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## Abstracts

### **A Study of the Reasons for Tooth Extraction in a Turkish Population Sample**

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#### SUMMARY

**Objectives:** The purpose of this study was to determine the reason for the extraction of permanent and deciduous teeth, and to investigate the influence of patients' age and sex in the western part of Turkey.

**Methods:** 5500 patients being admitted to Ege University, Faculty of Dentistry, Department of Oral and Maxillofacial Surgery, for tooth extraction between January and December 2001, were included into the study. Data were provided on reasons for extraction of 6570 teeth from 5500 patients during 12 months, and analyzed using standard statistical program (SPSS). Chi-square tests were used to assess whether there were significant associations between the reason for extraction and gender, age or tooth type.

**Results:** Dental caries and its complications were the primary reason of tooth extractions (39.3%), followed by eruption problems (23.5%) and periodontal disease (19.8%). Under 20 years of age, orthodontic indications were the main reason, whereas in the 21-40 age group, eruption problems was the commonest reason of tooth extraction followed by caries. After 40 years of age, caries become the main cause, and extraction due to periodontal disease significantly increased, becoming the next common cause for tooth loss. Third molar was the most often extracted tooth, followed by premolars.

**Conclusion:** This study concluded that caries and its consequences were the most common reasons for tooth extraction in patients over 30 years of age, despite the fact that periodontal disease increased with age.

**Key Words:** Tooth Extraction; Dental Caries; Periodontal Disease; Turkey

# **Effect of $\beta$ -Phase Tricalcium Phosphate ( $\beta$ -TCP) on the Healing Process of Bone Defects after Apicoectomy of Previously Endodontically Treated Teeth: An Experimental Study in Dogs**

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## **SUMMARY**

The present study examined the effect of implanting ceramic  $\beta$ -phase TCP ( $\beta$ -TCP) in bony defects left after apicoectomy of previously endodontically treated teeth. The root canals were obtunded with gutta-percha points and Grossman sealer. 4 experimental dogs 1-2 years old were used. The mandibular incisors were treated. After the animals were anaesthetized, a preoperative radiograph of the mandibular incisors was taken, their pulp cavities were accessed and their root canals were instrumented and obtunded with gutta-percha points and Grossman sealer. The cavities were sealed with amalgam and a post-obturation radiograph was taken. A week later the animals were anaesthetized and a mucoperiosteal flap extending from one canine to the other was reflected. 2 similar bone cavities of a big cherry size were created, near the apices of the left and right incisors, leaving was an osseous bridge 2 mm wide between them. Apicoectomy was conducted to all teeth. 1 of the cavities was filled with particles of porous  $\beta$ -TCP. The diameter of the particles was between 1 and 2 mm. The other cavity was left void so that it could be filled with blood and serve as a control. The wounds were sutured and the healing was by first intention. Antibiotics were administered parenterally to the animals for the first 8 postoperative days and the sutures were removed on the 10<sup>th</sup> day. The animals were sacrificed during the 1st, 2nd, 3rd and 6th postoperative month. Specimens including teeth and their surrounding bone tissue were prepared and placed in a 10% formalin solution. Sections 6  $\mu$ m thick were taken and stained with haematoxylin-eosin stain.

The histological examination indicated that bone healing on the control sites was faster than that on the experimental sites. 90 days there was no indication of loose connective tissue between the particles and the bone, a finding that supports the biocompatibility of the ceramic. The final result was the same on the 180<sup>th</sup> day of the experiment, bone tissue being evident in both sites, control and experimental. As a conclusion, it can be stated that the ceramic  $\beta$ -TCP is a biocompatible, resorbable material with osteoconductive properties, which can be used as a filling material that repairs bone cavities.

