatment of supernumerary teeth: two case reports

Cassis, M.A.; Almeida, R.R.

Supernumerary teeth are frequently detected during routine dental radiographic examination and are present in 1-3% of the population. Most of such teeth are asymptomatic and in 90% of the cases they are positioned in the anterior region of the maxilla. If not early removed, they can cause changes in the development of occlusion, affecting mainly the permanent dentition. Among the side effects of supernumerary teeth are dental crowding, impaction of permanent teeth, root resorption, midline spacing, tooth eruption in the nasal cavity and development of dentigerous cyst. The treatment may vary according to the location and number of the teeth and also with early diagnosis. Many times, the case will demand a surgical orthodontic approach. The aim of this work is to present two cases that demonstrate this type of treatment protocol, pointing out the importance of the early intervention in such a way that adequate care may be provided to the normal development of occlusion.

Effectiveness of 0.50 and 0.75% chlorhexidine dentifrice in orthodontic patients

Spin, M.D.; Titarelli, J.M.; Marsicano, J.A.; Oltramari, P.V.P.; Buzalaf, M.A.R.; Henriques, J.F.C.

This double-blind and randomized-controlled trial analyzed chlorhexidine dentifrices in relation to dental plaque, gingivitis, bleeding, calculus and enamel extrinsic staining development. Volunteers in fixed orthodontic therapy used the following dentifrices: 1100 ppmF, NaF (group A, n = 27); experimental, 0.50% chlorhexidine (group B, n = 27); and experimental, chlorhexidine 0.75% (group C, n = 27). At baseline, after 6 and 12 weeks, clinical examinations were carried out. Gingivitis, bleeding, plaque, staining and calculus data were analyzed by ANOVA and Dunn's post-hoc tests to evaluate the performance of each group at the experimental periods. To detect the best treatment after 12 months (12-b), data were analyzed by Kruskal-Wallis and Dunn's post hoc tests. Gingivitis and bleeding scores improved in all groups, but up to the 12th-week examination, the chlorhexidine-containing products had a better performance. Only the 0.75% chlorhexidine dentifrice increased significantly the mean staining index (p=0.0005), although most patients did not notice the stains. The calculus index improved in all groups, but was significantly altered in groups A (p<0.0001) and B (p=0.0037). This study suggests that the use of dentifrices containing chlorhexidine seems to be effective for the treatment of gingivitis in orthodontic patients, especially those containing a low concentration of chlorhexidine (0.50%), which does not provoke significant enamel extrinsic staining.

Retrospective analysis of stable and unstable orthodontic treatment outcomes in the postretention phase

Morais, J.F.; Freitas, K.M.S.; Freitas, D.S.; Freitas, M.R.

The objective of the present study was to analyze orthodontic treatment outcomes of stable and unstable cases in the long-term, aiming to detect the influence of the quality of treatment results in postretention stability, and seeking pretreatment, posttreatment and postretention occlusal features that could predict stability. The sample comprised 94 patients of both genders, presenting Class I malocclusion, treated with extractions of the four first premolars and edgewise mechanics. The dental casts were measured at pretreatment (T1), posttreatment (T2) and postretention (T3), by the PAR index and by the Little irregularity index. Descriptive statistics was performed and the sample was divided in two groups, presenting the following characteristics: Group 1 - stable, comprising 52 patients, with mean pretreatment age of 13.34 ± 1.44 years, with a difference of the PAR index between T2 and T3 of 5

or less; and Group 2 - unstable, comprising 42 patients, with a mean initial age of 13.59 ± 2.17 years, with alteration of the PAR index in the postretention period equal or higher than 5. For intergroup comparison, an independent t test was performed, and the Pearson coefficient was applied for the PAR index in the total sample, among the times evaluated. The mean PAR reduction for treatment was 78.54%, and in the postretention stage was 66.6%. The stable and unstable groups did not present difference in treatment outcomes, measured by the PAR index. Significant correlations were found for the PAR index in the evaluated time points, except between T1 and T2 and between T1-2 and T3. In other words, the more the treatment correction, the less the posttreatment PAR index and the greater the PAR changes in the postretention period. It may be concluded that the quality of orthodontic treatment outcomes did not influence stability in the long term.

Dental size proportion: A requirement to establishment of static and functional ideal occlusion

Gigliotti, M.P.; Barros, S.E.C.; Janson, G.R.P.

This case presents an 8-year-old patient who was looking for orthodontic treatment due to the unsatisfactory esthetic caused by a moderate crowding in the anterior maxillary region. Additionally, the patient had early loss of primary mandibular left first molar. The interceptive orthodontic treatment was successful and the patient was followed until the end of the mixed dentition, when the corrective orthodontic treatment began. However, at the final phase of the treatment, the patient presented increased overjet and consequent absence of immediate anterior guidance, but canine and molar relationship was Class I. This condition originated from a discrepancy of the dental size between the six anterior maxillary and mandibular teeth. Only after the reestablishment of the dental proportion by interproximal stripping of the maxillary anterior teeth, it was possible to achieve the ideal static and functional occlusion.

Diagnosis and treatment of patient with facial pattern III characteristics, considering the racial aspects: subjective facial analysis

Siécola, G.S.; Santos, E.C.A.; Filho, L. C.

The diagnosis of the facial grown pattern should be more important than tooth relations. Therefore, is possible to elaborate the treatment plan based on the main diseases. The purpose of this work was to correlate the subject facial analyses with treatment plan elaboration in a facial pattern III patient. The patient of this case had facial pattern III characteristics, without face complaint, related with her racial aspects, with non significant maxillary deficiency, permanent dentition, Angle's class III, unilateral posterior crossbite, anterior open bite, dental midline deviation and anterior teeth crowding. A maxillary expansion was performed using the space to correct midline deviation. After that, the edgewise brackets were bonded only in the maxillary posterior teeth, until creating two anchorage blocks, and then, the maxillary anterior teeth were included to close the open bite. During this phase, the same appliance was bonded on the mandibular arch after a little stripping on posterior teeth. At the same time, to correct the posterior class III relationship and the overjet (edge-to-edge), the patient used the class III elastic. Only at the completion phase, the patient used elastic to improve intercuspation during two months. The elaboration of the orthodontic treatment plan according to a correct diagnosis (facial grown pattern definition) must consider the racial characteristics, and so, using the subjective facial analyses.

Prevalence of malocclusion in Brazilian mulatto adolescents in the 12-14-year age range

Ceara, T.; Franco, E.J.; Pinzan, A.

Epidemiological studies are important tools to the knowledge of treatment needs in part of the population, and to the establishment of a prognosis for individuals with malocclusion. This study aimed at determining the prevalence of malocclusion in Brazilian pheodermic adolescents (mulattos), in the 12-14-year-old age range. 300 subjects were examined intraorally for malocclusions to be determined, according to Angle's classification (Class I; Class II, division 1 and 2, and Class III), in addition to discrepancies in transversal and vertical planes. The adolescents included in the sample presented a complete permanent dentition, except for the third molars, with no previous orthodontic or orthopedic sort of treatment. The obtained results demonstrated a prevalence of 56.6% for the Class I malocclusion, 34.3% for Class II, being 65% division 1 and 34.9% division 2. Class III dental relation demonstrated a smaller prevalence (9%). The occlusal alterations observed in the transversal plane were, respectively, 12.1% and 25.9%, for posterior crossbite in Class I and Class III patients. In the vertical plane, 9.2% for the cases of anterior open bite in Class I patients and 22.2% for the anterior crossbite in Class III patients. In conclusion, the Brazilian pheodermic adolescents presented, in their majority, a good occlusal relationship. On the other hand, it was evident that Class II relationship presented

a significant value for this ethnical group, highlighting the need of a treatment program, so as to prevent the establishment of these malocclusions.

Prevalence of dental wear in angle class II malocclusion patients: a pilot study

Oliveira, R.B.S.; Peres, S.H.C.S.; Oltramani, P.V.P.; Henriques, J.F.C.

The evolution of Dentistry over the years has promoted a reduction in tooth structure loss caused by carious lesions. However, the greater permanence of the teeth in oral cavity has increased the occurrence of non-carious lesions responsible for dental structure loss. In this way, the tension generated by chewing and the presence of a malocclusion have been characterized as primary etiological factors in the development of non-carious lesions. This study aimed at evaluating the prevalence of non-carious lesions (abfraction, attrition, erosion and abrasion) in complete Class II malocclusion patients. A sample of 78 records from patients was obtained from the files of the Department of Orthodontics of Bauru Dental School, and was divided into two groups with the following characteristics: Group 1, comprising 58 patients with complete Class II malocclusion; and Group 2, comprising 20 patients with normal occlusion. The evaluation of the dental wear was performed in the dental casts by using the "Dental Wear Index (DWI)", which enables the analysis of each surface of the teeth separately. In addition, the data concerning the deleterious habits were considered. The results showed that there was no statistically significant difference between the groups regarding dental wear. However, Group 1 revealed a greater trend to dental wear compared to Group 2, especially on incisal or occlusal surfaces of the upper and lower teeth, and on buccal surfaces of the lower teeth. These results encouraged us to further investigate the relationship between malocclusion and dental wear.

Anterior crossbite treatment using the inclined plan

Sakima, S.A.; Monini, A.C.; Amaral, R.; Junior, L.G.G.

Anterior crossbite occurs when the buccolingual relationship of the anterior teeth is incorrect, with maxillary teeth occluding on the lingual side of the mandibular teeth. This problem can involve dental, skeletal or both components. The differential diagnosis is very important in the treatment plan, which is based on models, x-rays and lateral cephalometrics, in addition to clinical examination, evaluating the occlusion in maximum intercuspal position and centric relation (dynamic) to distinguish from Angle skeletal Class III malocclusion. In dental anterior crossbite, one tooth or more can be involved and there may be an axial abnormal dental inclination. The most commonly related etiological factors are those related with impediment of correct tooth positioning, such as: prolonged retention of primary teeth or residual root, abnormal dental eruption pattern, respiratory problems, vicious habits. This malocclusion treatment must be instituted as early as possible in order to prevent futures complications and take advantage of the periodontal malleability to facilitate tooth repositioning. This work reports the case of a patient with anterior crossbite treated with use of inclined plane. The treatment promoted crossbite correction with satisfactory results. The preventive and interceptive orthodontic treatment of this type of malocclusion prevents modifications in the craniofacial growth pattern and development, providing esthetics and function to the patient.

Cephalometric dental pattern of young Brazilian Afro-Caucasian descendents with normal occlusion

Franco, E.J.; Janson, G.R.P.; Henriques, J.F.C.; Freitas, K.; Pinzan, A.

The purpose of this study was to present a specific cephalometric dental pattern for young Brazilian Afro-Caucasian descendents, by obtaining the mean values of some dental cephalometric variables, and to analyze the prevalence or absence of dimorphism between genders. The sample comprised 40 lateral cephalograms, 20 of male (mean age of 13.15 years) and 20 of female (mean age of 13.10 years) subjects. All subjects were offspring from the miscegenation of Brazilian African and Caucasian adults. All subjects presented permanent dentition in occlusion, except for the third molars, and had not received previous orthodontic treatment. Cephalometric dental measurements were performed following the analyses of DOWNS, STEINER, RIEDEL, TWEED, McNAMARA, RICKETTS, INTERLANDI. Comparison between genders was performed by the independent "t" test. Data obtained from this methodology confirmed the absence of dimorphism between genders. Additionally, protrusion and buccal tipping of maxillary and mandibular incisors were observed, thus demonstrating the need of the adoption of a specific cephalometric pattern for this population.

Periodontics

Radiographic evaluation of the alveolar bone tissue after induction of periodontal disease in rats

Takano, R.Y.; Fernandes, L.A.; Almeida, J.M.; Martins, T.M.; Lima, D.C.; Garcia, V.G.

The aim of the present study was to evaluate radiographically, the effects of the adaptation of ligature in the alveolar bone. Thirty rats were used for this study. The ligature was randomly adapted either on right or left side in the mandibular first molar. The side without ligature was used as control (negative). Ligature was removed immediately after its adaptation. Ten animals were sacrificed at each period of 0, 3 and 7 days. Mandibles were then removed, resected, fixed in formalin and analyzed by means of Digora digital system. The distance of the cementoenamel junction to the alveolar bone crest was measured in mm by a linear plane. The results were not significantly different between the groups and experimental periods as detected by Student's t-test ($p > 0.05$). Adaptation of ligature alone was not able to traumatize the alveolar bone and play a role on the onset of periodontal disease in rats.

Clinical, genetic and microbiological findings in a Brazilian family with aggressive periodontitis

Viana, A.C.; Kim, Y.J.; Sogingivao, P.M.; Salmon, C.R.; Pires, J.R.; Peres, R.C.R.; Scarel-Caminaga, R.M.

Aggressive periodontitis (AgP) represents an inflammatory disease of the periodontal tissues caused by infection of highly virulent bacteria in a possibly highly susceptible subject to periodontal disease. This work reports clinical, genetic and microbiological findings in 11 members of a family with AgP. After periodontal exams, DNA was obtained from epithelial cells and PCR-RFLP was used to investigate IL2, IL4 and IL10 gene polymorphisms. Microbiological samples obtained from gingival crevicular fluid were submitted to PCR in order to detect pathogenic bacteria. Six members of the family showed generalized AgP, four showed localized AgP, and only one was not affected by AgP. The genetic analysis revealed that 60% of the kindred affected by AgP showed specific IL4 (TTD) / IL10 (ATA) haplotypes combination, although it could not be statistically proven. It was found a prevalence of *Actinobacillus actinomycetemcomitans* (72.7%), followed by *Prevotella nigrescens* (54.5%), *Tannerella forsythensis* (45.5%), *Porphyromonas gingivalis* (36.3%) and *Treponema denticola* (9%). The presence of *Porphyromonas gingivalis* was correlated with clinical findings (visible plaque, bleeding on probing and probing depth, $p = 0.03$). There was a predominance of AgP in this family. The presence of periodontopathogens and some haplotypes in important genes probably could contribute to this predominance.

Investigation of -353 (A/T) IL8 gene polymorphism in individuals with chronic periodontal disease

Kim, Y.J.; Viana, A.C.; Curtis, K.M.C.; Cirelli, J.A.; Orrico, S.R.P.; Scarel-Caminaga, R.M.

