

6th DENTAL CONGRESS OF BOSNIA AND HERZEGOVINA WITH INTERNATIONAL PARTICIPATION

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ORAL PRESENTATIONS

TEETH WHITENING

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Introduction: Teeth whitening is one of the most popular procedures in cosmetic dentistry today, and its popularity is rising. The materials used for teeth whitening remove stains and discolorations from the teeth surface. Bleaching can be achieved in practice by a professional person or at home.

Elaboration: Teeth are whitened to remove the effects of coffee, cigarettes and other substance that permanently stain or discolor teeth. Medications such as antibiotics like tetracycline may discolor teeth. Furthermore, aging also causes teeth to lose their bright color. The natural shade of teeth is best considered as such an off-white, bone-color rather than pure white. Public opinion of what is normal teeth shade tends to be distorted. Portrayals of cosmetically enhanced teeth are common in the media. In one report, the most common tooth shade in the general population ranged from A1 to A3 on the VITA classical shade guide.

Whitening methods include: in-office bleaching (applied by a dental professional), treatments which the individual carries out at home (but supplied and guided by a dental professional), and at home methods (without dental professional guidance).

Conclusion: Teeth whitening is a method of restoring the natural tooth color, or whitening of an existing tooth color. Substance mostly used for teeth whitening is carbamide-peroxide or hydrogen-peroxide. There are theories that carbamide-peroxide is less effective than hydrogen-peroxide, but it also has fewer side effects. Common side effects of teeth whitening are increased tooth sensitivity and irritation of gums.

Keywords: teeth whitening; hydrogen peroxide; postoperative tooth sensitivity

EFFECTS OF LED LIGHT QUALITY ON HARDNESS AND DEPTH OF POLYMERISATION OF COMPOSITE RESINS

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Purpose: The aim of this study was to evaluate the effect of light intensity, exposure time and distance of curing tip, on mechanical properties of composites.

Materials and methods: Specimens made of one composite material (Tetric Evo Ceram-Ivoclar Vivadent AG, Schaan, Lichtenstein/shade A2) are polymerized with 12 polymerization protocols, made of three different light intensities (Quartz-tungsten-halogen (QTH 300 mW/cm²; LED 650 mW/cm²; LED 1100 mW/cm²), two exposure times (20 and 40 seconds) and two distances of curing tip (0 and 8 mm). Vickers microhardness of top (VMH-T) and bottom (VMH-B) surface and depth of cure (DC) were measured.

Results: Extending of exposure time produced a significant rise of VMH-B (P<0,004; P<0,051) and DC (P<0,009). Light-intensity did not have significant influence on VMH-B and DC. Distance of 8 mm had a significant influence on reduction of VMH-B (P<0,024), DC (P<0,01, P<0,014). At distance of 0 mm the best polymerization effect was registered with high-intensity 650 mW/cm², at duration of 40 seconds. At distance of 8 mm, higher intensity produced better mechanical properties, but the differences were not significant.

Conclusion: Exposure time and distance are more important factors of light polymerization than light-intensity. Light with high intensity at distance 0 mm, can generate huge amount of heat that can damage a pulp.

Keywords: dental composites, polymerisation light, microhardness, depth of cure

DIFFERENCES IN PRESENCE OF ORAL CANDIDA ALBICANS BETWEEN HEALTHY CHILDREN AND CHILDREN AFFECTED BY DIABETES MELLITUS TYPE 1

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Goal of the research was to determine the differences of frequently *Candida albicans* has occurred in oral cavity of children affected by diabetes mellitus type 1 and healthy children.

Material and method: 90 examinees were introduced into research, schoolchildren aging 12-18 living in area of the Sarajevo Canton. Experimental group consisted of 60 examinees who were diagnosed with DMT1. This group was divided into two subgroups: 1A with 30 participants who have controlled HbA1c and B1 with 30 participants who have increased value of HbA1c. Boundary value of HbA1c was 6.8% for participants of the subgroup 1A, and for participants of the subgroup 1B was higher than 6.8%. In controlled group, healthy examinees were involved. Sample for microbiological analysis was taken from labial and buccal mucosa by energetic moves and sterile smear, which were transported into the laboratory within two hours. Homogenization was done in Vortex mixer in the duration of 30 seconds and semination on Sabouraud agar. Examination of the presence of porcelain white colonies of *Candida albicans* was done after aerobic incubation, which lasted 48 hours.

Results: In the group consisted of diagnosed participants higher percentage of *Candida albicans*

presence was determined (60.0%). In the group of healthy participants 43.3% of the same was determined. Rate of *Candida albicans* among examinees with well metabolic control of HbA1c is 46.7%, while the percentage among examinees with poor metabolic control is higher, 73.3%.

Conclusion: Difference in the presence of *Candida albicans* between healthy participants and those with well metabolic control is insignificant, while the difference among participants with poor metabolic control is much greater.

Keywords: Diabetes mellitus, metabolic control, *Candida albicans*

WASHING AND BRUSHING YOUR TEETH – A HABIT OR A COMMITMENT

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Introduction: Oral hygiene/washing and brushing teeth/ is one of the preconditions for clean and healthy oral cavity. Without oral health there is no healthy population. With preventive programs we need to try and raise the awareness of our little ones about the importance of oral hygiene.

Materials and methods: Children from 5th – 9th grades of "Rešad Kadić" Elementary School from Tešanj were included into the analysis. With the questionnaire, we wanted to get answers on some questions which would help us to make certain conclusions regarding brushing and washing of teeth and to help parents regarding this.

Working results: The survey covered all children from the 5th – 9th grades of the School mentioned above. In total of 197, 103 were boys and 94 girls. The survey showed that all children have own toothbrushes, that they most commonly brush their teeth in the morning and in the evening, that they like candy and chocolate most of all the sweets, that most of them wash their teeth without the presence of parents, that almost all of them visited a dentist at least once and that they dedicate time to the hygiene of the mouth and teeth even more, as their mouth and teeth mirror their health.

Conclusion: Attending educative lectures, socializing with children and pointing out the flaws

that children have related to hygiene of the mouth and teeth, as more as possible.

Keywords: Children, brushing and washing teeth, survey.

MULTIDISCIPLINARY CO-OPERATION IN ORTHODONTICS

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Introduction: Orthodontics is a field of dental medicine dealing with rectification of the wrong position of the tooth and the relationship between the jaw during growth and development, and later during life. It implies the co-operation of several doctors, specialists and subspecialists in various fields, as today, only team work can provide superior service to the patient. Contemporary dentistry, precisely through multidisciplinary approaches to each patient, adequately responds to the patient's demands for the ideal aesthetics. Based this, the aim of the paper was to determine whether there is a need for multidisciplinary co-operation in orthodontics and whether the intensity of need for co-operation is the same in all areas of dental surgery due to the patient's demands for ideal aesthetics.

Material and Method: The survey method is used for the research, and 29 private practices were surveyed. The collected data were processed using descriptive statistics methods, and hypotheses were tested with a Chi-squared test. The survey consisted from two parts. The first part contains general data, while the second part contains questions on which multidisciplinary co-operation in orthodontics can be determined. The survey contains a total of 21 questions.

Results: Research showed that there is real need for multidisciplinary co-operation in orthodontics. In addition, it has been established that the intensity of need for co-operation is not the same within all areas of dentistry. The most common reasons for visiting the orthodontist are actually aesthetic reasons, and far less functional reasons.

Conclusion: After surveying and processing data from the survey it can be seen that there is a need for multidisciplinary co-operation in orthodontics to meet the patient's demands for a better aesthetic and functional appearance.

Keywords: Multidisciplinary co-operation, orthodontics, prosthetics, periodontology, oral surgery.