**Key Words:** Tricalcium Phosphate; Apicoectomy

# The Local Tissue Reactions to Topical Agents Used for Recurrent Aphthous Ulcerations in an Animal Model

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## SUMMARY

**Objectives:** Recurrent aphthous ulceration (RAU) is a common oral disorder with complex aetiology, and many treatment modalities have been employed for symptomatic relief. Among these, topical administration of triamcinolone acetonide (Kenalog in Orabase<sup>®</sup>) and tannic, salicylic and boric acid combination in carboxymethyl cellulose (Zilactin<sup>®</sup>) have been reported previously. However, the local tissue responses to these agents have not been documented yet. In this study, the tissue reactivity to a triamcinolone acetonide containing agent and Zilactin<sup>®</sup> were investigated in an animal model by using an intramuscular implantation method.

**Methods:** PTFE tubes carrying the test materials (the agent with triamcinolone acetonide and Zilactin<sup>®</sup>) were implanted into the back muscles of 40 rabbits. The local tissue responses against the materials in 1, 2, 10, 21 and 42 days were compared with those against the positive and negative control materials (formocresol and PTFE, respectively).

**Results:** The results revealed that the mean scores of the tissue reactions caused in 42 days experimental period by the agent with triamcinolone acetonide were higher than those of Zilactin<sup>®</sup>.

**Conclusions:** Long term application of a triamcinolone acetonide containing agent induced severe adverse local tissue reactions, which are comparable to the positive control material. On the other hand, Zilactin<sup>®</sup> provoked moderate tissue responses in the animal model used.

**Key Words:** Recurrent Aphthous Ulceration; Triamcinolone Acetonide; Corticosteroid

## Effects of Triclosan on Cariogenic Microflora and on the Total Count of Saliva Microbials

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### SUMMARY

The use of antimicrobial agents to control plaque and oral diseases has been advocated for a number of years. Different compounds have been delivered through mouth-rinses, toothpastes, or by topical application. There are several antimicrobial substances that can be used in the oral cavity and with varying efficacy. Substances available at pharmacies and commercial stores can be divided into groups according to their chemical characteristics. Triclosan (diphenyl ether derivate) is an agent that belongs to the non-ionic antimicrobial agents group. The aim of this study was to estimate the salivary levels of *Streptococcus mutans* and *Lactobacillus species* in saliva before and after teeth brushing with a dentifrice containing triclosan/copolymer, and to compare the number of whole salivary flora by saliva analysis before and after teeth brushing. In order to accomplish our objective we used a Colgate Total Plus Whitening, Colgate - Palmolive dentifrice. The group consisted of 12 healthy schoolchildren aged 9-13 of both sexes. The participants were with a good oral health and similar DMF index. Because of the bigger precision and accuracy, the same group was a control group too. The saliva samples were taken before, and 20 minutes after tooth brushing, early in the morning, after at least 12 hours without oral hygiene. The counts of *Streptococcus mutans* and *Lactobacillus species* were determined with commercial CRT bacteria strips produced by Ivoclar-Vivadent, Liechtenstein. The total count of the saliva microbials was determined by standard microbiological methods.

A significant reduction in salivary MS and LB levels was observed in all samples, as well as a decrease of the total count of aerobes, anaerobes, and yeasts.

**Key Words:** Antimicrobial Agents; Triclosan; Dental Decay; Salivary Flora; *Streptococcus mutans*; *Lactobacillus species*

# Deciduous Dental Pulp Enzymatic Activity

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## SUMMARY

Deciduous teeth are a valid masticator organ during the period of their limited, genetically determined lifetime. They are formed in a much shorter period of time, compared with the permanent teeth. The aim of the present study was to examine the enzymatic activity of the dental pulp in the deciduous teeth, and to compare their activity in the phase of root resorption. The pulps used for this investigation were obtained from intact teeth of healthy children, aged 5 to 9 years, extracted for orthodontic reason (20 deciduous teeth without signs of physiological resorption, and second group - 20 deciduous teeth with physiological resorption). The enzyme activity was determined, according to spectrophotometric methods by: Mc Comb and Bowers for alkaline phosphatase activity; Bergmeyer and Bernt for lactate dehydrogenase activity; and Andersch, Szycpinski and Fishman for acid phosphatase.