Interleukin 8 (IL8) is an important chemokine that acts as a potent chemoattractant for neutrophils. It is mainly involved in the initiation and amplification of acute inflammatory reactions and chronic inflammatory processes. The ability of individuals in producing IL-8 is partially determined by -353 (A/T) IL8 gene polymorphism, as AA individuals are higher producers. The aim of the present study was to investigate the association between -353 (A/T) polymorphism in the IL8 gene and the susceptibility to chronic periodontal disease (DPC). One hundred and twelve individuals (control group = 65 and DPC group = 47) were included in this study. DNA was extracted from epithelial buccal cells. PCR-RFLP method was used to investigate the polymorphism in the promoter region of the gene. The statistical analysis of the allelic frequency was assessed by the chi-squared test while genotypic frequency was assessed by CLUMP test. Frequency data for genotypes in Brazilians were compared to those obtained from other populations using the chi-squared test. No significant differences in the allele ($p = 0.5181$) and genotype ($p = 1.0$) frequencies of the polymorphism were found between control and DPC group. The genotype frequency of the polymorphism observed in Brazilians was significant different to that reported in other populations ($p = 0.0002$; $p = 0.0004$). It was due to the lower frequency of AA individuals in our population (3%). In conclusion, -353 (A/T) polymorphism in the IL8 gene was not associated with the susceptibility to chronic periodontal disease in the Brazilian population enrolled in this study.

The use of acid demineralization of dental and bone surfaces to improve the regenerative potential of the bone grafts in Periodontics

Rodrigues, M.G.S.; Passanezi, E.; Sant'Ana, A.C.P.; Greggi, S.L.A.; Rezende, M.L.R.

Root surfaces exposed due to periodontal pocket usually present changes in the density and composition of the mineral content, contamination by bacterial endotoxins and reduced capacity for stimulating regenerative cells. As a consequence, there is loss of the collagen fiber insertion to the root. It has been more than a century ago since the acid demineralization was first studied in the treatment of periodontally affected root surfaces with the purpose of promoting biomodifications aiming at favoring the reattachment of collagen fibers and periodontal regeneration. The acid demineralization principle is based on the exposure of growth factors (especially BMPs) present in the mineralized matrix and prevented to act by the presence of calcium. This case report illustrates how the same principle can be applied to increase the prognostic of the bone grafts in Periodontics using acid demineralization on both root and bone surfaces that will be in contact with the graft. Non smoking and healthy individuals presenting periodontal 2- and 3-wall infrabony defects were treated by osteoperiosteal flap, debridement of the defects, root scaling, root and bone demineralization by citric acid (pH=1 for 3 min), filling of the defects with particulated autogenous bone grafts covered by collagen bovine membrane and suture of the flap. The clinical and radiographic results after 2 and 3 years certify the success of the presented technique, with evidences of fulfilling of the defects and significant reduction of the probing depth. These results led to the development of studies involving the principle of the bone demineralization in other procedures on Periodontics and Implantology.

Subepithelial connective tissue graft: case report

Sousa, T.P.T.; Silveira, E.M.V.; Nogueira, A.L.R.N.

This work reports the case of a 62-year-old patient with good systemic and periodontal health who presented generalized gingival recession caused by iatrogenic brushing and occlusal trauma. The chief complaints were regarding esthetics and dentin sensitivity. The proposed treatment was root fulfillment with glass ionomer (Vitremmer-3M) to recover the original dental anatomy and, thereafter, sub epithelial connective tissue graft surgery on teeth 13, 14 and 15. Periodontal conditions were analyzed and classified as Miller Class I and periodontal phenotype IV. Bruno technique was used on tooth 13, together with Zucchelli technique (distal of tooth 14 and distal of tooth 15), without vertical incisions. After that, conjunctive tissue was removed from a donor site, 20mm long and 1mm thick (Hartzel). The postsurgical control was performed at 7 days, 1 month and 3 months. After subepithelial connective tissue graft surgery, the involved teeth showed complete root coverage, restoring the gingival zenith.

Evaluation of two simplified protocols for PRP preparation: predictability of platelet concentration - a study in humans

Póla, N.M.; Messoro, M.R.; Furlaneto, F.A.C.; Sbrana, M.C.; Esper, L.A.; Garcia, V.G.; Nagata, M.J.H.

PRP biologic effect depends on platelet concentration. Therefore, it is important, from a clinic point of view, that the protocol used for PRP preparation be highly predictable with respect to platelet concentration. The purpose of this study was to analyze the predictability of two simplified protocols with regard to PRP platelet concentration. 10 mL of blood were drawn from each of 10 subjects. Blood samples were divided into two groups according to the protocol used for PRP preparation: Group I (one centrifugation) and Group II (double centrifugation). The platelets in the whole blood and PRP samples from each person were counted automatically. Data were submitted to statistical analysis. The normality of the data was confirmed and the t test was used ($p < 0.05$). Pearson's correlation coefficient was used to demonstrate the relationship between the platelet counts from the PRP and the whole blood samples. The mean whole blood platelet count was $252,000 \pm 68,330$. PRP samples from Group II presented a percentage increase in platelet count significantly greater than that of the samples from Group I ($524.29\% \pm 206.67$ and $155.53\% \pm 27.05$, respectively). A statistically significant correlation between the platelet count from the whole blood and PRP ($r = 0.85$) was only observed in Group I. Group II presented a low correlation coefficient ($r = 0.08$) and a greater variability with regards to platelet concentration. Within the limits of this study, it may be concluded that only Group II presented an appropriate platelet concentration for clinical application, although with low predictability.

Low molecular weight chitosan gel in critical-size bone defects in rat calvaria: a radiographic evaluation

Neto, R.S.; Pavone, C.; Filho, S.P.C.; Cardoso, M.B.; Junior, E.M.

The search for biomaterials that are able to improve tissue regeneration increased the interest in studies with natural polymers, such as chitosan, a biopolymer obtained from Chitin that shows potential in bone formation. The present study conducted a radiographic evaluation of critical-size bone defects prepared in rat calvaria filled with a low-molecular weight chitosan gel (100,000 kDa) and covered with a collagen scaffold. For that, bone defects with a 8 mm diameter were made in 20 Holtzman rat calvaria, and the animals were divided in four groups, according to the filling biomaterial and the period of evaluation: blood clot (15 and 60 days) and low-molecular weight chitosan gel (15 and 60 days). Digital standardized radiographs of animals' skulls were taken right after the surgery and after the established evaluation periods. Radiographic density in a 1000 pixels area in the center of the filled defects were evaluated and compared by ANOVA test ($p < 0.05$). The results showed that at the initial period (15 days), only the blood clot group had a significant bone radiographic density increase, while at the final period (60 days), both blood clot and chitosan gel groups had similar result. It may be concluded that the tested biomaterial showed a positive influence over long-term regeneration of bone defects, although the perceived variations in the blood clot groups suggest that further studies are needed to indicate the use of chitosan gel as a biomaterial under clinical conditions.

Treatment of Miller Class III, Nordland and Tarnoo Class II recession in a maxillary left central incisor using orthodontic extrusion and fixed single-tooth denture

Zingra, A.C.G.; Nunes, L.F.P.; Nunes, M.P.; Mello, L.G.N.; Nunes, D.A.P.; Nunes, I.S.; Filho, D.P.N.

The orthodontic extrusion of teeth or the forced eruption may be proposed to diminish intra-osseous imperfections of an isolated tooth. The purpose of this work is to describe a case report in which the slow orthodontic extrusion technique was performed on the maxillary left central incisor in order to treat the Miller Class III recession. A 51-year-old female patient presenting with Miller Class III recession on the tooth 21 sought for dental care. The proposed treatment was the slow orthodontic extrusion of tooth 21, followed by rehabilitation with fixed single-tooth denture. Orthodontic brackets were installed on the maxillary anterior teeth, in order to move the crown of tooth 21. Every 3 weeks, the orthodontic elastics were activated and the incisal edge of tooth 21 was adjusted to avoid occlusal interferences. Radiographic control was undertaken in order to standardize the radiographic data during the forced eruption period, which extended for four additional months of retention until the stabilization of the tooth in its correct position. The anatomy was reestablished by composite resin immediately after removal of the provisional prosthetic crown. In conclusion, the slow orthodontic extrusion technique was effective in treating Miller Class III recession.

Ethetic-functional clinical crown lengthening

Assaoka, A.M.F.; Nunes, L.F.P.; Filho, D.P.N.; Mello, L.G.N.; Nunes, I.S.; Nunes, M.P.

Most dental procedures are undertaken with the goal of reaching satisfactory esthetic outcomes. For such purpose, it is necessary to plan the treatment. The shape and position of the lips during speech and smile cannot be easily changed. However, the dentofacial esthetics can be improved by means of a combination of the periodontal and prosthetic procedures. In this case, the lip shape, the localization of the smile line, as well as the probing depth, insertion levels, bone height, restorations and caries lesions were evaluated. The purpose of this work is to report case of crown lengthening in maxillary anterior and posterior areas and prosthetic reestablishment. A 48-year-old patient presented with short prosthetic crowns. At the initial clinical examination, the clinical crowns of the maxillary central incisors were exposed all over their extension. Firstly, the probing depth of the gingival sulci was determined. Next, the alveolar bone level in relation to the free marginal gingiva was determined. After the primary incision, a secondary intrasulcular incision was made and the gingival collars were removed. The bone crest was exposed by full-thickness flap elevation and was reduced in height. After tissue maturation, individual metal-free crowns were prepared for each anterior tooth. Based on the outcomes of this case, it may be concluded that the performed technique is satisfactory if correctly planned and indicated, providing a harmony smile and recovering the lost dentofacial esthetics.

Miller Class I recession recovery

Kurokawa, L.A.; Nunes, M.P.; Filho, D.P.N.; Mello, L.G.N.; Nunes, I.S.; Nunes, L.F.P.

Gingival recession can be defined as the exposure of the root surface caused by the apical migration of the marginal gingiva. Dentin hypersensitivity, root cavity and esthetic problems may coexist with exposed roots. The purpose of this work is to report a case in which the Raetzke technique or the envelope technique was used in order to treat a gingival recession. A 37-year-old female patient presented with Miller Class I recession in tooth 14 associated with intense dentin hypersensitivity. Thus, root coverage by the envelope technique was preferred. The treatment of the exposed root area was performed by the application of tetracycline solution, during three minutes. Then, the sulcular incision and insertion of the blade in the mesial and distal directions was made. After preparation of the recipient area, a graft from the palate was obtained. The graft was adapted and stabilized in the recipient site. The immediate postsurgical control was performed the 7th postoperative day. Another follow up visit was undertaken 3 months later. During this period, total root coverage and absence of dentin hypersensitivity were observed. It may be concluded that, under the conditions of the present case, the Raetzke or envelope technique was effective in the treatment of Miller Class I recession.

IL-10-592 polymorphism influences TIMPs and OPG expression

Silva, M.C.; Assis, G.F.; Júnior, W.M.; Trevilatto, P.C.; Silva, J.S.; Cardoso, C.R.B.; Garlet, G.P.

Periodontal diseases are infectious diseases in which periodontopathogens trigger chronic inflammatory and immune responses. Inflammatory mediators, such as TNF- α and IL-1, trigger tissue destruction by production of proteases that degrade the extracellular matrix, mainly matrix metalloproteinases and activation of bone resorption mechanisms. Antiinflammatory cytokines, such IL-10, are thought to attenuate periodontal tissue destruction by the induction of tissue inhibitors of metalloproteinases (TIMPs) and osteoprotegerin (OPG). However, a high individual variation in the levels of IL-10 mRNA is verified, and is possibly influenced by genetic polymorphisms, known as modulators of IL-10 expression. In this study, IL-10 promoter 592 SNPs was analyzed by RFLP (restriction fragment length polymorphism), and the tissue levels of IL-10, TIMPs and OPG were determined by RealTime-PCR in chronic periodontitis (CP) patients and control (C) subjects. As result, A allele of IL-10 promoter -592 polymorphism was associated with lower tissue levels of IL-10, TIMP-1 and OPG expression, and was also associated with higher mean probing depth values in CP patients. In conclusion, IL-10 promoter gene 592 C/A / [ATA] genotype seems to be functional in chronic periodontitis, which supports their inclusion as one of the candidate markers of periodontitis risk.

Use of absorbent membrane as a drug-release device for adequacy prior to root coverage

Cherulli, T.L.; Menezes, H.H.; Naves, M.M.; Menezes, M.M.; Magalhães, D.

Oral adequacy prior to periodontal surgical procedures is still one of the indispensable requirements to this therapy. Traditionally obtained with mechanical procedures, it has currently found on the local application of antibacterial agents a complementary alternative to scaling and root planing, mainly in cases of probing depth above 5mm. However, to increase the effectiveness of these agents, it is necessary to associate a vehicle capable of keeping the agents and releasing them into the periodontal pocket within a certain time. Amongst the possible options, the absorbent vehicles stand out because they are usually applied only one time and do not require further removal. The present work used a drug-release device made from xenogenous absorbent membranes (Genderm-Baumer), to which tetracycline was incorporated. Initially, tooth 23 presenting a probing depth of 7mm in the buccal surface, was submitted to scaling and root planing. After 15 days, it was observed a reduction of 2mm of the periodontal pocket depth and the device was put into the periodontal pocket. Fifteen days after application, there was 3mm of probing depth. After these procedures, root coverage was performed by means of periodontal plastic surgery (coronal slip).

Periodontal plastic surgery for gingival zenith reconstruction

Oliveira, L.C.G.; Domingues, R.S.; Pavan, L.M.; Sant'Ana, A.C.P.; Gregghi, S.L.A.; Passanezi, E.; Rezende, M.L.R.

The main goal of the periodontal surgery is to reestablish health, by reducing probing depth and promoting maintenance of the dentition. However, there has been a great increase in the search for surgical therapy essentially due to cosmetic purposes. Gingival recessions, not only represents a morphologic abnormality with functional consequences, but also causes an esthetic impairment. This condition often alters

the gingival zenith, which determines the regular concave arc, and causes an imbalance on the contour of the tissues, consequently affecting the patient's smile. The currently available surgical techniques for root coverage have low predictability. Among these, the semi-lunar flap, described in 1986 by Tarnow, stands out and is especially indicated for single recessions. This work reports a case of modification of the semi-lunar technique, used to cover contiguous recessions in the upper incisors of a female adult patient. The union of two semi-lunar flaps formed an "m" letter and the coronal sliding of these flaps reestablished the gingival zenith. Details about the surgical technique as well as the local aspects that can interfere with the results, such as type of recession and quality of the gingival tissues, are presented. Even though the semi-lunar flap was created and recommended for single recessions, the proposed modification can reach esthetic results on the coverage of contiguous recessions.

Evaluation of a new system to prepare platelet-rich plasma (PRP): a study in rabbits

Campos, N.; Melo, L.G.N.; Messora, M.R.; Furlaneto, F.A.C.; Póla, N.M.; Bosco, A.F.; Nagata, M.J.H.