INTERLEUKIN-6 IN SALIVA OF PATIENTS WITH CHRONIC AND AGGRESSIVE PARODONTITIS

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Introduction: IL-6 as a biomarker has a great potential as a diagnostic parameter for diagnosis and monitoring of periodontal disease activity. Goal is to determine the reliability of this method for determining the value of IL-6 in saliva of patients with periodontal disease.

Materials and methods: Study involved 20 patients diagnosed with chronic parodontitis and 20 patients diagnosed with aggressive periodontitis. Diagnosis of the disease was based on: anamnesis, clinical examination and rtg of orthopantomographic analysis of the image (OPG). Inclusion criteria included subjects aging 18-50 not been periodontologically treated before. Excluding criteria were the existence of systemic illnesses, the use of antiseptics and antimicrobics. All saliva samples were analyzed using Salimetrics 1-3602-Interleukin-6 Salivary Immunoassay Kit by Salimetrics, USA.

Results: The mean value of interleukin-6 in patients with chronic parodontitis is 16.17 ± 2.9565 pg / ml and in patients with aggressive periodontitis 33.2725 ± 18.6037 pg / ml. There is a statistically significant difference in IL-6 values of the two groups ($p = 0.04098, p < 0.05$).

Conclusion: Level of IL-6 in saliva can give us significant data on the presence, form and severity of the periodontal disease.

Key words: interleukin-6, salivary, periodontitis, biomarker.

RELATIONSHIP BETWEEN DENTAL AND SKELETAL MATURATION OF CHILDREN IN BOSNIA AND HERZEGOVINA

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Introduction: The objective of this study is to determine the relationship between dental calcification stages, skeletal maturation and chronological age of children in Bosnia and Herzegovina.

Material and methods: Panoramic and cephalometric radiographs of 102 patients (49 male and 53 female) between 7 and 14 years old were evaluated using Demirijan method for dental age assessment and Baccetti method for skeletal age assessment. Stages of tooth calcification were evaluated for incisors, canine, premolars, first and second molar in left mandibular quadrant. Cervical vertebrae calcification was evaluated for the Baccetti method. The relationship between the stages were assessed using Spearman's correlation coefficient.

Results: Dental calcification stages showed positive and statistically significant correlations with vertebrae maturation stages ($r = 0,316$). The highest correlation was between the mandibular left canine with vertebrae maturation stages ($r = 0,529$) and the lowest correlation was between the mandibular left first molar with vertebrae maturation stages ($r = 0,002$).

Conclusion: Positive relationship between dental calcification stages in mandibular left quadrant and skeletal maturation stages by cervical vertebrae methods in the sample studied.

Keywords: Dental calcification, Skeletal maturation

LOCAL APPLICATIONS OF CORTICOSTEROIDS IN THE TREATMENT OF EROSION-ULCEROUS LICHEN PLANUS

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Introduction: Lichen planus is a mucocutaneous disease, which cause is still not clearly defined. Often, the cause of LP is inherited, some immunopathological reactions which result is damage to the plate-layered epithelium. In connection with the formation at LP some infections are involved as the reaction to amalgam fillings and unwanted effect of drugs. Clinically, several different forms of LP can be observed in the oral cavity: reticulons papulose, erosive-ulcerous, atrophic, bullous, and plaque-shaped and lichenoidal changes on the gingival within desquamative gingivitis.

Materials and methods: Patient(42) systemically healthy, denies taking a medication, food allergy non-essential appeared for an checkup of the onset of "wounds" on the mucosae membranes of the cheek and the tongue sometimes scratching and occasionally hurting. She noticed the changes more than a year ago and she was treated in another institution on several occasions, which did not lead to significant bacterial improvement. The review of the membrane mucous of the lips, the symmetrical changes in the mucous membranes of the cheek and tongue corresponding to the erosive ulcerous form of LP are noticed. In therapy we used local application of corticosteroids.

Results: The work will show the appearance of oral mucosa membranes at the beginning, after 15-30 days, as well as 6 months after the performed therapy.

Conclusion: Local application of corticosteroids some-times in a short time period leads to transition of erosive ulcerous form LP to asymptomatic reticular form.

Keywords: Erosive-ulcerous LP, therapy

IN VITRO EVALUATION OF MINERAL TRIOXIDE AGGREGATE SEALING ABILITY AS ROOT-END FILLING MATERIAL

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Introduction: Selecting the most efficient material and proper retrograde cavity preparation are the key elements in successful endodontic surgery. The aim of this study was to evaluate apical micro leakage of mineral trioxide aggregate (MTA) as root-end filling material after ultrasonic retro-preparation technique.

Materials and methods: Twenty extracted single-rooted human teeth with one canal and fully developed apices were included in this study. The teeth were sectioned at a cemento-enamel junction in order to standardize the length of the samples. The root canals were instrumented with Mtwo rotary system (VDW, Germany) and obturated with gutta-percha and Endoplus sealer (President Dental, Germany) using the lateral condensation technique. Root-end resection was performed apically at 90° angle axis to the long axis of the root, removing 3 mm of the apex. Retro-cavities were prepared by piezo-tips and filled with Rootdent MTA (TehnoDent, Russia). Samples were then immersed in an Indian ink for seven days, decalcified and rendered clear using methyl-salicylate. The dye penetration was assessed using stereomicroscope at 10x magnifications.

Results and conclusions: The results showed a minimal degree of apical micro leakage after sealing of retro-cavities with mineral trioxide aggregate. Considering sealing ability, mineral trioxide aggregate was estimated as desirable root-end filling material.

Keywords: Root end filling, MTA, micro leakage, ultrasonic retro-preparation

USE OF DENTAL IMPLANTS IN CREATING CONDITIONS FOR EPITHESES

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The challenges in maxillofacial surgery are increasing in the area of reconstruction of post-traumatic

defects. Defects create aesthetic and functional disorders and in that way affect the quality of life of patients. One way to overcome this is to create epithesis covering defects in order to compensate the missing tissue. In the fixation of the epithesis, one of the newer methods is the use of dental implants that have a wider application in reconstructive surgery and thus successfully respond to the functional and aesthetic requirements of patients.

The aim of this study was to evaluate the use of dental implants on the orbital floor in the zygomatic bone, as well as in the frontal sinus zone with the elevation of the frontal sinus floor and the synoptic cavity augmentation, which allows the application of an epithesis in orbit.

Keywords: dental implants, epithesis, orbital defects.

PREVENTION AND TREATMENT OF PERIIMPLANTITIS USING LOW WAVELENGTH LASERS

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The success of osteointegration to dental implants may be impaired by peri-implantative diseases, peri-implant mucositis as reversible and peri-implantitis as an irreversible change. Periimplantitis is an overwhelming problem causes a loss of connective tissue-related implant that leads to the loss of the dental implant. It is presented as inflammation of the supporting tissue around the implant.

Photodynamic therapy is a method of eliminating bacterial, viral and fungal infections. The method is based on the principle of activation of photoactive substance (photosensitizer), a low-wavelength laser (630 nm-700 nm) in the presence of oxygen. Laser light leads to the formation of free radicals and free oxygen, causing photochemical damage and death of the cell. The aim of this study was to reduce the possi-

bility of the presence of pathogenic microorganisms using low wavelength lasers, as well as treatment after the first signs of periimplantitis appeared.