The results obtained in this study showed specific enzymatic activity with high values in deciduous teeth, which certainly was an expression of large synthetic pulp ability. Values of activity decreased with the beginning of the resorption. Enzymes, which are actively participating in the metabolism (lactate dehydrogenase), as well as in synthesis (alkaline phosphatase), can increase their specific activity in conditions of progressive physiological root resorption, because of the discontinuity, in the periods when the reparatory component dominates. Enzymes are responsible for tissue destructive changes (acid phosphatase); they increase significantly with the development of the resorption.

**Key Words:** Deciduous Teeth; Root Resorption; Dental Pulp; Alkaline Phosphatase; Acid Phosphatase; Lactate Dehydrogenase

# Effect of Different Light Sources and Modes on the Depth of Cure of Composite Resins

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## SUMMARY

The purpose of this study was to determine the effect of various light intensities, pulsed or soft-start modes of different light sources on depth of cure of 3 composite resins. 3 types of composite resins (Filtek Z-250, SureFil, InTen-S), and 3 light sources with different modes (Kavo Polylux II; Optilux 501 - Conventional C - RampR - BoostB; Dentaline LED 1000-Conventional-Pulsed-Softstart modes) were used. Depth of cure was tested according to ISO 4049. Statistical analysis was performed using one-way ANOVA and Student t-test.

Filtek Z-250 and SureFil showed statistically higher depth of cure than InTen-S in all groups (except Optilux 5001- B mode) ( $p < 0.05$ ). Depth of cure values ranged from  $2.42 \pm 0.02$  mm (InTen-S, Kavo Polylux II) to  $3.20 \pm 0.01$ mm (Filtek Z-250, Optilux 501-C mode). Optilux 501 and Dentaline LED 1000 exhibited statistically higher values than the conventional halogen Kavo Polylux II ( $p < 0.05$ ).

It was concluded that light intensity, mode of the curing unit and composition of the material influenced the depth of cure rate. Light intensity was more important than the mode of the curing device. The obtained results concerning depth of cure in this study indicate that an incremental application technique should be preferred with these materials.

**Key Words:** Composite Resins; Depth of Cure; Light Sources

# **Prevalence and Aetiology of Denture Related Stomatitis in Patients Wearing Removable Dentures**

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## **SUMMARY**

The aim of this study was to investigate the prevalence and aetiology of denture related stomatitis (DRS) in association with predetermined parameters related with removable denture wearers, such as the type of the denture, patient age, denture age, denture hygiene and continuous (24 hour) denture wearing. A total of 274 patients wearing removable dentures were included in the study. All patients were examined and interviewed for predetermined parameters and for DRS, if any existed. The average denture age was  $9.8 \pm 7.9$  years.

The results showed that DRS was the most frequently encountered lesion among removable denture wearers with prevalence of 55.8%. Association of DRS was found significantly higher with female patients, denture age, continuous denture wearing, inconvenient denture hygiene and maxillary complete dentures. A pronounced number of DRS cases (55 cases, 74.3%) showed *Candida albicans* growth. However, denture wearing habits can be easily changed which can help to reduce the prevalence of DRS. Patient motivation on hygiene and periodic controls seems to be a valuable measure to prevent DRS.

**Key Words:** Stomatitis, denture related; Removable Dentures

## Shear Bond Strength of 4 Current Adhesives in Caries-Affected Dentin

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### SUMMARY

**Objective:** To evaluate the shear bond strength of 4 current dentin adhesives in caries-affected dentin, after thermocycling.

**Methods:** The materials used were Prompt-L-Pop, Gluma Comfort Bond, Clearfil SE Bond and Nano-Bond. 80 freshly extracted human molars were used. 40 of them had proximal caries (group A). After the removal of carious lesions, the molars were cut in order to obtain flat surfaces. Surfaces were bonded with Prompt-L-Pop, Gluma Comfort Bond, Clearfil SE Bond or Nano-Bond, according to manufacturers' recommendations. Composite resins were added to the surfaces by packing the material into a cylindrical-shaped plastic matrix. After storage of the specimens in distilled water for 10 days, half of the specimens with each material were submitted to 3.000 thermal cycles (5<sup>0</sup>; -37<sup>0</sup>; -55<sup>0</sup>; -37<sup>0</sup>C). The other 40 teeth were healthy human molars (group B), which were submitted to the same process. All of the specimens were loaded to shear forces at a rate of 0.5 mm/min until failure. Statistical analysis was performed with 3-Way ANOVA at the level of significance  $p < 0.05$ .