The therapeutic use of platelet growth factors to accelerate bone regeneration requires suitable methods of PRP preparation. The purpose of this study was to analyze the efficiency of a new automated system to prepare PRP. 16 white adult male New Zealand rabbits, weighing approximately 3.5 kg, were used. 35 mL of blood was drawn from each animal via cardiac puncture. PCCS IITM (3i Implant Innovations, Palm Beach Gardens, FL, USA) was used to prepare the PRP. The platelets in the whole blood and PRP samples from each animal were counted manually. Data were submitted to statistical analysis. The normality of the data was confirmed and the t test was applied ($p < 0.05$). Pearson's correlation coefficient was used to demonstrate the relationship between the platelet counts from the PRP and the whole blood samples. The mean platelet count in the whole blood and PRP of the animals was $351,111.60 \pm 44,187.71$ and $1,087,813 \pm 277,125$, respectively. The mean percent increase in PRP platelet count in relation to whole blood was $407.30 \pm 161.83\%$. A statistically significant correlation was observed between the platelet count from the whole blood and PRP ($r = 0.66$; $p = 0.0021$). Within the limits of this study, it may be concluded that the PCCS IITM provided an appropriate and predictable platelet concentration in PRP.

Gingival melanin pigmentation: different treatment modalities for smile's esthetic propose

Neto, A.R.L.P.; Passanezi, E.; Sant'Ana, A.C.P.; Rezende, M.L.R.; Greggi, S.L.A.

A smile expresses a feeling of joy, success, sensuality, affection and courtesy, and reveals self confidence and kindness. The harmony of the smile is determined not only by the shape, the position and the color of the teeth, but also by the coloration, texture and form of the gingival tissues. Gingival health and appearance are essential components of an attractive smile. Gingival pigmentation results from melanin granules, which are produced by melanoblasts. The normal aspect of gingival tissues is a pale pink, but part of the population has a gingival melanin pigmentation caused by melanoblastic activity in the basal epithelial layer. A close relationship between gingival pigmentation and ethnic groups is observed. Although gingival melanin pigmentation is completely benign and does not present a medical problem, complaints of "black gingiva" are common particularly in patients with a very high smile line (gingival smile). Different treatment modalities have been proposed for gingival depigmentation, including bur abrasion, scraping, electrosurgery and laser. However, in some black people who present generalized gingival melanin pigmentation, these depigmentation techniques are not the gold standard treatment because the results obtained with these technique are not stable (repigmentation process occurs within few years) and will produce a very anesthetic contrast between the periodontal tissue and patient's skin. This is a report of two cases in which the esthetic aspects were observed to make the choice for the best treatment modality for gingival melanin pigmentation.

In vivo evaluation of two platelet-rich plasma (PRP) activators. A study in rats

Sbrana, M.C.; Messora, M.R.; Furlaneto, F.A.C.; Deliberador, T.M.; Esper, L.A.; Garcia, V.G.; Nagata, M.J.H.

Platelet-rich plasma (PRP) enhances wound healing by degranulating platelets á granules that contain growth factors. *In vitro* studies have shown that the bioavailability of these growth factors in the wound site depends on the type of activator used to initiate PRP clot formation, which may affect its biologic effect *in vivo*. The purpose of this study was to evaluate histologically the influence of the PRP activated with either calcium chloride solution or thromboplastin on bone healing in critical-size defects (CSD) in rat calvaria. 48 rats were divided into 3 groups: C, PRP-C and PRP-T. An 8 mm in diameter CSD was made in the calvaria of each animal. In Group C (control), the defect was filled with a blood clot only. In

Groups PRP-C and PRP-T, the defect was filled with PRP activated with calcium chloride solution and thromboplastin, respectively. Each group was sub-divided into two sub-groups for euthanasia at either 4 or 12 postoperative weeks. Histologic and histometric analyses were performed. New bone formation was quantified as a percentage of the total area of the original defect. Data were submitted to statistical analysis (ANOVA, Tukey's test; $p < 0.05$). No defect was completely regenerated with bone. Group PRP-C presented significantly more bone formation than Groups C and PRP-T, both at 4 and 12 postoperative weeks. No statistically significant differences were found between Groups PRP-T and C at both periods of analysis. Within the limits of this study, it may be concluded that the activator used to initiate PRP clot formation can influence its biologic effect in bone healing in rat calvaria.

in vitro evaluation of two Platelet-Rich Plasma (PRP) activators. A study in rats

Esper, L.A.; Messora, M.R.; Sbrana, M.C.; Furlaneto, F.A.C.; Campos, N.; Bosco, A.F.; Nagata, M.J.H.

The activator used to clot the PRP may modify its biologic effect. A greater clot retraction may decrease the bioavailability of the growth factors released from the platelets. The purpose of this study was to evaluate the influence of two activators on PRP clot formation. 10 male adult rats were used. 4 mL of blood was drawn from each animal via cardiac puncture. PRP was prepared by a double centrifugation protocol. Two blood samples of 0.2 mL from each animal were used in the clot retraction tests. They were divided into two groups according to the activator used to clot the PRP: Group CC (0.01 mL of calcium chloride solution) and Group TP (0.4 mL of thromboplastin). Standardized photographs were taken at 0, 1 and 24 hours. Furthermore, at 24 hours, the supernatant released from each PRP sample was harvested and quantified (in milliliters). The photographs were digitalized and the clot retraction was determined by measuring its area using the software "ImageLab 2000". Data were submitted to statistical analysis (ANOVA, Tukey's test, t test; $p < 0.05$). Samples from Group TP presented a statistically significant greater amount of supernatant than those from Group CC at 1 and 24 hours ($0.37 \text{ mL} \pm 0.09$ and $0.04 \text{ mL} \pm 0.01$, respectively). Groups CC and TP presented a significant clot retraction, when compared to the initial time (0 hour). Group TP ($46.85\% \pm 8.0$) presented significantly greater clot retraction when compared to Group CC ($29.88\% \pm 5.38$) at 24 hours. It may be concluded that thromboplastin promoted greater PRP clot retraction than calcium chloride solution, which may impair PRP biologic properties.

The importance of the bone plate thickness and buccal soft tissue in obtaining esthetics in implants

Moraes, A.F.; Rezende, M.L.R.; Passanezi, E.; Sant'Ana, A.C.P.

Amongst the prerequisites to allow the installation of osseointegrated implants, the alveolar ridge anatomy (both its height and thickness) is clearly essential to treatment success and several techniques have been developed with the goal of improving its conditions (block bone graft, particulate bone graft, etc). Ideally, it is desirable to have an alveolar ridge with sufficient height to accommodate the implant with proper length and reestablish the functional requirements of the area. In addition, implant diameter can improve the area of osseointegration, thus enhancing the support capacity. However, although the alveolar ridge thickness is a key factor to accommodate implants with both larger and smaller diameters, the importance of having an appropriate bone plate should not be overlooked in order to prevent losses on the top of alveolar ridge after the installation of the prosthetic crown. Knowing that a semi-lunar marginal loss usually occurs around implants in function and that this loss does not decrease the alveolar ridge height, it is necessary to have at least 2 mm of bone plate thickness. This is complicated in areas with great esthetic requirements because, when this limit is not respected, there is exposure of a larger extension of the crown, compromising the rehabilitation. Another aspect associated with this situation is the thickness of the gingival tissue. Given that implant diameter is usually smaller than that of natural teeth, it is necessary to check the emergence profile before installation of the prosthetic crown in order to fit the crown dimensions to implant dimensions. Gingival conditioning is undertaken by means of gingival tissue compression by the placement of a provisional crown. This process might lead to loss of gingival tissue height, if its thickness is not appropriate, also creating prosthetic crowns larger than the adjacent teeth, which will compromise the final esthetic outcome.

Gingival recession: case report

Ferranti, C.S.; Silveira, E.M.V.; Chihara, S.G.; Pinto, C.O.; Nogueira, A.L.R.N.

This work reports the case of a 36-year-old male patient with good systemic and periodontal health, who presented with generalized gingival recessions that had as predisposing factors occlusal trauma and iatrogenic toothbrushing. His main complaints were esthetics and dentin sensitivity. In accordance with the settled treatment plan, subepithelial connective tissue grafts were performed in the region

of teeth 32, 33 and 34, and a glass ionomer restoration was placed on tooth 33, in order to reestablish the dental anatomy original of this region. The periodontal conditions were recorded by means of measurements of gingival bleed index, plaque index, probing depth and level of clinical insertion. The patient presented a 3-mm recession in the buccal surface of tooth 32, 4-mm recession in the buccal surface of tooth 33, and 2-mm recession in the buccal surface of tooth 34, classified as Miller Class I and periodontal phenotype IV. Based on the periodontal plastic surgery criteria, a modified Bruno technique was used, with coronal flap elevation without vertical incisions. An approximately 10-mm long and 1-mm thick graft was removed from the donor site and positioned at the cemento-enamel junction of the recipient area, and stabilized with interpapillary sutures, using vycril 6.0 sutures. The postsurgical control was performed at 7 days, 1 month and 3 months. After subepithelial connective tissue graft surgery, there was satisfactory reestablishment of the zenith in the areas with gingival recession.

Resources in Implantology in the presence of inadequate bone ridge: insufficient height and/or thickness

Pinto, C.O.; Rezende, M.L.R.; Sant'Ana, A.C.P.; Passanezi, E.; Greggi, S.L.A.

During the examination and planning for implant placement, many aspects must be considered, but two aspects must be primarily observed: bone height and thickness bone. These anatomic aspects are important to allow implant placement in the best position to permit further denture placement in a satisfactory esthetic and functional condition. It is frequent to find deficient bone ridge in height and/or thickness, which demands treatments alternatives that can return the anatomic requirements of the bone ridge. There are several therapeutic possibilities to this aim, among which stand out: block bone graft prior to implant surgery, particulated bone graft prior to or concomitantly with the implant surgery, guided bone regeneration prior to or concomitantly with the implant surgery using conventional membrane or membrane with titanium, maxillary sinus floor augmentation, etc. Such therapeutic options must be acknowledged by the dentist in order to apply these alternatives when it is necessary, in such a way that implant placement can occur in the best position, length and diameter for a good prognosis.

Esthetic planning of the smile. A multidisciplinary approach

Baldo, T.O.; Baldo, V.M.O.; Tavares, S.P.R.; Júnior, R.P.

This work reports a case of a 21-year-old patient who presented with agenesis of teeth 12 and 22 and had teeth 13 and 23 repositioned orthodontically in order to occupy the space of the missing lateral incisors. The treatment plan involved a multidisciplinary group of professionals. After orthodontics, occlusal adjustment was made using a semi adjustable articulator and functional waxing, periodontal plastic surgery from teeth 15 to 25, whitening and direct adhesive dentistry were performed. A multidisciplinary approach was used to achieve consistent functional results and excellent smile esthetics.

Tobacco smoking: critical aspects on surgical therapy in Periodontology and Implantology

Cândido, C.R.; Rezende, M.L.R.; Sant'Ana, A.C.P.; Passanezi, E.; Greggi, S.L.A.

Nowadays, it is widely accepted that tobacco smoking is a serious public health problem, showing effects all over the organism, acting as a risk factor for a number of pathologies. In dentistry, periodontal disease is the pathology in which the toxic effect of tobacco smoking can be most easily seen. The substances containing in tobacco smoke can start the periodontal disease and aggravate it. The current literature has several studies addressing different aspects of the negative effect of the tobacco on the periodontal structures, severity of periodontal disease, tooth loss, local and systemic effects, etc. Another important problem of tobacco smoking is the bad results seen after periodontal surgery and implants. Many factors can be related to these effects, such as less blood supply to the wound areas because of the vasoconstriction, compromising the healing; negative effects on the phagocytosis capacity and chemotaxis of polymorphonuclear leukocytes as well as decrease of functional activity of macrophages and monocytes; alteration of the inflammatory mediators; more predisposition to the colonization by more aggressive pathogens; inhibition of proliferation and insertion of fibroblasts to root surface as well as decrease of its synthesis capacity. All these factors have negative aspects on Implantology as well. The literature clearly demonstrates that failures are far more common in tobacco smokers, affecting the osseointegration or causing posterior bone loss.

Investigation on the time required for biological distance reestablishment after surgical clinical crown lengthening aiming at the "earliest possible" prosthetic re-preparation

Adachi, A.; Gonzalez, M.K.S.; Rezende, M.L.R.; Sant'Ana, A.C.P.; Passanezi, E.; Greggi, S.L.A.

A longitudinal evaluation was carried out after surgical clinical crown lengthening taking into consideration multiple clinical aspects during wound healing. 23 patients were enrolled in this study, with a total of 30 premolars submitted to the surgical procedure. Diverse clinical parameters were recorded in the preoperative period, immediately postsurgical period and 1, 2, 3, 4, 5, 6 and 12 months postoperatively, generating diverse works. The following aspects were evaluated: gingival margin level, relative insertion level, mucogingival junction, bone level, cervical ending of the existing prosthetic preparation, probing depth, amount of keratinized mucosa, gingival margin migration, bone resection, supraosseous gingival tissue, among others. An occlusal guide was used with referential fixture and the measures were taken with aid of an endodontic stopper and gauged with a centesimal digital pachymeter. During the study, the patients were maintained under plaque control, as determined by measuring plaque and gingival bleed indexes at all periods. The results showed that there was no gingival margin stability during the course of the study, demonstrating that the process of formation of the biological distances is not fast and is of difficult precise definition. Aiming at the "earliest possible" prosthetic re-preparation, it may be concluded that re-preparation can be performed within 4 months, provided 0.5 mm subgingival in the buccal and lingual surfaces, but leaving the preparation at the gingival margin level in the proximal surfaces due to the coronal migration of papillae up to 12 months.

Periodontal planning for root coverage in individual with cleft lip and palate: case report

Valeretto, T.M.; Esper, L.A.; Almeida, A.L.P.F.

Careful periodontal planning allows good outcomes and is fundamental for the esthetic and functional success. This work reports the case of a patient with indication for reduction of tissue thickness at the palatal surface of maxillary teeth and connective tissue graft at the region of the left maxillary canine. After proper planning of the case, grafting was performed with connective tissue obtained from internal gingivectomy, avoiding the need of a second surgery.

Periodontal profile of patients with diabetes mellitus

Nogueira, A.V.B.; Massucato, E.M.S.; Santos, A.L.; Orrico, S.R.P.