Keywords: periimplantitis, photodynamic therapy, low wavelength laser

FREQUENCY AND TREATMENT OF LOWER JAW COLLUM FRACTURE

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The lower jaw is the most stressed and only mobile bone of the skeleton of the face, thus being mostly exposed to injuries. After the nasal bones, the bone of the maxillofacial region is most often injured, and it is among the ten most common bone fragments of the human organism. (1.2.) The lower jaw and other bone fractures and facial bones are more and more common, more difficult and more complicated. They are often associated with CNS injuries or appear within a polytrauma. We have formulated the aims of the research on the basis of clinical observations that we have acknowledged in many years of practice, as follows: determine the incidence of injuries in relation to gender; determine the most common ethiological factors of the occurrence of a fracture of the lower jaw collum; determine the therapeutic options for neck fracture (conservative or surgical).

Keywords: lower jaw collum fracture, incidence of injuries, treatment

RICHMOND CROWN ON TWO ROOTS OF THE TOOTH

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Introduction: Some methods and materials have been suppressed because they have functional or aesthetic flaws. By developing material, we have been

enabled to return some methods to practice again. Richmond crown has many stages of development from the beginning to the present. The latest achievements in the field of materials made it possible for the Richmond crown to be whole of the zircon.

Case Report: Patient S.P. at the age of 48. He appeared on the recommendation of a colleague from another office as the tooth 47 was extracted. After a detailed examination of the RA x-ray picture and the clinical examination of the patient, we suggested endodontic therapy and Richmond crown. The patient agrees with the proposed therapy. At single-visit, endodontic treatment was performed. During the next visit, the roots of the tooth were prepared as for the cast upgrade, placed a soaked thread with a retraction solution into the gingival sulcus and a single-phase impression with addition silicones. Tooth was sealed with temporary filling. In the following visit, temporary filling was removed. Richmond crown was placed and a tooth and a crown prepared for cementing. It was cemented with glass-ionomer cement.

Conclusion: Indications and contra-indications should be well understood and from each case it should be made the maximum.

Keywords: zircon Richmond crown

IMMEDIATE IMPLANT PLACEMENT

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Immediate implant placement accounts for the procedure of placing implants into the extraction sockets immediately after tooth extraction. With this procedure we successfully manage the time between tooth loss and make of dental prostheses. This solution is more acceptable for the patients for aesthetic and functional reasons. The advantages of this procedure include fewer surgical interventions

and reduction in overall treatment time. Moreover, the procedure includes both tooth extraction and immediate implant placement; therefore, dental implant offers the most long-term solution for replacement of missing teeth with high average life expectancy, providing the patient with the best sense of security and well-being. Consequently, it prevents bone resorption as well as its loss (40% - 60%). Additionally, there are some indications for immediate implant placement such as tooth extraction due to trauma, internal and external tooth resorption, advanced periodontal disease, or endodontic

treatment failure. Nevertheless, immediate implant placement has its own disadvantages illustrated in preparation of extraction sockets, necessary bone augmentation, and soft tissue coverage. Finally, according to previous studies, immediate implant placement has a success rate of over 95%. Therefore this study is to describe the procedure of immediate implant placement with immediate loading of implants by immediate restorations.

Keywords: immediate implant placement, immediate restoration

POSTER PRESENTATIONS

PROBIOTICS AS AN ADJUNCTIVE TO NON-SURGICAL PERIODONTAL THERAPY OF CHRONIC PERIODONTITIS

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Background & Aim: Probiotics are living microorganisms, principally bacteria, which provide beneficial effects for the host when administered in proper quantities. Possible mechanisms of probiotics' action in periodontal disease are based on modifications of the pathogenic potential of bacterial biofilm. The aim of this study was to assess the clinical effect of the administration of Bifidobacterium and Lactobacillus probiotic lozenges, as an adjuvant to scaling and root planning (SRP) in the treatment of initial to moderate chronic periodontitis.

Materials and Methods: Twenty patients with initial to moderate chronic periodontitis were recruited and monitored clinically at baseline (before SRP) and 30 days following SRP. All patients were randomly assigned to group I (experimental group): SRP + probiotic (n=10) and group II (control group): SRP only (n=10). The probiotic lozenges were used once a day for 30 days. Clinical parameters, the probing pocket depth and clinical attachment level were measured on baseline and 30th day following SRP. The data were statistically analyzed.

Results: The results show that there is no difference in the values of probing pocket depth and a clinical attachment gain between experimental and control group.

Conclusion: Based on the results of this work, the effectiveness of probiotics on the treatment of periodontal diseases is questionable. There is currently insufficient evidence demonstrating the benefits of systematic use of probiotics in patients with periodontal diseases.

Keywords: periodontitis, scaling and root planning, probiotics

INTERLEUKIN-6 AS A MEDIATOR OF INFLAMMATION IN SALIVA OF PATIENTS WITH CHRONIC PERIODONTITIS

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Introduction: Goal is to make a correlation of IL-6 values in saliva of patients with chronic periodontitis and control group and determine the reliability of IL-6 value determination in saliva as an inflammatory mediator in patients with chronic periodontitis.

Materials and Methods: Study included 20 patients diagnosed with chronic periodontitis and 20 healthy

persons in control group. Inclusion criteria included subjects aging 18-50 years that have not been periodontologically treated before. Excluding criteria were the existence of systemic illnesses, the use of antiseptics and antimicrobics. Samples were analyzed using Salimetrics 1-3602-Interleukin-6 Salivary Immunoassay Kit by Salimetrics, USA.

Results: The mean value of interleukin-6 in patients with chronic periodontitis was 16.17 ± 2.9565 pg / ml. In the control group, the mean value of interleukin-6 was 2.376 ± 2.8167 pg / ml. We have shown that in patients with chronic periodontitis there is a statistically significant correlation of interleukin-6 values in saliva and papilla bleeding index (PBI) samples.

Conclusion: Although the average IL-6 value in patients with chronic periodontitis was higher than in the control group, new studies are needed to establish accurate IL-6 potential as a biomarker for easier periodontal disease monitoring.

Keywords: interleukin, saliva, periodontitis, inflammation.

MULTIDISCIPLINARY SURGICAL TREATMENT OF COMPLICATED PERIODONTAL - PERIAPICAL LESIONS

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Introduction: In patients with complicated periodontal-periapical lesions, multidisciplinary surgical approach is necessary in treatment. Surgical therapy is the ultimate method of treating periapical lesions which appear after pulpal necrosis. In the case of advanced periodontitis with deep intrabony defects, surgical therapy is the most effective treatment method. The application of bone graft and collagen membrane provides good treatment results in order to compensate for lost alveolar bone.

The aim of this case report is to present a modern multidisciplinary approach to the treatment of complicated periodontal - periapical lesion.

Materials and methods: In this case report we will present a treatment of complicated periodontal - periapical lesion: anamnestic - diagnostic procedure, surgical procedure with the use of bone graft and collagen membrane, and postoperative treatment outcome one and three months later.

Discussion: Numerous literature data report the success of alveolar bone's regeneration by the use of bone grafts and membrane in patients with periodontitis. We did not find available literature data regarding surgical treatment of complicated periodontal-periapical lesions with the use of bone regeneration materials. Our case report provides insight into the new therapeutic method of treating such cases.

Conclusion: The results of this case confirm the knowledge of the efficacy of using bone grafts and membrane in order to improve alveolar bone healing and reduce postoperative discomfort. This method is a successful in regenerative treatment of complex periodontal-periapical lesions.

Keywords: periodontal-periapical lesion, surgical treatment, bone graft and collagen membrane

SIGNIFICANCE OF SOFT TISSUE MANAGEMENT IN PROSTHETIC REHABILITATION

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Introduction: Prosthetic rehabilitation means the preservation and re-establishment of orofacial system functions, appropriate occlusal and articular relationships and optimal aesthetic results. Aesthetic outcome of prosthetic restoration depends on the interaction between soft tissues and teeth crowns,

regardless to what a natural tooth is, bridge or implant.