**Results:** All adhesives attained higher shear bond strengths in the normal dentin (control, group B), than in the caries-affected dentin (group A). Significantly lower results were obtained using the adhesives Prompt-L-Pop and Gluma Comfort Bond compared to Nano-Bond and Clearfil SE Bond. Thermal-cycled specimens attained lower shear bond strengths.

**Conclusion:** The results suggested that the altered structure of caries-affected dentin reduce the adhesion performance of resins.

**Key Words:** Dentin Bonding Agents; Caries-Affected Dentin; Shear Bond Strength; Thermal Cycling

# **Child Abuse and Neglect: It's Recognition by Dentists**

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## **SUMMARY**

Society is becoming increasingly aware of child abuse. The dental profession appears less aware than other medical professionals in the detection of suspected cases. All dentists should have an understanding of child abuse and neglect, and be able to recognize the signs and symptoms of the syndrome. The forms of child abuse and neglect with their clinical signs are mentioned, together with a step-to-step guide for identification of suspected cases. In conclusion, the dentist that is alert to the fact that many children have injuries to the head and around the mouth, may be able to identify an abused child and institute steps that might save the child's life.

**Key Words:** Child Abuse; Neglect; Munchausen's Syndrome

# **Stomatological Emergencies in Sport**

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## **SUMMARY**

The sport stomatology concerns with the treatment and prevention of oral/facial athletic injuries and related oral diseases and manifestations. The facial dento-maxillary traumatism in sport statistically comes immediately after the traumatism of the upper and lower extremities. Regardless of this, the cephalic area is very delicate, although all the vital organs are safeguarded by the bony elements with a perfect architecture. The traumatic elements in the sport, however, give their effect when this limit is exceeded. The recognition of the dental and maxillary traumatism in sport is also of a prophylactic importance, as to precede and prevent injuries, even if they are specific ones.

**Key Words:** Sport Injuries, facial; Prevention

# **Reciprocal Dislocation of the Mandibular Condyle with Fracture of the Tympanic Plate: Report of a Case**

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## **SUMMARY**

A fracture of the tympanic plate after a trauma to the midline of the mandible without a condylar fracture is very rare. This type of injury results from the reciprocal movement of the condyle to a posterior direction, and returning again to its location in the glenoid fossa. A case report of a woman with a traumatic dislocated condyle and a fracture of the tympanic plate, which was treated conservatively, is presented.

**Key words:** Fracture; Tympanic Plate; Mandibular Condyle

# Ameloblastomatous Calcifying Odontogenic Cyst or Mural Ameloblastoma: A Diagnostic Dilemma

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## SUMMARY

The calcifying odontogenic cyst (COC) may demonstrate variable clinical, radiographic and histopathologic features. Because of its histomorphologic diversity, several classifications have been proposed supporting that the COC contains two entities: a cyst and a neoplasm. Based on this dualistic concept, subtypes of the cystic variant included the odontoma-associated type of COC and the rare ameloblastomatous proliferating type. On the other hand, it has been recognized that the lining epithelium of the odontogenic cysts can give rise to ameloblastoma. The diagnosis of some COCs exhibiting extensive intramural ameloblastic-like proliferation can be challenging, because of the occasional histological overlap.

In this article, a case of ameloblastomatous COC in a 35 years old man is reported. The lesion presented as a unilocular poorly demarcated radiolucency and extended into the maxillary sinus. Histologically, the cyst lining epithelium showed the characteristic features of the COC in addition to infiltration of the cyst wall by cords and islands of ameloblastic-like epithelium. The lesion was completely removed and there has been no evidence of recurrence 2 years after the excision. The histopathologic criteria that differentiate the ameloblastomatous COC variant from a true ameloblastoma associated with or arising in the cyst wall of a COC are discussed.