Factors such as duration of diabetes, poor glycemic control and presence of complications are important in the evaluation of patients with diabetes and may have relation with the increase in the incidence of periodontitis in these patients. The aim of this study was to present a profile of the periodontal conditions of a group of patients with diabetes mellitus. Eighty-one individuals were evaluated and personal and relative data were raised about diabetes such as: type, duration of disease, metabolic control level (HbA) and presence of complications. Periodontal exam consisted of: evaluation of probing depth, clinical attachment level, visible plaque level and marginal bleeding index. For periodontal diagnosis, the following categories were considered: gingivitis, localized chronic periodontitis (L.C.P.), generalized chronic periodontitis (G.C.P.) (AAP, 1999). Data were entered and analyzed by Epi Info 6.04b software and the results were obtained by simple percent analysis. It was observed that 54.3% of the total sample were women, 69.2% of the individuals had type 2 diabetes and were aged 45 years or older. Among patients with type 2 diabetes, 50% presented L.C.P. and 35.7% presented G.C.P. Sixty-two percent of the better-controlled diabetes individuals (HbA <8) had L.C.P., while in the group of poor-controlled patients there was a greater trend to G.C.P. Thirty-six percent of the total sample exhibited no complications, but had periodontal disease, while 51.9% presented some periodontal complication, from which 54.8% had L.C.P. In relation to oral hygiene condition, 64.2% of the individuals presented unsatisfactory hygiene from which 57.7% had L.C.P. and 42.3% had G.C.P. It may be concluded that great part of the studied population had chronic periodontitis and, therefore, patient with diabetes must be evaluated and treated periodontally. In these patients, periodontal disease may have a relation with age, metabolic control, presence of complications and bacterial plaque.

Analysis of the biocompatibility and time of absorption of swine collagen membranes in surgical procedures

Reis, Q.N.; Magalhães, D.; Menezes, H.H.M.; Horbylon, B.Z.; Borges, D.C.; Gomes, C.F.; Carneiro, K.F.

The application of physical barriers for regeneration of bone defects was first proposed by Dahlin et al. (1988), who reported a technique known as guided bone regeneration (GBR). Currently, the principles of GBR have been used in the repair of bone defects; bone volume increase of resorbed alveolar ridges; development of bone areas for dental implants; associated or not with grafting procedures for post-extraction treatment of dental sockets for immediate implantation; treatment of periimplant fenestrations and dehiscence defects; and treatment of periimplantitis. In this way, GBR has been successfully used to treat some types of bone defects. Problems associated with the procedure, such as premature exposure of the membranes to oral cavity and the consequent contamination. The material of the swine membrane is a bone tissue matrix from the femur of pigs. Swines, including the mini-pigs, present similarities with humans with respect to dental aspects, relative to their morphology, physiology and biocompatibility. The purpose of this work was to provide information on the applicability, biocompatibility and time of absorption by the human organism of swine collagen membrane in regenerative periodontal procedures.

Oral Rehabilitation

Bond strength of denture teeth to acrylic resins after microwave irradiation

Moffa, E.B.; Ribeiro, R.C.; Vergani, C.E.; Pavarina, A.C.; Izumida, F.E.; Giampaolo, E.T.

One of the most usual types of failure in a denture is bond failure between a denture tooth and an acrylic resin denture base. Thus, this study evaluated the bond strength of denture teeth (Vivadent-DV and Biotone-DB; central incisors) to acrylic resins (QC20-QC, Acron MC-AC and Lucitone 550-L) after microwave irradiation. A total of 240 specimens were fabricated, 120 from each brand of denture tooth. All specimens were randomly divided into 4 groups (n=10): G1 (control group) – immersed in distilled water at 37°C for 48 h, G2 – immersed in distilled water at 37°C for 48 h and microwaved twice at 650W for 6 min, G3 – immersed in distilled water at 37°C for 48 h and microwaved daily for 7 days, G4 – immersed in distilled water at 37°C for 8 days. Shear load was applied with a load testing machine at 45 degrees from the long axis of each denture tooth on the palatal surface at a crosshead speed of 0.5mm/min until fracture. Student's test (p=0.05) was applied to data for the detection of significant differences between two brands of denture teeth. Most of bond strength values established between DB and the resins were significantly higher than those of DV, except for G1 and G2. For G1, the strength of QC bonded to DV was significantly higher (P<0.05) than QC bonded to DB. No significant differences were observed with both brands of teeth when bonded to AC resin for G1 or bonded to L resin for G1 and G2. However, the variation (%) of bond strength was predominantly lower with DB than DV. In conclusion, DB may be indicated with reliability due to its uniform behavior.

Misalignment of implant-supported prosthesis in relation to dental arch: 12 years of follow-up

Coro, V.; Júnior, C.D.S.; Neves, F.D.

The purpose of this study was to warn the dental community about a possible problem in partial implant-supported prosthesis for long periods in function. The misalignment between natural teeth and implant-supported prosthesis on teeth 11 and 12, observed in a 12-year clinical follow-up, illustrates the fact. Two Nobel Biocare® implants were placed and left covered for 6 months. The second-stage surgery was performed and the provisional denture was readapted. After 11 days, the abutments were installed and the fabrication of the prosthesis started. The definitive metal-ceramic crowns were placed in 2005, after a rigorous occlusal adjustment. Evaluations were made at 2, 4, 6, 9 and 12 years, when it could be noticed that the restorations were positioned palatally and with an extrusion in comparison to the natural teeth. The implants presented a natural bone loss to the system utilized. However, after 9 years, a greater discrepancy could be noticed, with anterior occlusion and esthetic changes. The possible causes have been discussed: occlusal problems, parafunctional habits and natural movement – strength anterior component. The two first options were discarded after clinical analysis and diagnosis. Therefore, the natural movement, probably deriving from an interaction of mechanical and genetic factors might have been the cause. However, further investigation is needed. The implants do not have periodontal ligaments, but rather an ankylosis, so they do not suffer those movements. This case emphasizes the need to inform the patients that the implants can last more than 10 years in function, but it is not the same with the restorations, when losing function and esthetic, must be replaced, giving back harmony to the stomatognathic system.

Effect of thermocycling on the impact strength of one denture base and two relined acrylic resins

Bochio, B.C.; Lazarin, A.A.; Perez, L.E.C.; Vergani, C.E.; Pavarina, A.C.; Wady, A.F.; Machado, A.L.

Adequate impact strength is essential for relined dentures to resist the forces of mastication, thus preventing denture fracture. Clinically, the denture base materials are submitted to temperature changes during the intake of hot and cold food and drinks or the cleansing regimens. This study evaluated the effect of thermocycling on the impact strength of one heat-polymerizing resin (Lucitone 550 -L) when relined using the same material or the autopolymerizing relined resins Ufi-Gel Hard (U) and Tokuyama Rebase II (T). The impact strength of intact resin L specimens, before and after thermocycling, was also evaluated. Specimens of L (n=30) were made (60 mm × 6 mm × 2 mm) and relined (2 mm) using the same material (L/L) or the relining resins T (L/T) and U (L/U). Intact L specimens (n=10) were also made (60 mm × 6 mm × 4 mm). The specimens were then divided into 2 groups: G1 (control – without thermocycling); G2 - specimens were thermally cycled for 5.000 cycles between 5±2°C and 55±2°C. A 0.8mm V-notch was prepared and the specimens were submitted to the impact test (Charpy) using a 0.5 J Charpy pendulum and distance of 50mm between the supports. Data (kJ/m²) were analyzed by Kruskal-Wallis test (α=0.01). For both groups, resin L (G1- 1.65; G2- 1.53) exhibited a significant increase in the mean impact strength after relining with T (G1-5.90; G2-4.71), a decrease after relining with U (G1-0.67; G2-0.68), and remained unaffected after relining with L (G1-1.71; G2-1.54). Only L/L combination (1.71) showed a decrease after thermocycling (1.54). Thermocycling had no deleterious effect on the impact strength of the specimens relined with materials T and U, but promoted a decrease when relining was made with resin L. The highest impact strength was observed for L/T combination.

Impact strength of a heat-polymerizing denture base acrylic resin and two autopolymerizing relined resins

Wady, A.F.; Lazarin, A.A.; Perez, L.E.C.; Vergani, C.E.; Giampaolo, E.T.; Bochio, B.C.; Machado, A.L.

As denture wearers become older and lose much of their supporting alveolar bone, the need for continuing prosthodontic care such as relines is more evident than previously. The relining procedure may affect the impact strength of the denture base and lead to the fracture of the removable prosthesis. This study evaluated the impact strength of one heat-polymerizing denture base resin (Lucitone 550-L) and two autopolymerizing relined resins (Tokuyama Rebase-T and Ufi Gel Hard -U). The impact strength of specimens of resin L relined with the same material and with the autopolymerizing relining resins was also evaluated. Specimens of L (n=18) were made (60 mm × 6 mm × 2 mm) and relined (2 mm) with the same material (L/L) or with the relining resins T (L/T) and U (L/U). In addition, intact L, T and U specimens (n=6) were made (60 mm × 6 mm × 4 mm). All specimens were prepared according to the manufacturers' instructions, and a V-notch was then cut to a depth of 0.8 mm. The impact test (Charpy) was carried out with a pendulum rated at 0.5 J and distance of 50 mm between supports. Data (kJ/m²) were analyzed by Kruskal-Wallis test (α=0.01), which indicated that the mean impact strength of resin L (1.72) was higher than that of resin U (0.86), which in turn was higher than that of material T (0.69). There was no significant difference between L (1.72) and L/L combination (1.72). Compared to the intact resin L, the mean impact strength was significantly increased after relining with T (L/T-6.45), whereas relining with U significantly decreased the mean impact strength (L/U – 0.67). The impact strength of resin L remained unaffected after relining with the same material, and was significantly increased after relining with resin T.

Evaluation of phonetics in prosthodontic patients

Hilgenberg, P.B.; Saldanha, A.D.D.; Silva, P.M.B.; Calderon, P.S.; Porto, V.C.

Dental procedures must respect esthetics, phonetics, masticatory and deglutition functions, oral functions and the neuromuscular system. The purpose of the present study was to make a literature review of the most important aspects of speech related to dental prostheses. Furthermore, a speech conference list was proposed to be used during dental treatment. Speech is the most complicated response of men, but it is frequently underestimated because its complexity is not apparent. Speech rehabilitation can be done by the reshaping of teeth and palate of the dental prosthesis, reestablishment of the vertical dimension, free functional space and closest speaking space. The sounds are described by the way they are produced and by the articulators they involve. They can be classified as: plosive, fricative, nasal, liquid, affricative, basal and vibrating. For dental procedures, during denture adjustment, the most important sound is /s/. The correct production of speech might be altered when there is anterior open bite, mispositioned teeth position, tooth loss, inadequate tooth shape and anatomy, alteration in vertical dimension, in free functional space and closest speaking space, discrepancy between overjet and overbite. The two most common speech errors are lisping and whistling. They are characterized as escape of air with substitution of certain sounds and whistle, respectively. All dentists must

be aware of these events not to install a new dental prosthesis with new speech sensations or alterations. To the correct production of sound, it is mandatory that all speech articulators and the stomatognathic system are well-balanced.

Differential diagnosis in the treatment of orofacial pain

Silva, P.M.B.; Calderon, P.S.; Saldanha, A.D.D.; Hilgenberg, P.B.; Rodrigues, K.R.; Conti, P.C.R.

The dentist is the professional involved in the diagnosis and management of orofacial pains. The diagnosis, however, can be quite difficult, due to the fact that many painful disorders of non-odontogenic origin can refer pain to the teeth, which frequently lead to wrong treatment strategies. In this scenario, myofascial and neuropathic pain conditions are extremely important. The purpose of this work was to demonstrate, by a case report, the importance of the differential diagnosis in order to determine the origin of pain in orofacial pain patients. The case refers to a 43 year-old female patient, presenting a clinical situation of pain on the left side of the face (supra orbital and lateral to the nose), including the maxillary teeth area at the same side. In this case, the correct diagnosis and treatment were established after the accomplishment of different exams and specific diagnosis tests. The dental professional should be aware of the differential diagnosis because irreversible and expansive treatments are inadequately used in the control of pain of different origins, with economic and biologic consequences to the patient.

Pharmacotherapy in the management of chronic orofacial pain

Saldanha, A.D.D.; Hilgenberg, P.B.; Silva, P.M.B.; Calderon, P.S.; Vedolin, G.M.; Conti, P.C.R.

Orofacial pains may arise from musculoskeletal, neuropathic, (neuro)vascular, visceral and/or psychiatric origins. Drug selection depends on a variety of factors with the most important factor being an accurate diagnosis. Pharmacotherapy is a cornerstone in the treatment of pain and should be directed towards the source of pain. Various drugs are recommended in the management of orofacial pain as nonopioid and opioid analgesics, corticosteroids, skeletal muscle relaxants, anticonvulsants, antidepressants and anxiolytics. Generally, symptoms of depression, sleep disturbance, stress and drug dependency may accompany chronic pain and must be treated concomitantly, associated psychological therapy.

“Adhesive Endo Crown” as a therapeutic resource for endodontically treated teeth

Costa, Y.M.; Mondelli, J.; Sábio, S.S.; Ido, V.Y.; Sábio, S.

This study suggests an innovative form of therapeutics as restoration for endodontically treated teeth with great destruction of the coronal remainder. The conventional techniques promote the reconstruction of these teeth with cast metal cores, prefabricated cores or filling cores associated with partial or full crowns depending on the extension of coronal destruction. These treatments have provided quite satisfactory clinical outcomes over time, which have determined their acceptance among the dental class. However, these treatments are expensive and demand several operative stages. In 1999, Bindl, Mörmann presented a therapeutic approach denominated Endo Crown, which proposed the treatment of these teeth in a single session by fabrication of adhesive crowns using the Cerec system. This report suggests modifications adapting to the indirect restorative system materials of laboratory use that are more accessible and available to the clinicians, such as modified porcelains or laboratory resins. The modified restorative system presents good clinical perspectives from the functional and esthetic points of view, because it adapts to the conditions of most laboratories and, for this reason, the costs are more accessible to the dentist and patient. However, given the small number of reported cases, it is advisable that indication of this treatment is made only based on well selected clinical situations.

Rehabilitation by mesial cantilever for preservation of the integrity of the canine: a case report

Júnior, F.A.A.; Bezzon, O.L.

A favorable treatment to substitute the loss of tooth is the use of a fixed partial denture (FPD) that has both sides supported. The use of distal cantilever is considered an exception because, especially in unilaterally edentulous dentition, it is preferable in relation to removable partial denture (RPD). The mechanics of cantilever FPD requires the abutment adjacent to the replacement tooth to possess suitable periodontal support (Antonoff SJ, 1973) because the greatest functional stress is directed on the nearest abutment (Henderson D et al., 1970). Ewing (1957) cited the following requirements to use of cantilevered PDF: sound periodontal support,

satisfactory root morphology and a favorable arch-to-arch relationship. This study report the case of a patient with absence of tooth 24, having teeth 25 and 26 compromised by extensive, unsatisfactory restorations and unfavorable occlusal plain, however, with tooth 13 completely sound. After clinical-radiographic examination and analysis of the study models mounted in a semi-adjustable articulator, the treatment plan was settled including the fabrication of mesial cantilevered fixed metal ceramic partial denture for replacement of tooth 24, having teeth 25/26 as abutments; such planning objectified preservation of 13. In this case the use of implants was not accepted by the patient. In these situations, the usual treatment choices are cantilever FPDs or RPRs. Although both types of treatment can recover the patient function, the fixed denture, in this case, was better accepted, also for allowing the regularization of the Spee curve. From retrospective studies, it may be concluded that, in spite of new possibilities for implants for the extension of shortened arches or for replacement of anterior teeth, the use of cantilevered restoration to replace a dental loss presents good prognosis and can still be indicated as a safe and simple technique with good longevity.