In order to correct or eliminate anatomical, developmental, traumatic defects or defects of gingiva, oral mucosa and alveolar bone caused by diseases, required treatments are part of mucogingival surgery, today also known as periodontal plastic surgery. One of those treatments is the clinical extension of dental crown (engl. Clinical crown lengthening - CCL). Clinical crown lengthening is one of the therapeutic procedures that ensures the extension of the dental crown and healthy periodontal tissue and biological width in the same time. This could be achieved by gingivectomy with gingivoplasty, reconstructing the alveolar bone by osteoplasty or apically retiring flap with reconstructing of the bone.

Aim: In this case report we will present a patient who came to the Department of Prosthodontics to replace dental crowns in the area of the upper incisors. We will present a periodontal surgical treatment-clinical crown lengthening and prosthetic treatment with the aim of finally functional and aesthetic rehabilitation of the patient.

Conclusion: Soft tissue management, before making prosthetic dental substitution in oral cavity, sometimes is imperative in achieving optimal aesthetic and functional results, whereby the cooperation of multiple different specialists is necessary.

Keywords: functional-aesthetic prosthetic rehabilitation, clinical extension of tooth crown

GINGIVITIS AND GINGIVAL HYPERPLASIA IN PATIENTS DURING FIXED ORTHODONTIC TREATMENT, A CASE-CONTROL STUDY

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Introduction: Periodontal diseases affect one or more periodontal tissues. Although there are many different diseases affecting the aforementioned

tissues, the most common ones are plaque-induced inflammatory conditions such as gingivitis and periodontitis. Bacteria-induced gingiva inflammation is the most common form of gingivitis. It is known that maintaining good oral hygiene during fixed orthodontic treatment is more difficult and requires additional effort. Structural elements of the fixed orthodontic appliances present a predilection site for dental plaque retention.

Aim: To indicate that oral hygiene maintenance, made more difficult during fixed orthodontic treatment, results in inflammatory modifications of the gingiva.

Material and methods: Sixty students of the fourth, fifth and sixth year of the Faculty of Dentistry in Sarajevo will participate in the study. The students will be divided into two groups: 30 students currently undergoing fixed orthodontic treatment and 30 students who are not orthodontic patients. All subjects are healthy and non-smokers. The subjects will be scheduled for one appointment and will get periodontal

Results: The obtained results will be statistically analyzed and discussed to the results obtained by other authors.

Keywords: fixed orthodontic treatment, gingivitis, gingival hyperplasia

THE EFFECTIVENESS OF LASER THERAPY IN A TREATMENT OF DENTINAL HYPERSENSITIVITY: A SYSTEMATIC REVIEW

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Introduction: Dentine hypersensitivity is a common clinical symptom in dental practice.

It is defined as a specific acute, sharp pain arising from the exposed dentine, most commonly in response to thermal, tactile, chemical and osmotic stimuli which cannot be qualified as any other type of dental pathology. The therapy uses various impregnating agents, toothpaste, gels, solution, and laser therapy.

The Aim of this review was to compare the effectiveness of laser application in resolving dentin hypersensitivity among different desensitizing treatments.

Materials and methods: the research was done using search engines PubMed and Google Scholar. The keywords were: laser therapy and dentinal hypersensitivity. Selected articles are written in the period 2009-2019. The articles were divided into three groups: dentinal hypersensitivity after bleaching, after periodontology treatment and unknown etiology. Inclusive criteria were: in all three categories we have works that show results of dentine sensitivity treatment using lasers.

New technologies in dentistry, as well as more demanding patients, have brought about to an application of new treatment in order to improve the quality of our patient's life.

The results will give a brief overview of the effectiveness of the treatment of dentine sensitivity with a laser in relation to various impregnating agents.

Keywords: laser therapy, dentinal hypersensitivity.

CORONALLY ADVANCED FLAP FOR MANAGEMENT OF GINGIVAL RECESSION DEFECTS - CASE REPORT

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Introduction: Gingival recession is defined as exposure of root surfaces due to apical migration of the marginal gingiva. Causes of gingival recession are: alveolar bone morphology, aberrant frenal pull, anatomical factors include abnormal tooth position in the arch, improper tooth brushing, minimal attached gingiva, poor prosthetic and orthodontic treatment. If untreated, gingival recession may progress to the point that it can compromise the prognosis of the tooth in question. Treatment of recession can be conservative and surgical. Surgical therapy as part of muco-gingival plastic surgery implies completely covering of defect. There have been a number of treatment modalities for managing

gingival recession such as coronally advanced flap, double papilla flap, and free epithelial or sub-epithelial graft procedures.

Material and methods: In this case report we will present a patient who came to the Department of Periodontology and oral medicine with diagnosis of chronic gingivitis and gingival recession in relation to 23 (Miller's class I). Oral hygiene instructions were given. Routine periodontal therapy, including scaling and root planning, medical therapy and surgical therapy were done. Root coverage was done with coronally advanced flap without guided tissue regeneration.

Results: After a month, clinical parameters showed successful coverage of gingival recession.

Conclusion: Successful treatment of gingival recession depends on several factors: patient's cooperation and motivation, correct indication, choosing the appropriate operating technique and correctly performed surgical procedure.

Keywords: gingival recession, mucogingival surgery, coronally advanced flap

SUCCESSFUL TREATMENT OF A COMBINED PERIODONTAL AND ENDODONTIC LESION WITH EXCESSIVE ROOT CANAL PERFORATION

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To achieve the best treatment outcome for a combined endo-perio lesion, the elimination of both disease processes should be obtained. Inappropriate cavity preparation can lead to cervical, lateral or furcation pulp chamber perforation, which can generate dissemination of inflammation on periodontium and developing consecutive endo-perio lesion.

The aim of this case report was to present the case of the successful interdisciplinary treatment of endo-perio lesion with an excessive cervical root perforation of lower right second premolar.

In this case report 35-year-old patient reported to the Clinic of Oral Medicine and Periodontology Faculty of Dentistry with a main complain of periodic discharge of pus from the periodontal pocket in lower second right premolar.

Radiographs displayed a localized vertical bone loss involving tooth 45 displaying unsuccessful root canal treatment with coronal root perforation.

The therapy included endodontic retreatment, root perforation sealing, initial periodontal therapy, and periodontal flap surgery with the use of bone graft.

Conclusion: A combined periodontal and endodontic lesion represents a certain clinical challenge. Successful treatment outcomes for any periodontal and/or endodontic lesion depends on correct diagnosis and timely implementation of appropriate therapies.

Keywords: Endo-Perio Lesion, Iatrogenic Root Perforation, Chronic Periodontitis, Fausse Route, Endodontic Retreatment

THE ROLE OF RADIOMORPHOMETRIC AND QUALITATIVE BONE INDICES IN THE DIAGNOSIS OF OSTEOPOROSIS

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Introduction: For evaluation of mandibular bone quality it could be used radio-morphometric and qualitative bone indices, which are assessed on dental panoramic radiographs. These indices are: mandibular cortical index MCI, the inferior mandibular cortex width (Mental Index, Antegonion Index and Gonion Index) and panoramic mandibular index PMI. These indices can be relatively easy observed on radiographs and they require no specialized facilities.

The aim of this study was to evaluate the role of radio-morphometric and qualitative indices in the diagnosis of osteoporosis and to familiarize the dentist about the significance of these indices.

Materials and methods: Available literature, which includes studies about the relationship between low bone mineral density and indices that can be detected on panoramic radiographs, has been analyzed.

Conclusion: Based on collected research results, we can conclude that certain values of radio-morphometric and qualitative indices may indicate the need to refer the patient to DXA (Dual Energy X-ray Absorption) to measure bone mineral density.