**Key Words:** Calcifying Odontogenic Cyst; Gorlin Cyst; Odontogenic Cyst; Ameloblastoma; Odontogenic tumours

## Obituary

### **Prof. Olga Blagojevic (1939 - 2005)**

We lost Prof. Olga Blagojevic, a distinguished member of the BaSS Council, on July 10<sup>th</sup> this year, after a fatal car accident on the road from Sarajevo to Foca.

Born in Ilidza (Bosnia and Herzegovina) in 1939, where she finished her elementary school, she moved to nearby Sarajevo to attend a secondary dental school. Following graduation, she enrolled the Faculty of Stomatology in Sarajevo in 1961, where she qualified in dentistry in 1966. Immediately after graduating, she returned to her birth place to join the staff of the town Health Centre in the battle against oral and dental diseases of the local population. However, shortly thereafter, feeling that her personal potential could overcome by far the duties of a local dentist, she moved to Sarajevo again, this time to start her university career at the Faculty of Stomatology in Sarajevo. During this early academic period at the Prosthodontic Department, in 1973, she also spent six months at the Dental Faculty in Munster (Germany), acquiring excellent further training in prosthodontics. After completing her postgraduate training - specialization in prosthodontics in 1975, she entered an MSc postgraduate course and delivered her MSc Thesis in 1978. It was during this period that she developed what was to become a lifelong interest in the area of removable prosthodontics. She completed her PhD Thesis in 1982, following which, in 1983, she started a teaching career as assistant professor, later to become associate professor (in 1986). In the period 1986-1990 she was Vice Dean for education, demonstrating particular organizational capability and managerial skill. These distinctive features became even more notable and appreciated during the exceptionally difficult years of conflict in Bosnia, when she moved to Foca, Republic of Srpska, and actively participated in the founding of the Faculty of Stomatology as a part of the University of East Sarajevo (Republic of Srpska). As Dean of the Faculty, she was its "heart and soul", working from dawn to dusk for its recognition and prosperity. In 1996 she was conferred the title of full professor in prosthodontics.

Prof. Blagojevic was especially close to the idea of BaSS. Although her country had not joined the association from the very beginning, she regularly attended its meetings and actively took part in the Council activities from 2001. Her participation was always notable and supporting, showing charming politeness in communication with all the members of the Council. Not only was Olga a very active member of BaSS, she was also very popular among colleagues, loved and highly respected by all who knew her.

She managed to be what I always admired most - an outstanding academic and clinician. She proved to be a gifted dental practitioner who cared deeply for her patients, but was no less engaged in education and research. She wore her knowledge lightly and was a delightful colleague, equally a scholar and a friend. Her remarkable personality and charm attracted warm loyalty and commitment from all those around her. She was fiercely supportive of her younger colleagues to whom she pointed out the significance of international communication for professional development. In fact, she was the one who introduced many of her colleagues to the BaSS and other

associations and institutions as part of a continuing education process and further improvement.

Among the many virtues she had, probably the one most highly regarded was her openness to all professional innovations, and particularly various aspects of cooperation with other institutions, domestic and foreign. Not only had she foreseen the significance of joint international projects, but she also paved the path which would enable her younger colleagues to build even stronger relations with fellow institutions sharing mutual knowledge and experience. Unfortunately, she could not see the completion of her latest activities which were engaged in the process of reforming the European High Education Area through the “Bologna Process”, sponsored in Bosnia and Herzegovina by WUS Austria, and aimed at essential reforming of universities to develop a framework of enhanced cooperation in the EHEA.

The dental profession has lost a great practitioner and teacher. She truly was a person of talent, determination and charm, and will be sorely missed by all who knew her. This unique and charismatic lady, who gave a personal touch to everything, will always be remembered by her colleagues and friends. I am especially proud of having been among those she regarded as her friends.

Our sympathy goes to her family, especially to her son and granddaughter, whom she loved infinitely and who have suffered the greatest loss.

**Ljubomir Todorovic**