Occlusal splint and low-level laser in the control of pain orofacial and in the evaluation of the functional mobility of the lumbar spine

Ferreira, L.M.A.; Fagundes, K.S.; Videira, A.C.T.; Hotta, T.H.; Regalo, S.C.H.; Bataglian, C.

Physical therapy has currently an important role in functional recovery of patients with temporomandibular disorders (TMD) during clinical and physical evaluation. To help during treatment, low-level laser therapy (LLLT) has been used as an auxiliary resource in pain control. The aim of this study was to demonstrate the importance of the LLLT with occlusal splint appliance, in improving pain control and functional mobility in lumbar spine of 7 patients treated at the “*Clínica de Disfunção Temporomandibular e Dor Orofacial em Pacientes Com Necessidades Especiais: Abordagem Multidisciplinar*”, of the School of Dentistry of Ribeirão Preto, University of São Paulo (Research Ethics Committee no. 2006.1.411.58.0). An Analogical Visual Scale (AVS) was used together with and postural physical therapy evaluation as initial and final evaluation instruments. The proposed treatment was the association of occlusal splint and 10 sections of LLLT (AIAsGa; 780nm wavelength, 70mW power, 35J/cm² dosimetry). Based on the obtained results, it may be concluded that the therapies used in this study were effective in eliminating orofacial pain and improving lumbar mobility.

Prosthetic rehabilitation in a patient with pycnodysostosis

Rezende, M.S.; Oliveira, A.C.S.; Carvalho, P.M.; Guimarães, R.A.P.; Brazão-Silva, M.T.; Marra, D.T.; Costa, M.M.

The pycnodysostosis (PYCD) is a rare skeletal recessive autosomal dysplasia in consequence of altered codification gene of cathepsina K enzyme. Moroteaux and Lamy first described this alteration in 1963, which may also be called Maroteaux-Lamy syndrome or mucopolysaccharidosis type VI. The main clinical manifestations include low stature of patients, micrognathia, and delay, malformation or mispositioning of teeth. Additionally, osseous fragility with history of pathologic fractures can often be found. Osteomyelitis represents the most aggravator of complications in consequence of oral problems, being more common in adults than in children. Although clinical and radiographic aspects of this syndrome are well established in literature, reports concerning the oral rehabilitation of these patients are rare. Based on this, this work reports a case of a female patient diagnosed with PYCD emphasizing the oral findings, and describing a supportive treatment comprising patient oral rehabilitation. Occlusal rearrangement was undertaken by fabrication of an overdenture. The outcomes were extremely satisfactory and the treatment was conservative and allowed the establishment of a stable occlusion. Tooth position was not altered, but the inter-arch relationship was improved, provide occlusal stability. This type of prosthesis permits easy cleansing and use in PYCD patients with proper case selection, representing an efficient and safe alternative for rehabilitation of these patients.

The use of magnetic retention as an option for prosthetic rehabilitation of patients with periodontal disease

Leite, P.H.A.S.; Guerra, C.M.F.; Moraes, S.L.G.; Bezerra, C.F.R.; Neto, A.F.; Carreiro, A.F.P.

The magnetos have been constantly used in Dentistry due to their multiple applications, mainly in the prosthetic area and some orthodontic situations. The use of magnetos in removable partial denture becomes a valid alternative to promote retention and stability, eliminating prosthetic structures that can affect esthetics and mainly reducing tensions on periodontium. That way, they are an excellent indication for patients who present supporting teeth with reduced periodontal support due to bone loss secondary to periodontal disease, promoting a better retention and reducing

the transmission of extreme forces to these structures. The magnetos have a simple technique and are easily incorporated to the denture, being the most used the Nd-Fe-B as well as those which associate cobalt and platinum. One of its limitations is its low resistance to corrosion by oral fluids, needing to be coated by another metal, usually titanium. The purpose of this study was to present an alternative treatment for the prosthetic rehabilitation of the pillar teeth with periodontal disease, highlighting the functional, biological and esthetic advantages of the use of magnetos in removable partial denture (overdentures).

Benefits of artificial gingiva in a patient with unfavorable labial line and rehabilitated with implant-supported fixed partial denture

Marra, D.T.; Lima, J.H.F.; Carvalho, P.M.; Oliveira, A.C.S.; Brazão-Silva, M.T.; Diniz, P.V.P.; Costa, M.M.

The rehabilitation of patients with implant-supported fixed dentures improves the masticatory performance, and provides more satisfactory results when compared to others dentures. However, the esthetics in some situations is not fully achieved, mainly in cases of accentuated bone losses and unfavorable labial line. In these cases, it is necessary to seek alternatives to meet patients' requirements and expectations. A viable alternative has been the use of artificial gingiva to promote acceptable esthetics without compromising the cleaning cervical areas of implant-supported dentures. The aim of this work was to report the case of a patient with large exposure of the cervical region of the implants due to little bone availability and unfavorable smile line. In attempt to overcome these problems, a removable artificial gingiva was fabricated and the final results were extremely satisfactory. In conclusion, with proper case selection, this is an additional artificial method to improve the success of this type of prosthesis.

Effect of microwave disinfection on toothbrush wear resistance of denture base resins

Cintra, A.V.; Izumida, F.E.; Ribeiro, R.C.; Machado, A.L.; Vergani, C.E.; Pavarina, A.C.; Giampaolo, E.T.

This study investigated the wear of Lucitone 550 and QC 20 denture base resins after microwave disinfection. Twenty specimens of each material were prepared (40x20x2mm). The specimens were submitted to successive weighing until constant mass. The specimens were placed in a toothbrush machine with deionizer water/dentifrice slurry at 1:1 ratio. Each specimen was brushed in a toothbrush abrasion machine using 20,000 brushstrokes. A weight of 200g was applied to the brushes during the test. The specimens were weight again and the abrasion was calculated (μg) by the difference of initial and final weight. Prior to toothbrushing, the specimens were divided into 2 groups: G1 (control group)- immersed in distilled water for 48 hours and G2 - immersed in distilled water for 48 hours and submitted to 2 six-minutes microwave disinfection cycles at 650W. This procedure simulated denture disinfection before laboratorial adjustments to prevent cross contamination. The results were subjected to ANOVA, Levene and Shapiro Wilk test ($\alpha=0.05$). There was no significant difference between the experimental and the control groups. In conclusion, loss of mass of denture resins was not influenced by microwave disinfection.

Acting prosthesis for reestablishment and diagnosis of diminished vertical dimension of occlusion

Diniz, P.V.P.; Oliveira, A.C.S.; Arantes, F.N.; Brazão-Silva, M.T.; Rezende, M.S.; Marra, D.T.; Prado, C.J.

The rehabilitation of individuals with diminished vertical dimension of occlusion (VDO) is still a great challenge to dentists. Firstly, it is necessary to make a correct diagnosis. Clinical situations in which there are few and severely destroyed remaining teeth and irregular occlusal plane with reduced VDO present esthetic, chewing, phonetic deficiencies, usually associated with fibromyalgia. Therefore, the foremost steps are to reestablish these functions, especially VDO, and to evaluate them during a certain period. Then, the definitive rehabilitating treatment can be planned only after the dentist is sure that the "new" VDO is comfortable to the patient. An alternative to reestablish VDO, centric relation and recover stability and occlusal harmony is the use of overlay. This case report presents the clinical and laboratorial phases of the fabrication of this denture modality and discusses its advantages and indications. This type of denture is of easy and fast fabrication and has a high cost-effectiveness ratio.

Immediate reconstruction of a severely abraded dentition using an overlay: provisional and definitive treatment phases

Júnior, A.C.F.; Oliveira, A.P.L.; Verde, M.A.R.L.; Rocha, E.P.; Silva, A.M.

The oral rehabilitation in patients with severely abraded dentition has been a great challenge for the dentists, mostly for those less experienced. These teeth excessive worn are usually associated to parafunctional habits like bruxism, that is more prejudicial in association with others problems, like tooth erosion. The loss of vertical dimension of occlusion, the occlusal instability and the loss of anterior guidance occasioned by the excessive tooth wear might damage the stomatognathic apparatus' biology, function and esthetics. Then, a correct diagnosis and treatment planning of the case are crucial to control and reestablish the apparatus' harmony. This situation prompted studies to develop effective therapies for the treatment and control of parafunctional habits, which can involve the muscles, the temporomandibular joint and the teeth. Thus, the purpose of this report was to describe the therapy used in a patient with severely abraded dentition caused by bruxism associated with tooth erosion, with satisfactory bone support and gingival health, but with loss of vertical dimension of occlusion and posterior bite collapse. In the provisional treatment phase, a vertical dimension reestablishment plate was made to the immediate recovery of the function and esthetics. It is a reversible and no invasive treatment with a lower cost. After a 2-month surveillance period and the patient being asymptomatic, the definitive rehabilitation phase started, involving conjugated fixed and removable partial dentures. The patient's self-esteem recovered and he returned to his society circle.

Biological and biomechanical aspects of the cone-morse implants

Maior, B.S.S.; Filho, R.V.; Netto, B.P.; Assis, N.M.S.P.

In view of some discussed and demonstrated complications in the literature, especially problems of marginal bone resorption, loosening and fracture of screws, and aiming at increasing the stability in the implant-crown interface, new designs of prosthetic connections between crown and implant were introduced to the market to meet esthetic and functional demands. Implants with internal connection, with Morse taper characteristics provide a reinforced connection between implant and abutment, generating a cold welding among those elements, absence of microgap and increased resistance to micro-movements providing a rigid connection. The objective of this study was to demonstrate the biological and biomechanical behavior the implants and prosthetic components of the cone-morse system.

Acrylic resin removable gingiva: a simple and esthetic alternative to replace anterior periodontal tissues

Neto, A.F.; Amaral, B.A.; Branco, N.; Moraes, S.; Guerra, C.M.F.; Aquino, L.M.M.; Carreiro, A.F.P.

The use of conjugated fixed/removable partial dentures is an excellent alternative to solve esthetic and functional problems in Kennedy Class I patients. A 59-year-old patient came to the dental clinic of the Dental School of Ingá complaining of esthetic discomfort and functional difficulties. The intraoral examination revealed that teeth 16, 17, 18, 26, 27, 28, 34, 35, 36, 37, 38, 46, 47 and 48 were missing. Case planning determined the fabrication of fixed dentures joining all the remaining teeth of the maxillary arch, which presented with poor esthetics due to staining and fractures, conjugated with a removable plug-in denture in the molar region. A conventional removable denture was constructed for rehabilitation of the mandibular arch. It may be concluded that this technique allows the dentist joining the high-quality esthetics of porcelain in the anterior region with the best force distribution provided by removable partial prostheses compared to cantilevered fixed dentures.

Analysis of relative artificial tooth position changes during specific upper denture processing phases by means of computer graphics

Sturion, L.; Ortolan, A.P.S.; Shibayama, R.

Artificial tooth position changes were investigated during upper complete denture processing. QC 20 (Dentsply) and Onda Cryl (Clássico - specific for microwave energy) resins were used and flasked in type II gypsum stone mould or silicone mould, polymerized in hot water bath as well in microwave polymerization. Forty specimens were used, which were obtained from one standard cast, and divided into four groups (n=10) that were processed as follows: a) group I: flasked in metallic flasks with gypsum stone barrier and conventional polymerization. b) group II: flasked in glass fiber flasks with gypsum stone barrier and polymerization by microwave energy. c) group III: flasked in metallic flasks with silicone barrier and conventional polymerization. d) group IV: flasked in glass fiber flasks with silicone barrier and microwave polymerization. An acrylic resin guide was used to detect tooth displacements, this guide was marked with 5 predetermined points in teeth

cusps that has proportionate reference points in the replicas. These points were used to measure, using AutoCad software, tooth displacements by digitized occlusal surface of the teeth. Based on the results and according to the employed methodology, the following can be concluded: 1. Tooth position changes occurred after denture processing in all experimental groups. 2. The technique of flasking with silicone mould and microwave polymerization (group 4) presented minor degree of tooth position changes during all the processing. 3. The segments that constitute the smaller triangle represented by the points of teeth 15, 21 and 25 showed more homogeneity and linearity than the larger triangle represented by the cusps of teeth 17, 21 and 27. 4. The use of silicone mould instead of gypsum stone mould for total denture flasking resulted in minor degree of dimensional changes regardless to the method of polymerization.

Effect of internal bleaching with 37% carbamide peroxide on fracture strength and failure pattern of teeth reconstructed with different restorative procedures

Nápoles, B.B.; Kaizer, O.B.; Reis, K.R.; Calderon, P.S.; Silva, P.M.B.; Bonfante, G

This study investigated the compressive fracture strength and failure pattern in premolars submitted to endodontic treatment and internal bleaching with 37% carbamide peroxide for 21 days, with application of different restorative procedures. Six groups were employed (n = 10): 1) non-bleached teeth and pulp chamber sealed with IRM; 2) bleached teeth and pulp chamber sealed with IRM; 3) bleached teeth and pulp chamber filled with light cured composite resin; 4) bleached teeth, root canals prepared at 10mm, filling of the root canals and pulp chamber with IRM; 5) bleached teeth, root canals prepared at 10mm, luting of prefabricated metallic post with zinc phosphate and pulp chamber sealed with composite resin; 6) bleached teeth, root canals prepared at 10mm, luting of glass fiber post with resin cement and pulp chamber sealed with composite resin. After 24-hour storage in distilled water, the specimens were submitted to compressive fracture strength testing in a universal testing machine. The following values were found: Group 1 – 56.23kgf; Group 2 – 48.96kgf; Group 3 – 53.99kgf; Group 4 – 45.72kgf; Group 5 – 54.22kgf; Group 6 – 60.12kgf. The analysis of variance did not reveal statistically significant difference between groups (p>0.05), suggesting that internal bleaching with 37% carbamide peroxide did not weaken the dental tissues. The largest number of unfavorable fractures was observed for Groups 2 (50%), 4 (40%), and 5 (30%). Group 6 exhibited the most favorable failure pattern. The results suggest that internal bleaching with 37% carbamide peroxide did not significantly weaken the teeth. Among the bleached teeth, those with temporary IRM restorations or metallic posts demonstrated the most unfavorable fracture pattern, whereas the most favorable fracture pattern occurred in teeth restored with composite resin and glass fiber posts.