Keywords: radio-morphometric indices, qualitative bone indices, osteoporosis

ANTIPARKINSONIAN AND ANTICONVULSANT DRUGS AS POSSIBLE ETIOLOGICAL FACTOR IN THE EMERGENCE OF ORAL CANDIDIASIS

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Introduction: Oral candidiasis is an opportunistic infection caused by fungus from the genus *Candida*. *Candida albicans* is the most pathogenic species selectively pathologically adhering to the oral mucosa causing oral disease. *Candida albicans* can be isolated from healthy persons' oral mucosa. Its pathogenicity is a prerequisite for predisposing factors: immunity, endocrine disorders, bacterial infections, long-term systemic medication application.

Material and methods: The patient came to the Clinic of Oral Medicine and Periodontology due to subjective symptoms: dryness, tingling and burning in the oral cavity. She has been treated at the Clinic of Neurology for seventeen years and has been using antiparkinsonian and anticonvulsant drugs. She reported other symptoms related to her problems with ears and eyes for which the diagnoses were

made: Otomycosis billateralis and sy sicca. We will present a complete anamnestic, diagnostic and therapeutic protocol.

Result: By taking smears from the oral mucosa and making the native preparation using a trinocular light microscope, we confirmed the growth of candida albicans.

Conclusion: Long-term use of antiparkinsonian and anticonvulsant drugs is a possible etiological factor in the emergence of oral candidiasis.

Keywords: oral candidiasis, antiparkinsonian drugs, anticonvulsant drugs, native smear

DIASTEMA CLOSURE WITH DIRECT COMPOSITE AND PRECONTURED MATRICES IN PRIMARY HEALTH CARE – CASE REPORT

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Introduction: Diastema in frontal region can present big esthetic problem for our patients. Diastema closure, dental material choice, matrix system choice, rebuilding interproximal surfaces of the tooth, can be a challenge for primary healthcare dentist. Case report represents diastema closure with minimally invasive dentistry using direct dental composite.

Case report: A female patient, 35 years old, presented with 2 mm diastema between upper lateral incisor and canine bothering her since childhood. After intraoral examination and material considerations, freehand esthetic restauration was performed on 22.

Materials and methods: Composite reconstruction was performed using pre-contoured matrix system and Gradia anterior (GC). Tooth preparation was not required. Attention was given to place composite increments for tooth color selection prior stratification.

Conclusion: Freehand sculpting of anterior tooth anatomy using direct composite is challenging for dentists in primary health care. Rebuilding the interproximal surface is extremely difficult to reproduce using traditional direct composite placement techniques.

Most matrices are flat strips that are simply incapable of reproducing such complex anatomic contours. Also, the limited access to the interproximal area with composite finishing burs, abrasive discs, and contouring strips represent extremely difficult to create natural free-flowing anatomic emergence profiles. Satisfied anatomical and esthetical results as alternative to more expensive, complex and demanding prosthetic.

Keywords: diastema closure, direct composite, freehand

ENDOPROSTHETIC REHABILITATION OF COMPLICATED DENTAL TRAUMA - CASE REPORT

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Introduction: Oral trauma involves an injury to the stomatogenic system as a result of the action of different traumatic agents types.

The incidence of oral injury in the world population varies with the geographical area and accounts for about 17% in children and is more common in males. The frequency of dental trauma is from 1% to 3% and decreases with the age of the patient.

Materials and methods: The patient (33) appeared in the Dental Clinic dr. Pinjić, 3 days after motorcycle crash. Clinical examination and RTG analysis revealed tooth extrusion 22, complicated tooth fracture 21, and inadequately endoprosthetically rehabilitated teeth 12 and 11, with periapical processes. The tooth 22 was extracted, and on the teeth 12, 11 and 21, endoprosthetic rehabilitation was initiated. After removing the dental post from teeth 12 and 21, the endo revision was started, and endodontic therapy 11 (tooth with a fistula). The definitive charging was completed 40 days after the first visit, in the fourth visit (MTA, Gutta-percha and AH+). Intercanal dressing was administered twice by "Calcipast + I". Three fiberglass sticks were placed and four zircon-ceramic crowns were made (in the block).

Results: The control shot was done after a definite filling of the channel where there is a reduction of periapical lesions, and the fistula has completely disappeared.

Conclusion: Dental traumas are usually unexpected accidents that, if not treated appropriately, can have serious consequences for the patient's health. Such cases fall into the highest level of urgency in the provision of dental services.

Keywords: dental, trauma, endoprosthetic, rehabilitation

A CASE OF ALOPECIA AREATA ASSOCIATED WITH ENDODONTIC TREATMENT FAILURE

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Introduction: Alopecia areata is an autoimmune disease characterized by a small area of hair loss due to inflammatory reaction directed against hair follicles. The aim of this case report is to present the role of successful endodontic treatment in the therapy of alopecia areata.

Case report: The patient is a 27-year-old male referred from the dermatologist for diagnostic procedures of possible dental infection associated with localized hair loss. According to the patient, the root canal treatment of tooth 24 was performed six months ago by a general dentist. The extra-oral examination revealed an alopecic area of an irregular shape, about 3 cm in diameter, located on the left occipital area. The suspected tooth 24 was slightly sensitive on palpation and percussion. The radiography confirmed the presence of inadequate root canal filling with apical periodontitis. The previous roots filling was removed and intra-canal medication over two weeks period was made. The obturation was performed by the lateral condensation technique, using AH Plus sealer (Dentsply DeTrey, Germany) and gutta-percha points.

Results and conclusions: Six weeks after endodontic retreatment, first signs of clinical improvement have been observed. Close inspection revealed the appearance of new hair follicles at the site of alopecia areata. Bacterial infection related to poorly cleaned and obturated root canals may cause an

inflammatory reaction of the host defense cells and consequently induce disease in distanced tissues. In this case, the endodontic retreatment and elimination of root canal infection gave positive results in the therapy of alopecia areata.

Keywords: alopecia areata, root canal treatment, endodontics

TESTING THE LEVEL OF STRESS IN DOCTORS OF DENTAL MEDICINE

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Introduction: Each workplace has potential risk for stress. One of the stressful professions is the profession of doctors of dental medicine. Many stressors lead to dentist's exposure to stress.

The aim of this study is to examine the level of stress in doctors of dental medicine, aging between 25 and 45 years, and to establish whether there are differences in the experience of stress between women and men.

Materials and methods: A total of 105 doctors of dental medicine participated in this investigation, all from the territory of Bosnia and Herzegovina. They all completed the stress questionnaire according to Perceived Stress Scale- PSS 10.

Results: Of the total number of participants (105), the sample consisted of 66 females (63%), and 39 males (37%). The respondents responded to all questions without a significant statistical difference between men and women. The program IBM Statistics SPSS v.21. and descriptive statistics were used for the statistical analysis.

Conclusion: There was no statistically significant difference in the level of stress in men and women doctors of dental medicine.

Keywords: stress, doctors of dental medicine

KNOWLEDGE, ATTITUDES AND PRACTICES OF STUDENTS REGARDING ORAL HEALTH

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Introduction: Monitoring about knowledge, attitude and practices related to oral health are performed with a goal of gathering information about population's oral health habits. This is important for making adequate programmes to promote oral health and for prevention of oral diseases.

Goals of this research were testing the knowledge, attitude and practices of the 1st year students at Faculty of Dentistry and other faculties and finding out if there were any significant differences between their knowledge, opinions and practices and finding out were there any differences between questioned men and women.

Materials and methods: Sample was made of 182 students aging 19-20, out of which 91 were students at Faculty of Dentistry and the other 91 were students of other faculties. Of the total number of examinees, 120 were female and 62 were male. Program package Excel 2010 was used for data processing.

