

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 intercuspation 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 intercuspation 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

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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

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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

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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

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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

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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

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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

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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.