Immediate complete denture: a clinical option in immediate rehabilitation of patients with advanced periodontal disease

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Periodontal disease is a bacterial infection that affects the periodontal tissues of protection and support. The remaining teeth often show peccary and incompatible conditions with the facial esthetic, masticatory function and general health status of the patients. In addition, the social relations of these patients are commonly affected by the consequences of this disease. Immediate complete denture (ICD) represents a very important appliance for use between the time of full-mouth extraction and fabrication of definitive prosthesis. For diagnosis, the clinical interview associated with clinical and radiographic data and analyses of study models are indispensable. It is mandatory for treatment success that the patient be aware of all phases of treatment and be in accordance with them. A 33-year-old woman presented to dental care with significant amount of bacterial plaque, dental calculus, gingival inflammation and bleed with demanding gingival purulent collections. The teeth had high mobility, pain, caries and roots remnants. It was also observed buccal displacement of the teeth causing mouth breathing, and drying of lips and mucosa. Radiographically, a poor prognosis was evident to accentuated bone resorption. Because of the patient's low socioeconomic level together with her lack of motivation due to her oral conditions a treatment plan comprising full-mouth extraction and installation of an immediate complete denture was settled. All phases of this case were documented. The goals of this work were to discuss the psychological influence of this treatment, treatment planning, fabrication and installation of the ICD and address its characteristics, advantages and disadvantages.

Electromyographic activity of the masseter and temporal muscles of individuals with complete denture, partially edentate and dentate

Hotta, P.T.H.; Hotta, T.H.; Vitti, M.; Vasconcelos, P.B.; Rosa, L.B.; Regalo, S.C.H.

Alterations in the masticatory performance and the activity of the masticatory muscles can occur due to tooth absence, inadequate conditions of remaining teeth or poorly

adapted complete denture. The purpose of this study was to analyze the electromyographic activity of the right and left masseter and anterior temporal muscles (LT, RT, LM, RM) in different groups. Three groups were formed: group 1 (n = 9) - individuals with complete denture; group 2 (n = 9) - individuals with absence of at least 10 teeth; and group 3 (n = 9) - dentate individuals. The analysis was performed using a Myosystem Br-1 electromyographer to record the rest position, mandibular movement and bite force in molars. The means of the collected data were normalized by the maximum voluntary contraction (4 seconds) and the results were analyzed statistically using SPSS software. Analyzing the rest, the right laterality, left laterality, protrusion and bite force positions, the differences were significant at p<0.01, group 2 presenting the highest electromyographic means. It may be concluded that group 2 had greater muscular staple fiber conscription for the execution of the requested activities, probably, for the inadequate occlusal conditions presented by this group.

Fabrication of provisional prosthesis with acetate matrix: a clinical alternative

Linares, L.; Oliveira, P.C.G.

For any type of prosthetic treatment, from a single-tooth denture up to an oral rehabilitation, the fabrication of provisional crowns is a basic condition for treatment success. This is due to their key role in the biological protection (pulp and periodontal) to tooth preparation, in addition to reestablishing favorable oral conditions (DVO, guides, chewing, esthetics), thus providing the necessary information for settlement of an effective definitive treatment. In this way, it is imperative to elaborate provisional prostheses with the same diligence as that of the definitive prostheses, recovering esthetics and function, without increasing the cost of the treatment to the patient. It is known that provisional prostheses fabricated by indirect (laboratorial) technique presents advantages over the direct techniques with respect to their greater esthetic durability and better finishing and burnishing, which minimizes plaque accumulation. However, the high cost is inevitable and, many times, can render the treatment impracticable. This work presents an alternative to the fabrication of provisional crowns, using a plasticized polypropylene matrix, known as mixed or hybrid technique for fabrication of provisional crowns. This technique has the advantages of the indirect technique, however, with lesser cost and maintenance of the efficiency of the rehabilitating treatment. It is fabricated from the duplication of the diagnostic waxing model, which corrects tooth position and shape. The polypropylene matrix is formed in a vacuum plasticizer and trimmed. Next, the autopolymerizing acrylic resin is prepared and packed into the matrix and placed into the patient's mouth, guaranteeing a provisional crown with better adaptation and with all the advantages mentioned above.

Differences in psychological factors, pain intensity level and associated characteristics in myofascial pain patients with and without migraine

Gonçalves, P.Z.; Silva, R.S.; Merrill, R.; Conti, P.C.R.

Myofascial PAIN (MFP) has been associated with psychological impairment, especially depression and anxiety. Decreased function and increased disability have also been found. Headache, including migraine, is a common finding among these patients, and can be impacted by painful TMJ and facial muscles structures, as the pain pathways of both conditions are similar (trigeminal nerve). This work compared the differences in psychological factors, pain level and associated characteristics in myofascial pain patient with and without migraine. A total of 229 orofacial pain patients from UCLA Graduate Orofacial Pain Clinic with primary diagnosis of myofascial pain, according to the American Academy of Orofacial Pain (AAOP) criteria, were asked to complete the Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI), as well as visual analogue scale (VAS) questionnaires regarding pain intensity level (now, high, usual, low), mood level, disability level due to the pain, interference with jaw function level, and quality of rest. Patients with migraine were diagnosed according to the International Classification of Headache Disorders, second edition (ICHD-II) of the International Headache Society (IHS). T-test was used to detect differences between groups at a level of significance of 5%. From a total of 229 MFP patients, 197 were female (86%), and 71 (31%) had an additional diagnosis of migraine (MFP + migraine group). The significance level adopted was 5%. The MFP + migraine group presented higher levels for all variables in comparison to the MFP only group. However, only for anxiety (p=0.04%), highest pain intensity (p=0.01%) and quality of rest (p=0.01%) those differences were statistically significant. MFP patients with migraine had higher level anxiety, highest pain intensity and poorest rest comparing to MFP only patients. Further research is needed to clarify these differences. The authors wish to thank CAPES for the financial support.

Immediate rebase of class I removable partial denture: case report

Nery, K.F.; Oliveira, J.L.G.; Bonfante, G.; Valle, A.L.; Rubo, J.H.; Somensi, D.S.; Oliveira, P.C.G.

The rehabilitation of Kennedy Class I patients, employing remove partial dentures (RPD), is a very great challenge for the dentists, mainly concerning the posterior control of the prosthesis, because over the years, there is a tendency to loosen the adaptation from the basis of the prosthesis in relation to the alveolar ridge, due to the physiologic process of bone resorption. There are several factors related to the bone resorption process from systemic problems of the patients until imperfections on the prosthesis basis to the ridge may result in instability of the prosthesis, alterations on the centric occlusion, vertical dimension of occlusion reduction, metallic structure, loss of adaptation, occlusion strength, excess on the anterior teeth, TMJ alterations, tissues traumas and impaired mastication this way, recognizing that bone resorption is a know process and also irreversible, it becomes indispensable the performance of some procedures for the posterior control of these prostheses and one of these includes the performance of periodic rebase. Rebase is a clinical and laboratorial procedure employed to recover the prosthesis basal surface to the residual ridge, by filling of these structures with appropriate material. Thus it is possible to maintain the occlusal fitness, to favor the retention and stability to avoid damage to the tissues, to recover masticatory efficacy, avoid food accumulation between the prosthesis basis and the ridge, to eliminate the discomfort of lack of stability and favor the cleansing. This way, the objective of the present work was to describe the rebase procedure from the basis of a RPD presenting edentulous ridge by the immediate technique which is applied directly on the oral cavity by use of autopolymerizing acrylic resin.

Assessment of bond strength of thermally activated acrylic resin teeth after the action of ultrasound and disinfecting solutions

Ribeiro, A.B.; Mian, H.; Sato, S.; Silva, F.B.; Pedrazzi, V.

All prosthetic pieces must be carefully treated in order to maintain their biosafety and prevent cross-infections. On the other hand, the influence of physical and chemical treatment on bond strength of artificial teeth to acrylic denture bases is still a challenge. The purpose of this study was to compare the shear bond strength of double- and triple-layer artificial teeth (Biolux[®] and Trilux[®]) after the action of disinfecting solutions (Listerine[®], Cepacol[®], Periogard[®], enzymatic crust remover - Riozyme II[®] and 1% sodium hypochlorite and tap water, as a control) plus ultrasonication. Seventy-two specimens from each tooth type were obtained and included in cylindrical heat polymerized resin bases, originating 12 groups. Six of those groups were ultrasonicated with disinfectants for 4 cycles, 15 minutes each; the other 6 groups were immersed in the solutions for the same period of time. Bond strength means were obtained by means of a shearing test in a 2000 DL universal testing machine and the results were converted into MPa. The double pressed acrylic teeth presented shear bond strength means of 3.43 MPa, while the triple pressed acrylic teeth had shear bond strength means of 3.02 MPa. Statistical analysis using ANOVA and Fisher's LSD multiple-comparison test confirmed that triple pressed acrylic teeth presented lower bond strength when submitted to disinfectants in both assayed situations in comparison to the double pressed teeth. It may be conducted that ultrasonication and the tested disinfectants did not affect the bond strength of both types of studied acrylic teeth. The double pressed acrylic teeth presented higher shear bond strength than the triple pressed teeth.

Application of a rotational removable partial denture on the dental clinic: case report

Somensi, D.S.; Oliveira, J.L.G.; Rubo, J.H.; Valle, A.L.; Bonfante, G.; Nery, K.F.; Oliveira, P.C.G.

The rotational removable partial denture is characterized by the presence of two different axis of insertion in one single piece. Thus, the rests are positioned in two steps that follow the two trajectories of insertion. The possibility of utilization of a lay in a rotational way to the removable partial denture has shown to be a great ally during the planning phase, mainly in the resolution of Kennedy's Class IV, due to the unfavorable esthetic conditions imposed by the retention clasps which, if removed in a randomly way, can cause both biomechanical and functional impairments to the set. Therefore, the main advantage of using the rotational insertion axis resides in the fact that some clasps can be eliminated without any influence in the basic mechanical requisites of the right retainer: retention, support and stability. Moreover, the lack of these clasps results in a better esthetic and in the reduction in the amount of components over the tooth. When compared to the fixed prosthesis, the rotational removable partial denture is preferable concerning the preservation of the tooth structure, regarding the less amount of tooth preparation. This type of removable partial denture also shows a huge advantage over the removable prosthesis with interlocks of precision and semi-precision due to an easier construction, more conservative approach and lower cost. The removal of the prosthesis is made by an

inverse movement than the one employed during the insertion, which makes impossible the displacement in the vertical direction. This fact indicates the suitability of the rotational removable partial denture to palatal denture. Therefore, the main objective of this work was to demonstrate, by the report of a case, the particularities present in the planning of a rotational RPD and moreover, the esthetic result that this kind of prosthesis can provide.

Oral rehabilitation with implant-supported prostheses: a case report

Borges, A.F.; Rego, M.R.M.; Costa, L.C.S.; Mota, A.S.

A 67-year-old female patient presented with totally edentulous mandible and partially edentulous maxilla, with remaining teeth 13, 12, 11, 21, 22 and 23 restored with metal ceramic restorations. These restorations were inadequate functionally and esthetically, with pronounced buccal inclination. Radiographically, images suggestive of root fracture were observed on teeth 11, 12 and 13, in addition to poor periodontal implantation of all six remaining teeth. During planning and diagnosis, it was decided for the extraction of the remaining teeth and for the installation of osseointegrated implants and immediate fixed prosthesis for the maxillary and mandibular arches. For determining the correct buccolingual position of the anterior prosthetic elements of the provisional restoration, a Steiner cephalometric tracing was used for positioning the central incisor because the remaining teeth were not a good esthetic or functional reference as they were buccally tipped. Thus, surgical procedures were accomplished for extraction of the maxillary anterior teeth and for immediate installation of the osseointegrated implants (Neodent[®]) in the region of teeth 13, 11, 21 and 23. These implants presented initial stability higher than 35 Ncm and were used as supports for an immediate fixed provisional restoration replacing the teeth from 15 to 25. Four more implants were installed in the posterior maxillary regions, but did not present enough initial stability for immediate load. After 30 days, a new surgical procedure was accomplished for the installation of four osseointegrated implants (Neodent[®]) in the mandibular anterior region. Over these implants a fixed complete provisional restoration was installed, replacing the teeth from 36 to 46. The patient is now in the healing phase to allow the beginning of the fabrication phase of the definite restorations.

Effects of adhesive permeability, substrate hydration and polymerization mode on the bond strength of dual resin cements to dentin

Vidotti, H.A.; Carvalho, R.M.; Pegoraro, T.A.

This study investigated how reduction of water flow across the adhesive may affect coupling of resin cements with different curing modes to dentin. Indirect resin crowns were prepared and cemented to exposed, hydrated, flat dentin surfaces of human third molars using Panavia F (PAN) and Bistite II DC (BIS), with either the chemical (CC) or the light (LC) curing mode, as *per* manufacturers' instructions (control). One experimental group was prepared in a similar way, except that a layer of a non-acidic adhesive resin (Scotchbond Multi-Purpose Plus #3 - ExSBMP) was placed on the bonded dentin surface before luting procedures. Another experimental group was prepared with additional teeth that were dehydrated in ethanol (ExD) and bonded according to the manufacturer's instructions. Bonded teeth were stored in water for 24 h at 37°C, sliced into beams of 0.8 mm² and tested in tension at 0.5 mm/min. Means were obtained in MPa ± SD and data analyzed by two-way ANOVA (p<0.05). Capital letters/luting conditions; lower cases/materials conditions. Mean mTBS values for groups were as follows: CONTROL: PANCC, 25.3 ± 8.5Aa; PANLC, 23.3 ± 11.3Aa; BISCC, 26.2 ± 13.5Aa; BISLC, 33.8 ± 16.0Ba; ExSBMP: PANCC, 35.6 ± 15.6Bb; PANLC, 18.7 ± 9.5Aa; BISCC, 18.4 ± 9.7Aa; BISLC, 31.5 ± 12.0Ba; ExD: PANCC, 43.1 ± 11.0Bc; PANLC, 40.6 ± 12.2Bb; BISCC, 38.9 ± 12.2Bb; BISLC, 49.9 ± 11.8Bb. Reduction of water flow across adhesive by application of a non-acidic adhesive may not result in improved bond strength for all dual resin cements. Eliminating water from the substrate seems to be the most effective way to improve coupling of resin cements to dentin, regardless of the curing protocol.

Oral rehabilitation by osseointegrated implants in a patient with dental agenesis: case report

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Dental agenesis is relatively common on daily clinic and its resolution is problematic as far as esthetics s concerned. The osseointegrated implants allow not only a more biological resolution among recent proposals, but also a more esthetic result, mainly when associated with full porcelain crown in this clinical case, a 19 year old patient, searched for dental care looking forward improving her physical esthetic and mastication function. After a rigorous clinic and radiographic examination, it was observed that the maxillary and mandibular first premolars were missing and instead the patient had the primary first molars with complete root resorption. The treatment possibilities were analyzed and, considering the esthetics and the effectiveness of

the results, the proposal was the installation of osseointegrated implants and subsequently implant-supported full-porcelain crowns. In this case of dental agenesis, the oral rehabilitation with osseointegrated implants and all-ceramic crowns appeared as the best treatment modality because it met the patient's esthetic expectations, providing harmonic esthetics, preserving the integrity of the adjacent teeth and avoiding local bone resorption (because of the presence of the implant) and consequent activation and bone remodeling.