Results show there are statistically significant differences in some aspects of knowledge, opinions and praxes between the students at Faculty of Dentistry and the students at other faculties. This refers to knowledge about fluoride, toothbrush characteristics, whether dental services are expensive, as well as opinions whether the tooth that hurts needs to be extracted or not.

Conclusion: because of a developed awareness of the importance of oral health and better knowledge about prevention, students at Faculty of Dentistry can, in their environment, contribute to promotion of knowledge, opinions and practices related to oral health.

Keywords: oral health, oral hygiene, fluoride.

INGESTION OF ORTHODONTIC APPARATUS - CASE REPORT

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Introduction: Ingestion of a foreign body in dentistry is one of the urgent conditions. The most commonly ingested body in dentistry are endodontic needles, implants, prosthetics, drills and matrices. In the literature it is stated that about 90% of ingested foreign bodies can pass through the gastrointestinal tract, 10% require endoscopic removal, and 1% surgical removal.

Materials and Methods: Patient (15) March 1, 2019 appears in the Dental Clinic Dr. Pinjić, after four months of palate expansion therapy, for "as he implies swallowing the orthodontics appliances". The patient was urgently transferred to the Cantonal hospital "Dr.Safet Mujić", where the native RTG abdomen was made confirming the foreign body ingestion. The patient did not show signs of pneumoperitonum and there were no signs of acute surgical disease. The control shot was performed after 24 h, which found that the foreign body was in the large intestine, after 48 hours, a control footage was re-made to determine that the foreign body moves with normal peristaltic movements without complications.

Results: Due to the multidisciplinary approach, it was decided to supervise the foreign body and did not undertake surgical treatment or esophago gastroduodenoscopy. The foreign body passed through the gastrointestinal tract five days after ingestion as a result of peristaltic movements without complications.

Conclusion: Ingestion of a foreign body during dental treatment is one of the emergency conditions, and urgent and multidisciplinary approach is needed for the treatment.

Keywords: ingestion, orthodontic apparatus, therapy

USE OF PRF (PLATELET-RICH FIBRIN) IN ORAL SURGERY/IMPLANTOLOGY

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Introduction: Prf is an abbreviation for the term platelet rich fibrin which shows a high regenerative potential in the healing of bone and soft tissue. The main ingredient of the product is platelets and leucocytes, platelets with regenerative ability performed by numerous cytokines and growth factors released by cytoplasmic granules by platelet activation. Leukocytes, their main role is immune-regulatory. Bone resorption after tooth extraction is the biggest problem in implantology. In the first year after extraction in the upper jaw about 3mm is resorbed, and in the lower about 5 mm, the most affected is vestibular lamella.

Methods: The study is a clinical, prospective, comparative, randomized and blind study of therapeutic analytical and clinical application, designed as a split-mouth observational study

Results: The study showed a statistically significant reduction of post-operative sequelae (pain, edema, trismus) in the experimental group of patients in which PRF was administered, as compared to the control group of patients for which it was not applied.

Conclusion: The study shows the exceptional results in the treatment of post-extrusion of the wound by the preservation of the alveola. However, the only disadvantage is that besides expensive equipment for doctors during their education they have been trained to take blood from a vein, therefore there are a large number of doctors who avoid this for this simple reason.

THE EXPERIENCES OF VON WILLEBRAND PATIENTS WITH DENTAL INTERVENTIONS

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Introduction: Von Willebrand's disease as an inborn bleeding disorder caused due to lack of, decreased values or dysfunction of von Willebrand's coagulation factor. As a consequence, blood clotting ability is reduced, which is clinically manifested as mucus bleeding, epistaxis, abundant menstrual bleeding and intra-articular and muscles bleeding.

This category of patients faces a problem when they need a dental treatment.

The aim of this paper is to present the experiences of Von Willenbrand patients with dental interventions.

Material and Methods: A questionnaire was conducted among patients with von Willebrand's disease to collect information on the basic characteristics of the disease, as well as the experience of previous dental interventions, and the knowledge of dentists, according to evaluation of the patients. The recent literature on PubMed databases on Von Willebrand disease and the methods of dental care has also been consulted.

The results: Based on the results and guidelines from the literature, a protocol of the dental care for patients with von Willebrand's disease was presented.

Conclusion: Understanding the nature of von Willebrand's disease is the obligation of any dentist who plans to extract the tooth or perform another dental bleeding intervention.

Keywords: von Willebrand, tooth extraction, protocol

ORAL – SURGICAL PROCEDURE, MULTIPLE EXTRACTION IN PATIENTS ON LONG TERM BISPHOSPHONATE THERAPY: A CASE REPORT

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Introduction: Bisphosphonates belong to a group of anti-resorbitive drugs, whose mechanism of action is based on theory of inhibition of osteoclast activities. These drugs are most commonly prescribed in oncological patients with metastatic changes, and in

patients with osteoporosis. Potency of bisphosphonates depends on their route of administration (oral, intravenous). The main adverse effect and complication caused by bisphosphonates is osteonecrosis of the jaw (BONJ). Biggest risk for emergence of this kind of osteonecrosis are oral-surgical procedures.

Aim: The aim of this report is to present protocol of work and preventive measures taken in patients on long-term bisphosphonate therapy indicated for oral or surgical intervention.

Materials and methods: The paper demonstrates a case of a 76-year-old female patient who is on a long term oral therapy of Fosamax due to osteoporosis. Clinical intraoral examination and analysis of X-rays showed indication for extraction of three teeth (31; 32; 41) with visible periapical lesions. After a single-session extraction following defined protocol antibiotic prophylaxis was administered, autologous transplant (PRF) was applied in bone defect towards achieving quality bone regeneration and epithelialization of tissue.

Result: Oral surgical procedure which included extraction of three teeth and removal of periapical lesion went orderly with minimum postoperative difficulties. Postoperative recovery was monitored through regular clinical and roentgenological examinations.

Conclusion: Oral surgical procedures are considered the riskiest ones for emergence of osteonecrosis of the jaw induced by bisphosphonates. Each patient should be approached with caution with mandatory preventive measures in order to avoid the possibility of this serious complication.

Keywords: bisphosphonates, osteonecrosis of the jaw, PRF, protocol, tooth extraction

USE OF PRF IN ORAL-SURGERY TREATMENT OF SUPERNUMERARY TEETH

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The presence of supernumerary teeth is not frequent, especially if it is not associated with cleidocranial dysplasia, cleft lip palate or syndromes, such as Gardner syndrome. By definition, a supernumerary

tooth is one that is additional to the normal series and can be found in any region of the dental arch. This clinical condition is also known as hyperdontia. The supernumerary teeth can be diagnosed by routine clinical or radiologic examination. They are more frequently seen in permanent dentition (0,8-3,6%), than in deciduous dentition (0,3-0,8%). The aethiology of the supernumerary teeth is supported by different theories.

We presented a case of female patient, with a multiple supernumerary teeth in the mandibular praemolar region, that is not associated with syndrome, and its oral-surgical treatment.

In our case the diagnosis of supernumeraries was after they caused problems: pain, resorption of adjacent teeth, paresthesia and cystic formation. After the consultation with orthodontist, we came to conclusion that the treatment of choice is surgical therapy, using PRF membrane and cylinder in order to achieve socket preservation, and to improve postoperative period.

We decided to use PRF because we expected a huge bone defect after surgical extractions of supernumerary teeth. Reviewing the literature we didn't manage to find any similar examples. PRF is used in oral surgery for socket preservation, after lower third molar extraction, in sinus lift procedures, in cases of severe maxillary atrophy, bone regeneration after cystectomy, etc.