The role of myofascial pain in the etiology of chronic headaches

Bosso, R.; Sanitá, P.V.; Cesnik, R.M.; Júnior, F.G.P.A.

Myofascial pain (MFP) is a regional neuromuscular disorder characterized by the presence of hypersensitive points in the muscles (trigger points - TrP), being one of the most common causes of chronic orofacial pain. TrP can refer pain to a zone of reference and the patient may feel this pain as a headache. The aim of this study was to evaluate the role of MFP as a contributing factor to the etiology of chronic headaches in 316 patients. Headache diagnosis was established using the guidelines of the International Headache Society. MFP diagnosis was established performing palpation of the masticatory and cervical muscles in order to find TrP that would reproduce the headache. The results were submitted to percent analysis and showed that 24% of the patients could be diagnosed with tension type headache (TTH), 14% migraine, 58.5% TTH with some episodes of migraine and 3.5% with other headache types. Furthermore, 74.5% of the patients could be diagnosed with MFP and in 94.5% of these patients, headache could be reproduced during palpation of the TrP. Regarding the TrP that reproduced the headache, 60% were found in temporalis muscle. TTH was the type of headache with the higher reproducibility. However, migraine could also be reproduced in 58% of the patients diagnosed with it. The authors concluded that MFP is one of the contributing factors associated to chronic headaches, thus a clinical examination performed to diagnose this disorder would be recommended in chronic headache patients.

Implant-supported metal-ceramic crown on maxillary anterior region: case report

Miyashiro, M.; Suedam, V.

With the introduction of the "metal free" prostheses, metal-ceramic crowns have been related to several esthetic failures in the maxillary anterior region. In fact, these failures are due to an inadequate planning in metal-ceramic prostheses. The lack of thickness to apply an adequate porcelain layer, associated with lack of dentist's skills, lead to a poor esthetic result. In implant-supported prostheses, the application of an ideal porcelain layer on the cast metal provides a more favorable esthetic effect, making the crown practically imperceptible. The goal of this work was to describe a case in which an implant-supported metal-ceramic crown was made on the maxillary incisor region. Patient missing the maxillary left central incisor due to coronal fracture and posterior root fracture sought treatment. After tooth removal and alveolar bone new formation, the implant was fixed (3i Implant Innovations Inc.). After 6 months of osseointegration, a reopening procedure was performed and, 15 days later, a provisional restoration was made for gingival conditioning providing an adequate gingival contour. After that, color selection and transfer impression were done for the confection of a cemented metal-ceramic crown on a milled prefabricated titanium abutment. Porcelain esthetics was adjusted for shape and texture. After glaze, the crown was fixed with provisional cement. The cemented implant-supported metal-ceramic crown for maxillary anterior region was well indicated with no esthetic loss for the patient, following the guidelines of esthetics and biology.

Palpation of the lateral pterygoid area on detection of myofascial pain: sensitivity and specificity

Conti, T.R.; Silva, R.S.; Nunes, L.M.O.; Gelmini, M.; Conti, P.C.R.

RDC/TMD has been considered the gold standard in research as a way to diagnose TMD and its subgroups. Surprisingly, the intraoral palpation of the lateral pterygoid area is included as one of the muscle palpation sites, despite all the past findings showing that the procedure is anatomically imprecise. The goal of this study was to evaluate the validity of intraoral palpation of the lateral pterygoid area as part of the physical examination protocol to detect myofascial pain disorders, according to the RDC/TMD. Seventy-seven consecutive women, matched for age, were divided into 2 groups: 44 in the myofascial pain group and 33 without TMD signs and symptoms (control group). One calibrated examiner blinded to the groups performed 2 intraoral palpation of the lateral pterygoid area on each side, with a 5-minute interval between palpations. The responses were scored as 1 if negative and 0 if positive. If there was a tie, a third assessment was then performed. The sensitivity, specificity, negative and positive predictive values were calculated for analysis. The test detected 45.45% of true positives, 9.74% of false positives, 33.12% of true negatives and 11.69% of false negatives. Sensitivity and specificity were calculated as 79.55% and

77.27%, respectively. The specificity was below the 90% recommended by the literature, indicating a high number of false positive results. Positive and negative predictive values were 82.35% and 73.91%, respectively. The method used by the RDC/TMD criteria to make a myofascial pain diagnosis should be revised, based on the findings of the present study, specially the very low specificity. Further investigation is necessary to confirm these results. The authors wish to thank FAPESP - Brazil - Grant #04/13160-7 for the financial support.

Effect of experimental chewing on the masticatory muscle pain onset

Leme, V.S.P.; Silva, R.S.; Nunes, L.M.O.; Yassuda, S.; Conti, P.C.R.

Muscle pain is the most prevalent of TMD subtypes. There is no consensus whether or not mastication can produce or aggravate muscle pain. The goal of this study was to analyze the effect of an experimental chewing exercise on the masticatory muscle pain. Twenty-nine women with myofascial pain (RDC/TMD) with an initial visual analogue scale (VAS) above 30 mm, and 15 women, free of TMD signs and symptoms, were selected for this study. Baseline pressure pain thresholds (PPT) was obtained bilaterally on the masseter, and anterior, medium and posterior temporalis muscles. VAS assessed the baseline report of pain intensity. The individuals were then asked to chew a gum (Trident) for nine minutes on the preference side (right or left). Every 3 minutes during chewing a VAS should be scored (VAS3, VAS6 and VAS9). After the exercise (9 minutes), the PPT was recorded one more time. Afterwards, the individuals were submitted to a rest period of another 9 minutes. Additional VAS was scored at 12, 15 and 18 minutes. Right after the rest period, a new PPT assessment was performed. Friedman test and Student-Newman Keuls ($\alpha=0.05$) were used for the statistical analysis. A significant increase on the pain levels for both VAS and PPT was noted in the experimental group, in comparison to the control group. Pain levels on the TMD patients were higher after the 9 minutes of chewing compared to baseline. The reduction on the VAS scores was more pronounced than the one on the PPT values in the experimental group after the rest period. The present study corroborates the harmful effect of masticatory function on the muscle pain. Therefore, patients should be asked to avoid hard foods or prolonged chewing. The authors wish to thank CNPq-Brazil for the financial support.

Functional and esthetic immediate rehabilitation in an aged patient with osteoporosis

Alves, S.V.; Montandon, A.A.B.; Fais, L.M.G.; Tibério, D.; Santos, M.T.B.R.; Pinelli, L.A.P.

The treatment of an aged patient with dental integrated requirements demands a multidisciplinary and individual vision that is planning for your reality. The patient O.V.C., 70 years old, with osteoporosis diagnosis, looked for dental treatment because of dissatisfaction with her chewing efficiency and esthetics, muscular fatigue, temporomandibular joint pain, in addition to pain in spinal column and legs. The aim of this study was to show the specificity and importance of an exam that includes an evaluation of the systemic condition, use of medications, cognition (Mini Mental State Examination), depression level (Geriatric Depression Scale) and dental evaluation in the proposed and executed treatment. After rigorous clinical interview, it was observed that the patient did not present indications of cognitive compromising or depression, but she was very anxious for an improvement of the functional and esthetic conditions. There was the need of recovery of the reverse curve of the smile, vertical dimension of occlusion and accentuate wear in the teeth of her removable dentures. However, due to the strong pain, the treatment needed to be accomplished in four sessions. The treatment involved periodontal procedures, recovery of the vertical dimension of occlusion with acrylic resin on the posterior teeth of her removable dentures, cosmetic dentistry for incisal guide determination, and placement of acrylic resin veneers in the anterior teeth of the maxillary denture. It was concluded that, with the proposed treatment, the smile and the patient's chewing efficiency was recovered temporarily in a satisfactory way, contributing to a better planning of the definitive rehabilitation and with positive results for the patient's quality of life.

Stress distribution in implant-supported RPD: periodontal ligament influence on internal stress distribution - FEA analysis

Archangelo, C.M.; Pereira, J.A.; Junior, M.M.; Junior, A.C.F.; Rocha, E.P.

The application of diverse hypotheses in a finite element analysis (FEA) model has been critical to obtain precise results in the treatment with implant-supported removable partial denture (RPD). In view of this, the aim of this study was to assess, by means of a two-dimensional FEA, the internal stress distribution of a distal extension RPD (DERPD) associated with an osseointegrated implant, considering the homogenous and non-homogenous reproduction of the periodontal ligament (PL). For such purpose, 6 models (M) were created, representing the following: MA - hemi-arch containing tooth 33 only and the edentulous distal alveolar ridge; MB - similar to MA, but with DERP replacing the absent teeth; MC - similar to MB,

with an implant (3.75 x 10.0 mm) supporting the denture in the posterior region; MD, ME and MF – similar to models A, B, and C respectively, except for PL, which was modeled in a non-homogeneous form, considering the following 4 groups of fibers: crest, horizontal, oblique and apical. Like this, as result, the maximum stress concentrations (in MPa) were as follows: MA (58.976); MB (77.863); MC (207.195); MD (110.33); ME (191.36) and MF (326.60); the non-homogeneous PL highlighted the benefits of the implant, drastically reducing the stresses on the posterior ½ of the alveolar ridge; furthermore, the variation in the acting stress values was lower under the non-homogeneous condition. The conclusions were: The PL in the non-homogeneous form emphasized the benefits of the osseointegrated implant in relation to the abutment structures in a more pronounced manner than the homogeneous condition, and is essential for obtaining results that corroborate the previous clinical data as the maximum stress values, the variations among the models and the internal stress distribution were found to be in agreement with those established by the literature.

Pain and electrical activity of anterior temporal and masseter muscles across menstrual cycle in oral contraceptive users and non users

Batista, F.R.S.; Garcia, A.R.; Sundefeld, M.L.M.M.; Zuim, P.R.J.; Mori, G.G.; Turcio, K.H.L.

Electric activity and pressure-pain threshold of the temporal and masseter have been used in the diagnosis of some disorders that cause pain, such as the temporomandibular disorders (TMD). As the majority sufferers of the TMD are women, it is possible that hormone fluctuation across menstrual cycle predisposes to these disorders. The aim of this study was to analyse the electrical activity and pressure-pain threshold of anterior temporal and masseter across menstrual cycle. Twenty-eight women at reproductive age were selected to the research. Thirteen were oral contraceptive users, and 15 were non users. All of them answered a questionnaire and were submitted to electromyographic exams and algometry of the muscles during three consecutive menstrual cycles. The results permitted to verify that pressure-pain threshold and the electrical activity of both muscles during rest and during chewing did not demonstrate statistically significant difference across menstrual cycle. However, work side temporal activity was significantly more elevated in oral contraceptive users than in non users. It may be concluded that pressure pain threshold and electrical activity did not vary during different phases of menstrual cycle, but anterior temporal muscle demonstrated significantly higher activity in oral contraceptive users.

Parafunctional habits and the stomatognathic system

Cunha, C.O.; Lima, R.T.; Bonfante, G.

The functional activities of the stomatognathic system are described as chewing, swallowing, phonation and breathing. However, part of these activities is parafunctional. This kind of parafunctional activity damages the structures of the system from the moment at which it exceeds the individual's physiologic tolerance. Likewise, physiologic tolerance and signals and symptoms that parafunctional activity can cause vary for each person. It is also known that these habits can be destructive in terms of physical, emotional and/or social effects. The parafunctional habits (PH) can occur during awakeness and/or during sleep. During awakeness, the habits are accomplished, generally, unconsciously and include tooth clenching and grinding, lip, tongue and cheek biting, chewing gums and drops, nails and objects biting, tongue thrusting and jaw play. During sleep, the unique PH accomplished is bruxism. During the last decades, several authors have demonstrated that damages to the stomatognathic system affect mostly teeth, periodontium, muscles and temporomandibular joint (TMJ). Recently, in 2005, Glaros et al. ratified that dental wearing and/or fracture occurs due to prolonged occlusal contact accomplished during tooth clenching and grinding, or also due to biting of nails and objects. These PH can damage periodontal tissues, which can react with dental movements and progressive mobility. In 2006, Winocur stated that PH are risk factors for temporomandibular disorders. Damages to masticatory muscles and TMJ, separately or conjunctly, were related to PH of chewing gum and jaw play, among others. Studies noted that there is a great relation among habits and the emotional tensions, mainly stress and anxiety. The aims of this work were to present the identification of PH and the damages that PH can cause to the stomatognathic system, and suggest means to diminish or eliminate the occurrence of PH and their possible damages.

Periodontology and Prosthesis integration on the planning of implant-supported dentures and fixed partial dentures, aiming at excellent anterior esthetics

Ferreira, F.M.; Novais, V.R.; Júnior, P.C.S.; Prado, C.J.; Nóbilo, M.A.A.; Neto, A.J.F.

Patients are more demanding with dental treatment in relation to esthetic, functional and biological aspects. Therefore, a comprehensive analysis about teeth, lips, gingiva and face is necessary to oral rehabilitation success and to provide a harmonic smile.

The interaction of gingival tissues and teeth is fundamental to optimal esthetics of prostheses when the anterior superior region is involved. Thus, care with periodontal tissues is important in prosthetic planning to obtain esthetics, function, better hygienic and good phonetics. The formation of interdental or interimplant papilla and the reconstitution of gingival concave arch are goals of current Dentistry in order to optimize the final esthetic aspects in implant-supported dentures and fixed partial dentures, making that the prosthetic pieces mimic the natural dentition in relation to their emergence profile. The aim of this work was to discuss several techniques of planning, such as gradual pressure, surgical techniques and artificial gingiva, aimed at achieving a better relationship between periodontal tissues and prostheses.

Occlusal adjustment after orthodontics: case report

Camargos, G.V.; Neto, A.J.F.; Rodrigues, M.M.; Silva, M.R.

Occlusal adjustment has had a long and troubled history because of empirical approaches owing to unfamiliarity with the acceptable biological principles (total function of the stomatognathic system), introduction of the concept of bilateral balanced occlusion and practice of prophylactic adjustment. The therapeutic behavior for occlusal adjustment considers modifications in the occlusion (on the surfaces of teeth, restorations or prostheses) by means of selective dental tissue removal or addition of restorative materials, seeking to harmonize the functional aspects of the maxillo-mandibular complex in centric relation occlusion and the eccentric movements. This technique is indicated when signs and symptoms of traumatic occlusion are present and the occlusal relations can be improved by the adjustment, before extensive restorative treatments, and for stabilization of the outcomes of orthodontic treatment and oral and maxillofacial surgery. In this context, the patient of this case presented signs of bone and dental structure loss (abfraction and wear facets) resulting from a traumatic occlusion after orthodontics. Thus, with the primary objective of improving the functional relations of the dentition, so that the patient could undergo periodontal esthetic surgery, occlusal adjustment was indicated to establish the anterior guide in the mandibular eccentric movements, eliminating the occlusal interferences. This approach was preceded by the clinical stages of taking impressions, obtaining the study models for further assembly in a semi-adjustable articulator, and mapping the interferences in the articulated models. After completion of the adjustment, canine guides were obtained as well as occlusal stability.

Interrelation between Prosthodontics, orthognathic surgery, and dental implants in oral rehabilitation of subjects with cleft palate

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Reverse planning has an extreme importance on implant-supported prosthesis. Planning gives subsidies necessities to evaluate ways to manage and execute treatments. A case report evaluating the importance of reverse planning in complex cases, involving Prosthodontics, dental implants and orthognathic surgery is presented. A 39-year-old female patient with cleft palate and severe atrophic upper jaw, edentulous upper and lower jaws was seen at the dental service of the HRAC-USP four years ago needing implants and fixed prosthesis to prepare for a future orthognathic surgery. All remaining teeth were removed and 6 upper and 4 lower implants were installed with the purpose of installing upper and lower fixed prosthesis. After implant transference and during trial denture the amount of resin and the esthetics and phonetics of the patient were evaluated. After bite recording, cast models were mounted in semi-adjustable articulator (SAA) and prostheses were made having the discrepancy corrected. Prostheses were inserted and impressions obtained. Cast models were mounted again in SAA in order to accomplish surgical planning. During orthognathic surgery, upper and lower jaws were manipulated until assuming an ideal position similar to the planned one. Two surgical guides were confectioned (upper and lower jaws were manipulated until assuming an ideal position similar to the planned one). Three months after surgery, a new upper interim prosthesis was fabricated in order to improve esthetics and occlusion. In this case, 90% surgical, the reverse planning was extremely important to define the treatment plan and not to raise false expectations to the patient with only the prostheses and dental implants.

Tooth-implant union in oral Prosthodontics: report of two cases

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Prostheses with tooth-implant union are a reason of controversy in Dentistry and require more studies. However, in certain clinical situations, these prostheses are employed in the same cost-effectiveness level as that of other prosthetic solutions. Thus, the patient, duly informed of the complexity of its clinical situation, will opt for the best treatment modality, and the tooth-implant union may be the most indicated. In this context, this work reports two longitudinal follow ups (8 and 5 years) of prosthetic rehabilitation, showing the success of this type of union. In the first case,

3 implants were placed in the region of the spaces of teeth 21 and 22 and reestablished the Roy Polygon in association with natural teeth of other plans. In the second case, 3 implants were installed and added to the natural teeth, in a type of implant-supported denture based on force distribution on the Roy Polygon. It is important to point out that, in the first case, the treatment options were: isolation of posterior teeth (total crown), bone graft, and cantilevers of two previous teeth (11 and 12) or 6-element partial removable denture (PRD). In the second case, a class I PRD could have been fabricated, with tooth 14 being a direct pillar with 1:1 crown/root ratio, and separation of the segments. The construction of implant-supported or tooth-supported dentures alone was not compatible with the patient's economical conditions. Therefore, it is important that dental examination includes evaluation of the type of pillar, soft tissue and bone support to be used. Situations similar to those reported in these cases may appear in the clinical practice and will raise the question: prosthesis with tooth-implantation union "cannot or should not" be used as solutions in certain cases oral rehabilitation?

Reconstruction of the smile with laminated porcelain veneers

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The greatest challenge when establishing esthetic excellence is to create harmony of the teeth with the oral components without leaving aside the knowledge and application of specific principles. This avoids the fabrication of prosthetic pieces out of the esthetic standards and clinical failure. The present study presents a case of a 53-year-old male patient who needed esthetic modification of the maxillary anterior region. The maxillary anterior teeth were in good clinical conditions but had compromised anatomy. Teeth 13, 11, 21 and 23 had large diastemas. Teeth 12 and 22 presented worn edge. In addition, the mesial of the teeth 11 and 21 had old fillings previously done in an attempt to close the spaces. The line formed by the incisal border was not compatible with the lower lip and teeth. In contrast with the negative space, they were not in harmony, compromising the oral esthetics and causing a negative visual impact. For planning and diagnosis, study models were obtained. The patient was submitted to a simulation of the final result (Test Drive) by a direct reproduction of the previously obtained study models. The proposed treatment was in-office bleaching associated with at-home bleaching and fabrication of laminated porcelain veneers (IPS Empress II) for teeth 13, 12, 11, 21, 22 and 23. The final veneers reproduced the color, texture and optical qualities of the dental enamel in total harmony with the antagonistic arch, oral region and the patient's face as a whole. Therefore, it may be concluded that it is possible to reach esthetic and functional success in the anterior dental region as far as basic principles are respected during treatment planning.

Public Health

Evaluation of oral health importance according to the perception of hospitalized patients

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The presence of dentists in hospital settings is the result of the progresses reached in the formation of a multidisciplinary and integrated team with the goal of offering to the hospital users a larger number of health services. The aim of this study was to evaluate the importance of oral health according to the perceptions of hospitalized patients in a specialized trauma service in the city of Araçatuba, Brazil. 64 patients were enrolled in this descriptive and transversal study. An open-ended questionnaire was used for data collection and later the analyses were conducted using Epi-Info 2000 v.6.04 statistical program. The results showed that there was a predominance for the 21-30-year-old age range (40.62%) and male population (68.75%). Half of patients affirmed that they had their last dental visit within the past 6 months to 1 year due to periodontal problems (35%) and caries (20%). Regarding the self importance of teeth, 50% reported esthetics, 34.38% mentioned chewing and feeding, 6.25% cited function and 9.37% answered that the teeth are "the life equilibrium". Most respondents (90.63%) believed that the role of the dentist in a hospital setting would be "the care of teeth". It may be concluded that all patients considered oral health important and believed that the presence of a dentist in the hospital staff would be important to help in the promotion of integral health.

Educative tasks for schoolchildren in the state of Rondônia: experience report

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The present study aims at presenting an educative-preventive experience work carried out at Mato Grosso School in the city of Monte Negro/RO with primary schoolchildren aged 6 to 10 years. The tasks were carried out in a playful manner in order to allow the children having a better understanding of the tasks. Firstly, an

educative theater play was performed focusing on oral health and speech, language and hearing health, with special emphasis on brushing techniques, non-carious diet, general hygiene techniques and guidelines on hearing, vocal health and deleterious habits. Secondly, a recreational educative activity was performed in which a track was used to ask questions about oral and speech, language and hearing health, based on the themes that had been brought up during the theater play. The winner would be the team that walked more spaces of the track, which was indicated by means of a dice, as the participants answered to the questions correctly. After these educative activities, all children performed supervised toothbrushing, separating them by room and using the Bass technique to guide the process. A total of 337 children took part in this activity, receiving, in a playful manner, instructions on oral and speech, language and hearing health during the class period, thus adding extra information to the activities that are part of the beginning of the school year. It may be concluded that the activities provided a greater level of instruction on oral and speech, language and hearing health to the children, who absorbed the information with a high degree of accuracy of the questions and also appeared quite motivated to do the toothbrushing.

Influence of primary attention and infantile growth on dental caries in preschool children from Borebi, SP

Silvério, M.A.; Oliveira, M.F.S.; Lauris, J.R.P.; Tomita, N.E.

Dental caries is strongly associated with the socioeconomic conditions. In addition to receiving little oral health care, children from low-income families can also have growth deficits. The objective of this study was to evaluate the influence of the socioeconomic level on oral health conditions and infantile growth in preschool children. The targets of this article were children aged 4-6 years living in Borebi, SP, Brazil. During the visits to these children, the following activities were performed: oral examination, using oral mirror and periodontal probe (WHO 1997); socioeconomic evaluation of the families using a questionnaire answered by parents/guardians; anthropometric measures were taken (height was measured with a tape measure in millimeters and weight was determined with a digital weighing-machine accurate to 100 g). 75 children were examined of which 46.67% were female and 53.33% were male; 92% attended preventive programs; 50.67% were caries free and the DMF-T index was 1.83. No statistically significant association was observed between the socioeconomic level, infantile growth and dental caries. There was statistically significant negative correlation ($p < 0.05$) between height/age index and DMF-T index, denoting that the more favorable the child growth, the better the oral health conditions. However, it is important to highlight that 92% of the children attend preventive programs in their schools and that the city has 100% of coverage of the Government's Family Health Program, with important repercussions on infantile health situation.

Epidemiology of dental caries in adolescence: influence of primary attention

Oliveira, M.F.S.; Silvério, M.A.; Lauris, J.R.P.; Tomita, N.E.

Many variables have been associated with the occurrence and distribution of dental caries. The objective of this study was to evaluate the influence of the socioeconomic variable on oral conditions and growth in adolescents aged 11, 12 and 13 years in the city of Borebi, SP. The development of oral health actions in the primary attention level and their repercussion on dental caries prevalence was also verified. The adolescent growth (height and weight measures) and its association with dental caries were also evaluated. Home visits were done and, after granting parental consent, a socioeconomic questionnaire was applied as well as oral examination and anthropometric measures of the adolescents were done. 108 adolescents were examined and a mean DMF-T = 2.29 was obtained. Statistically significant associations between family income and adolescent anthropometric measures were found ($p < 0.05$). 21 examined adolescents were caries-free and 24 of them presented DMF-T = 1, this was the most frequent index recorded. 40% of the visited families had a mean monthly income between 1 or 2 minimum salaries. These findings demonstrate the effectiveness of the primary attention to oral health, as most of adolescents presented low DMF-T, even those belonging to families with low socioeconomic conditions. Maximum DMF-T found was 8, in only 3 adolescents; however they had recently moved to the city and were not attending any preventive programs before. It is important to highlight that 98.15% of the examined adolescents attended preventive programs in their schools and that the city has 100% of coverage of the Government's Family Health Program, with important repercussions on the adolescents' view of health.

Knowledge of physical education students from Campo Grande/Brazil of prevention and emergency management of dental trauma

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The aim of this study was to evaluate the level of knowledge of students attending the last year of the Physical Education Course at two Universities of Campo Grande, MS/Brazil (UNIDERP – University to the Development of the State and the Pantanal Region, and UCDB- Dom Bosco Catholic University, Brazil) of prevention and emergency management of dental trauma. A questionnaire was applied to 53 students. Over 73.6% of the interviewees did not know how to proceed on the management of dental trauma. In case of avulsion, 54.7% reported that they would keep the tooth dry and send the subject to the dentist; 15.1% would throw it away and 3.8% would wash and replace it. Regarding crown fracture, 88.7% would keep the fragment and refer the subject to the dentist; 9.4% would throw the fragment away. From the total students interviewed in this study, 64.2% knew about the use of mouthguard and 22.7% reported to have used this device. It may be concluded that educational campaigns are necessary to these students, future physical education professionals, regarding the importance of prevention and emergency management in case of tooth injuries.

Treatment of functional unilateral crossbite with Planas direct tracks in public health

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Since 1992, the Preventive Dental Area of the Federal University of Uberlândia has been rendering the “Oral health promotion program for babies and pregnant women”. Several occlusal-functional alterations are observed in the primary dentition. One of the most often observed types of malocclusion is unilateral crossbite with mandibular postural deviations. Knowing the low socioeconomic level of the families assisted by the program and their small probability of seeking orthodontic treatment in the future, we decided to intervene with educative, preventive actions and treatment, to decrease the incidence and prevalence of these alterations, as it has been demonstrated that the incidence of malocclusions increases with age. The use of Planas direct tracks not only shows efficiency in treating unilateral crossbite (positioning the deviated mandible plane and returning to it to its occlusal balance), but also in rehabilitating the masticatory function, as it positions the mandible and the condyles at the temporomandibular joints. This will favor bone remodeling and occlusal balance of soft and hard structures of stomatognathic system with the physiological possibilities of bone remodeling at this age. As a consequence, this approach is expected to prevent malocclusion aggravations in adulthood. The treatment is based on the principles of the functional orthopedics of the jaws (Simões, 2003) and neuro-occlusal rehabilitation (Pedro Planas, 1997)

Epidemiological survey on the use of fluoride dentifrice and estimation of fluoride intake by children

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Dentifrices are considered as a source of chronic exposure to fluoride (F) by preschool children, being associated with the development of dental fluorosis. Thus, the aim of this study was to estimate fluoride intake from dentifrice by 0-5-year-old children, residing in the city of Bauru, SP. During a vaccination day, in 2006, 768 parents or persons responsible for the children were personally interviewed about (1) their educational status; (2) children's age; (3) toothbrushing habits (frequency, dentifrice brand and amount applied onto the brush); (4) whether children used to eat the dentifrice directly from the tube or if they used to ingest the paste during toothbrushing; and (5) their knowledge about preventive and toxicological properties of F (dental fluorosis). Data were submitted to descriptive analysis and to chi-square test ($p < 0.05$). More than 70% of children brushed their teeth 2-3X/day, and the most used dentifrices were Tandy (34.5%) and conventional Colgate – for adult use (21.5%). Regarding F intake, approximately 50% of children used to swallow part of all the dentifrice put on the brush and 24% used to eat the dentifrice directly from the tube. The amount of paste most frequently used was, approximately, 0.15-0.30 g, ranging from 0.02 to 0.70 g, according to pre-determined scores. Parents' educational status was positively associated to their knowledge of preventive and toxicological aspects of F and also to toothbrushing frequency. An inverse relationship was observed between knowledge about dental fluorosis and the amount of paste used. It is suggested that fluoride dentifrices can be considered as a risk factor for the development of dental fluorosis in this population and that preventive measures must be implemented, especially directed to populations with the lowest educational status.

Dental treatment to improve the life quality of aged patients with rheumatoid arthritis

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The treatment of aged patient needs attention, evaluation and specific planning in order to address to their oral, systemic and psychical health characteristics, in addition to their social reality. A 67-year-old patient sought dental treatment because of dissatisfaction with her chewing efficiency and esthetics. After evaluation of the systemic condition, use of medications, cognition and depression status, the intraoral clinical examination the need of periodontal, endodontic, surgical and restorative treatments. The patient had hypertension and rheumatoid arthritis with compromised manual dexterity during oral cleansing. She referred pain on gasping the toothbrush handle. The treatment plan temporarily rehabilitated the patient and included integrated procedures, including cosmetic diastema closing and transformation of the canine into lateral incisor. Two provisional removable dentures were constructed. The toothbrush handle was customized to provide a better toothbrush grasp, thus eliminating pain and cramps and improving oral cleansing and maintenance of good oral conditions. The treatment also was addressed the control of hypertension and contributed to improve the patient's life quality. In conclusion, this case report confirms the importance of a multidisciplinary approach and a comprehensive global evaluation in geriatric dentistry.