In our case we presented many advantages of PRF: fast and easy to procure, financially acceptable and the most favourable biological characteristics that accelerate both soft tissue and bone healing.

Keywords: supernumerary, teeth, prf, oral-surgical treatment.

DENTAL AGE ESTIMATION USING ROOT DENTINE TRANSLUCENCY

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Introduction: The aim of the study was to examine dental age estimation based on the translucency of root dentine with modified Bang and Ramm method

for dental cross sections using photogrammetric measurements

Materials and methods: A sample of the research consisted of 60 teeth sections made by the "half tooth" technique by Solheim. All sections were encrypted, and from available data there were information related to age and sex of the patients. On all cross sections the measuring of the root dentine translucency was performed using digital sliding gauge/caliper. Then, photography and translucency was measured with the ImageJ program. All data were recorded in the chart created for this research, included in dental formula for Bang and Ramm method and the dental age was calculated for both methods of measurement.

Results: Standard estimation error of the Bang – Ramm method is ± 10.38 years which fits the results of this research. Results show that dentine translucency is higher with males regardless the measuring method. Highest average values of translucency measured by caliper are within the age below 65, growing with age. Highest average values measured by ImageJ program are within the age group between 25 and 45 years. Comparison of parameters of these two methods show that all average values of translucency measured by caliper are lower compared to those measured by ImageJ program.

Conclusion: Determination of dental age based on root dentine translucency can be done by the use of conventional and digital methods and is one of the most reliable parameters for age determination. Bang – Ramm method is reliable for dental age estimation. Photogrammetric measuring of dentine translucency demands new regression coefficients in order to get more accurate dental age estimation.

Keywords: odontometry, dental anthropology, dentin translucency, Bang Ramm, dental age

REPRESENTATION OF IRREGULARITY OF CROSS-BITE IN SCHOOL AGE CHILDREN PATIENT OF THE PUBLIC INSTITUTION HEALTH CENTRE OF THE SARAJEVO CANTON

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Introduction: Cross bite is irregularity of tooth ratio in bucco-oral plane, or we can say it is a transversal irregularity. It occurs in primary, mixed and permanent dentition. There are different variations and degrees of expression. From the most gentle shape, where the relationship between the lateral teeth is that cusp of upper teeth is in contact with cusp of lower teeth, buccal cusp of upper teeth is in contact with central fissure of lower teeth buccal cusp of upper teeth is in contact with lingual cusp of lower teeth or completely missed bite of upper and lower lateral teeth. The cross bite may engage one or both sides, it may include one tooth or the entire lateral segment. Causes can be: dental inclination, irregular transverse development of maxilla and mandible, TMD, congenital deformation of the face, heredity.

Aim: The aim of the study was to examine the frequency of cross bite in school children in the Sarajevo Canton.

Material and Method: The study was conducted at The Public Institution Health Centre of the Sarajevo Canton, Department of Orthodontics. We used the existing documentation (orthodontic carnets and models) and received the required data represented by the number of patients with this irregularities. There are 377 models and carnets available, of which 217 are girls and 106 boys.

Results: The results show that 44 children out of 377 had cross bite, which is 11,6%, 29 girls (7,6%) and 15 boys (4%).

Conclusion: The high incidence of cross bite in children can be corrected by early orthodontic therapy.

Keywords: cross bite, in lateral teeth, incidence.

THE INFLUENCE OF A FIXED ORTHODONTIC RETAINER ON DENTO-ALVEOLAR COMPLEX

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Introduction: One of the major challenges of orthodontists is the long-term stability of the

orthodontic treatments. Recent research has shown insufficient high-quality evidence to make recommendations on retention procedures.

The aim of this study was to determine whether dental medicine doctors in their practice had noticed the harmful effects of the fixed orthodontics retainer and which are the most common.

Materials and methods: For this research, a questionnaire with 11 questions was made. The questionnaires were distributed to dental medicine doctors on the territory of the Federation of BiH. A total of 70 dental medicine doctors participated in this investigation, of which 41 were general dentists and 29 specialists.

Results: Out of the total number of respondents, 90% answered that they had patients with a fixed orthodontic retainer. More than 90% of respondents answered that in patients with a fixed retainer they observed plaque accumulation, 77% presence of calculus, 73% occurrence of gingivitis. The smaller percentage was those who noticed the presence of a gingival recession (15,8%), periodontitis (15,8%), caries (33,3%) and teeth rotation (28,6%). The program Spss 23.0 Chicago was used for the statistic analysis.

Conclusion: Respondents had noticed the harmful effects of a fixed orthodontic retainer on the dentoalveolar complex. The most common adverse effects are increased plaque accumulation, dental calculus and gingivitis.

Keywords: retention, orthodontics therapy, fixed retainer

COMPARISON OF CHRONOLOGICAL AND DENTAL AGE ESTIMATED ON THE BASIS OF DEMIRJIAN, WILLEMS AND CAMERIERE METHODS

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Introduction: For pediatric dentistry and orthodontists it is extremely important to estimate age in treatment planning. Basis of treatment planning of skeletal disharmonies is optimal treatment time. The

most favorable time for the treatment of skeletal disharmonies is before or during pubertal growth spurt. As there are individual variation in the beginning and duration of pubertal growth acceleration we need an assessment of individual development stages.

Aim: The aim of this study was to examine the relationship between chronological and dental age estimated on the basis of the method according to Demirjian, according to Willems and to Cameriere respectively.

Materials and Methods: Retrospective study was performed on a sample of 560 orthodontics patients aging from 7.83 – 15.08, mean age being 11.62 (255 boys mean age 11.57 and 305 girls mean age 11.66). Dental age from panoramic radiographs was assessed using Demirjian method (mean age 12,64), Willems method (mean age 12,07) and Camerieri method (mean age 11.47).

Results: By establishing the connection between those three methods of dental age assessment and chronological age of the respondents it is confirmed a statistically significant correlation with the achieved high coefficients of determination (r^2). Correlation of chronological age, common variation (determinative coefficient), achieved with Demirjian dental age was $r^2 = 0.867$, followed by Cameriere dental age $r^2 = 0.863$ and with Willems dental age $r^2 = 0.854$. Correlation refers analyzed variables are presented in diagram.

Conclusion: The greatest correlation of chronological age was achieved with Demirjian dental age ($r^2 = 0.867$).

Keywords: Chronological age, dental age, Demirjian, Willems, Cameriere.

BJÖRK'S PARAMETERS FOR DETERMINING ANTERIOR AND POSTERIOR ROTATION OF FACE

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Introduction: The two most commonly used terms expressing disproportions in vertical development

are open bite and deep bite. Morphological parameters on the basis of which patients with anterior or posterior rotation can be distinguished, according to Björk, are the following: 1- inclination of the head of the condyle (ICH), 2- curvature of the mandibular canal (CMC), 3- the shape of the lower border of mandible and in particular the depth of the antegonial notch (AN), 4 – inclination of the symphysis (ISY), 5 – interincisal angle (IIA), 6 – intermolar angle (IMA), 7 – lower anterior face height (LAFH).

Aim: The aim of the research was to determine which parameters, mentioned here out of morphological parameters by Björk, are most commonly used in the cases of anterior or posterior facial rotation.

Material and methods: The research was based on the analysis of 50 lateral cephalograms from the archives of the Faculty of Dentistry in Sarajevo, which were randomly selected. All subjects were 13 to 18 years of age.

Results: Out of the total number of respondents, 66% were female and 34% of the male population. The most common parameters for anterior rotation were IMA, CMC and ICH, and in posterior rotation ICH, CMC and AN. For the statistical analysis of the results we used statistical package Statistics IBM SPSS v.21. and Microsoft excel 2010. Descriptive statistics was used in statistical processing.

Conclusion: The parameters used in this study proved credible in order to distinguish the anterior and posterior facial rotation.

Keywords: Björk's parameters, face rotation

PRESENCE OF PRIMARY TEETH CARIES IN SUPPORT ZONE PATIENT OF THE PUBLIC INSTITUTION HEALTH CENTRE KISELJAK

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Introduction: The support zone consists of primary cuspid, first and second primary molars. Except for

the first physiological lifting of the bite, the support zone influences the growth of the jaw in the frontal plane, maintains the central line, allows correct replacement of the lateral teeth and influences the proper growth of the jaw length and the proper setting of the first permanent molar and the canine. If there is a loss of tooth of support zone, conditions for the development of malocclusion in permanent dentition are created. Research suggests that reduction of the support zone occurs, almost always, when there is premature extraction of one of the primary molars or canines, except when there are overdeveloped jaw or occlusal relationships in the full class.

Aim: The aim of this study was to establish the presence of the caries of teeth in the support zone, the preservation of the support zone.

Material and Method: The survey was conducted at the Kiseljak Health Center, and the respondents were children, aged between 5, 5 and 7, who are the patients of the dental department. The study included 147 children, both sexes. Dental examinations were performed according to the WHO guidelines.

Results: The study showed that the upper first molars were most commonly affected by caries (99.86%), while caries of first and second molars of lower jaw appears almost in equal numbers (73%).

Conclusion: Preventive measures should prevent the appearance of caries on the primary teeth of the support zone and significantly reduce the possibility of developing malocclusion in permanent dentition.

Keywords: Caries, support zone, malocclusion

SPACE MAINTAINER – A CASE REPORT

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The process of teething in children begins from 5th and 7th month and lasts up to 24-36 months. The period of milk dentition lasts up to 5.5-6 years and when the lower first permanent molar appears, the beginning of the mixed dentition lasts until the age of 12, then permanent dentitions begins. Milk teeth preserve the place for their heirs and should be preserved, but in the event of their premature loss,

the free space in which a permanent tooth should be placed is reduced. The space maintainer is a simple orthodontic device that is used to preserve space for permanent teeth in the tooth array, which was created by the early loss of the milk teeth.

The aim of this study was to show the importance of storing space in the dental array for proper placement of dental teeth in children with prematurely lost teeth.

Clinical case: An 8-year girl came to the Dental Clinic for the pain on the right side of the mandible. The examination revealed two shaken and carious milk molars. Radiographically, it was found that the roots were absorbed at the site of the molar and the growth of teeth began. The extraction was the choice of the therapy for eliminating pain and the patient was considered suitable for making space maintainer.

Conclusion: If there is space loss, the mandible will not have enough space for the teeth to be properly positioned. This is prevented by early diagnosis, intervention and orthodontic solution by placing a space maintainer in order to preserve the space for teeth.

Keywords: premature loss of dairy teeth, space maintainer

DENTAL FUSION- CASE REPORT

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Introduction: Clinical findings of the crown, fused or geminated tooth, can be almost identical. That is the reason why the terms like the double tooth or joined teeth are often used to describe gemination or fusion – which are both developmental abnormalities of the teeth. Two tooth rule can be applied for differentiating between fusion and gemination. Fused tooth are considered as one and the number of teeth in the dental arch is lower contrary to the term fusion is considered. If there was normal number of teeth, the term gemination is considered. Etiology of these anomalies is unclear. Prevalence of the double teeth

in primary dentition in different population is between 0,14 – 5%.

Case report: 6 –years boy was reported to The Department of Pediatric Dentistry for a regular dental check-up. Intraoral examination revealed that mandibular left side deciduous central and lateral incisors were fused together. The periapical radiograph showed that crowns of the central and lateral incisor were fused with the partial fusion of the pulp chamber, while roots and root canals were not fused.

Conclusion: Early diagnosis of the anomaly has a considerable importance. It should be followed by careful clinical and radiographic observations. Thus, it is very important for every dental professional to be familiar with dental developmental anomalies as these abnormal morphology demands prophylactic and early interceptive treatment in order to avoid the complicated pulpal and periodontal treatment related to these teeth.

Keywords: tooth anomaly, fusion, gemination

FRACTURE OF MAXILLARY ALVEOLAR PROCESS – CASE STUDY

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Introduction: Dental injury occurred to the 16-year old girl who came at the Oral Surgery Clinic after the fall in front of her school. She came 30 minutes after the accident; she didn't lose her consciousness and didn't vomit. We saw contusion and laceration of the skin and mucous membrane on the left side of upper lip. Manual examination showed the mobility of bone fragments and palatal movement of teeth 21, 22 and 23. The bite was disordered and the patient was not able to close her mouth. Radiography of teeth showed that teeth 21, 22, 23 were lower, above the roots of teeth in upper jaw and fracture shadow was not radiographically visible. We diagnosed closed fracture of maxillary alveolar ridge. After rinsing the area with H2O2 and saline solution, we performed the analgesia of the area. We did reposition, we set

fractural bone fragment in its anatomical position and proceeded with the occlusal adjustment to get the teeth in central occlusion. We used wire-composite splint to stabilize teeth. The patient was advised to apply an ice pack on it, blended food, soft toothbrush, and rinsing of mouth with chlorhexidine solution twice a day during the first week. We prescribed antibiotics and scheduled the next appointment to the dentist. Splint was removed after 4 weeks, and we noticed that teeth 21, 22 and 23 had weaker vital response. RTG and of teeth vitality will be checked after 6 or 8 weeks, 4 months and one year. In the next 5 years she should do RTG once a year.

Materials and methods: Materials and methods were used in accordance with clinical protocol for threatening surgeon treatment of upper alveolar jaw fracture.

Conclusion: We avoided wrong wound healing, infection and sequestration of bone fragments in the jaw. Function and esthetics of teeth 21, 22 and 23 and local tissues were satisfactory.

TREATMENT OF TEN-YEAR OLD CHILD TOOTH AVULSION – CASE STUDY

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Introduction: Dental injury occurred to a 10-year-old girl that came at the Oral Surgery Clinic after the fall of the roller skates. After the clinical examination followed by bleeding, contusions and lacerations in

the area of the upper lip was visible empty alveolar socket and tooth 11 was brought by a mother in a non-sterile medium. Furthermore, the mother stated that the tooth ended on a concrete base and that the child was regularly vaccinated. One hour after the injury occurred, alveolus and tooth were rinsed with chlorhexidine solution and sterile saline solution. The tooth was replanted in alveolus, taking into account occlusal relationships and wire-composite splint was applied. After the examination and clinical procedure antibiotics were prescribed. It was also recommended to have a soft food dietary regime and to follow instructions on the oral hygiene. Furthermore our decision was to remove pulp, which was considered a reliable clinical procedure that would provide a safe prognostic outcome. After 14 days we approached from the palatal side to the pulp chamber, removed the necrotic pulp, following the mechanical instrumentation and disinfection of root canal using the standard protocol. In addition, the canal was filled with Ca (OH) 2 by exploiting its longevity and bactericidal action for the purpose of a temporary six-month filling and we closed the entry into root canals with zinc phosphate cement. After it was all finished we proceeded with radiological examination which we repeated after 6 months. To conclude, after the final examination there was no sign of roots resorption so a definite filling and final filling was performed.

Materials and methods: Materials and methods were used in accordance with clinical protocol for dental avulsion.

Conclusion: After the therapy related to the function and aesthetics of tooth 11 and condition of the soft tissues, the results were satisfactory. The patient's smile indicated satisfaction with the achieved result.