

Pathogenetic Factors in the Development of Fibrous Dysplasia and McCune-Albright Syndrome. Current Review of the Literature

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REVIEW PAPER (RP)
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SUMMARY

Many studies have been made in the past in an effort to understand the pathogenetic factors that are involved in the development of fibrous dysplasia and McCune-Albright syndrome. Recently, with the aid of cellular and molecular biology, the implication of G protein mutations have been demonstrated to be a crucial etiopathogenetic factor for the manifestations of these disorders.

In this paper, we present the most recent data regarding the etiology of monostotic and polyostotic fibrous dysplasia, as well as of McCune-Albright Syndrome, and discuss different sights of the above disorders associated with molecular changes.

Key Words: Fibrous Dysplasia; McCune-Albright Syndrome; G proteins; c-fos-oncogene; Mutations

Association of Unstimulated Salivary Flow Rate and Labial Salivary Gland Histopathology with Serologic Features of Sjögren's Syndrome

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SUMMARY

Sjögren's syndrome (SS) is a chronic autoimmune disorder with its major clinical manifestation resulting from changes in exocrine glands. An autoimmune aetiology of SS is supported by the presence of autoantibodies specific for nuclear anti Ro (SS-A) and anti La (SS-B) antigens and other antinuclear antibodies (ANA) in sera of SS patients. The aim of the study was to evaluate the frequency of positive values of anti SS-A, anti SS-B antibodies and ANA in serum of 40 SS patients, and to correlate the above mentioned parameters with unstimulated salivary flow rate (USFR) and labial salivary gland focus score (LFS). Total of 40 patients was included in this research, 23 patients with primary SS and 17 with secondary SS. ANA was detected by the method of indirect immunofluorescence, and anti Ro/SS-A and anti La/SS-B antibodies were quantified by sandwich (Elisa) assay.

The positive values of ANA were identified in plasma of 32 examined SS patients (80%), anti SS-A (Ro-52 kDa, Ro-60 kDa) antibodies were positive by 22 patients (55%), and anti SS-B antibodies were positive in less than 50% of examined SS patients (40%). The most presented were the patients with medium expressed xerostomia. Significant correlation between the unstimulated salivary flow rate and the positive values of ANA, anti Ro/SS-A, and anti La/SS-B antibodies could not be noticed.

With increasing severity of disease there was an increase of the number of lymphocyte foci and a progressive loss of acinar tissue. High level of anti Ro/SS-A antibodies was found more often in plasma of the SS patients in a case of progressive loss of acinar tissue of the salivary gland (terminal stage), with statistical significance.

It was concluded that the increased prevalence of positive values of anti Ro/SS-A antibodies and ANA indicates that the patient with SS has developed higher level of autoimmune reactivity. Level of anti Ro/SS-A antibodies in the peripheral blood of the patient with SS could be a significant marker of the degree of salivary/tissue destruction and disease severity.

Key words: Sjögren Syndrome; ANA; Anti Ro/SS-A antibodies; Anti La/SS-B antibodies

Assessment of Available Bone in the Region of the Mental Foramen for Insertion of Dental Implants

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SUMMARY

The aim of this study was to investigate the quantity of the residual bone above the mental foramen/canal relevant to insertion of dental implants. Measurements were performed on 39 dried mandibles that were sectioned perpendicular through the mental foramen. The thickness of bone was measured from the alveolar crest to the mental foramen and the mental canal, as well as from the mental canal to the lingual cortex.

Mean distance between the alveolar crest and the mental foramen was 14.79 mm, ranging from 5.3 mm to 21.2 mm. The bony height measured between the alveolar crest and the mental canal was 17.34 mm, ranging from 6.67 mm to 24.43 mm. The mean difference was 2.99 mm, ranging from 0.5 to 6.33 mm. Bone thickness measured between the mental canal and the lingual cortex was 5.43 mm, ranging from 2.43 mm to 8.97 mm. It is concluded that the distance between the alveolar crest and the mental foramen can be used as a reliable guide for the length of an implant to be inserted in the region of the mental foramen. Such an implant can be 2 mm longer than this distance.

Key words: Mental Foramen; Dental Implant

Healing of Extraction Wounds in Rats with Salivary Gland Hypofunction

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SUMMARY

Wound licking has been shown to promote extraoral wound healing among animals. Although the oral mucosa is bathed in saliva, little information about the role of saliva in oral wound healing is found. The present study evaluates the healing of extraction wounds in salivary gland hypofunction (SGH) rats. Experimental rats underwent sialoadenectomy of submandibular and sublingual glands and ligation of the parotid ducts. Maxillary left 1st molars were extracted. Rats were sacrificed at 0, 1, 3, 5, 7, 10, 14 and 21 days after surgery and maxillae were prepared for light microscopy examination.

In general, a delay in socket healing in the SGH rats was observed. No differences were detected in blood clot formation. Replacement of the clot by granulation tissue was relatively slow concomitant with a longer inflammatory process. Bone formation kinetics was slower among the experimental rats.

Key Words: Salivary glands, Hypofunction; Extraction wound

Early Extraction of the Maxillary Third Molar in Cases of Eruption Disturbances of the Second Molar

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SUMMARY

Background: General agreement has been reached on extracting third molars when they are involved in pathologic process. However, early extraction is advisable in cases of eruption disturbances of the maxillary second molar, before or during orthodontic treatment.

Material: We present 18 cases of early extraction of the maxillary third molar before or during orthodontic treatment. In these cases either the presence of the third molar presented an obstacle in the eruption path of the second, or third molar germ removal was considered beneficial to the course of orthodontic treatment.

Conclusions: Early extraction of the upper third molar facilitates the eruption of the second molar, especially in cases where evidence of crowding and lack of space in the posterior region exist. Orthodontic treatment may, in some cases, aggravate eruption disturbances of the second molar.

Key Words: Third molar, extraction; Impaction

Quantitative Evaluation of Digitising Conditions of a Flatbed Scanner

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SUMMARY

Objective: To determine the performance of a flatbed scanner with transparency adapter with regard to the scan reproducibility, and the homogeneity.

Methods: An Umax Powerlook II (Umax Technologies, Inc, Taiwan) flatbed scanner was used to digitise a stepped exposure image on Kodak Ultraspeed occlusal sized films. 8 serial exposures were made from 0.4 to 2.5 sec. The stepped exposure images were scanned at various locations, with and without shielding of surrounding light. The mean grey value level of each step was analysed using UTHSCSA Image Tool 2.0 (University of Texas Health Center, San Antonio) software. The stepped exposure images were also scanned by a digital transmission densitometer (TD 932 Machbeth, Newburgh, NY, USA) to measure the optical densities of the steps on the films for comparison. Noise, distortion and contrast of the resultant images were evaluated to determine the physical performance of the scanner with regard to various scanning conditions.

Results: The flatbed scanner converted optical densities to pixel values in a linear fashion for clinically relevant densities less than 1.3. Images scanned at the same location without shielding showed a very similar density distribution and noise pattern. When the surrounding light was shielded, density distribution profile differed and an increase was observed in noise pattern. Geometric errors were significant both on the vertical and horizontal planes for all scanning conditions.

Conclusion: Calibration of the operating conditions for flatbed scanners should be meticulously controlled for both diagnostic and research purposes.

Key Words: Flatbed Scanner; Radiography

Radiation Dose Rates of Occupational Staff in Dentistry Clinics of Albania, Monitored by TL-Dosimeter for 1995-2001

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SUMMARY

Our study shows some results evaluating the annual effective radiation dose in dental clinics of Albania during 1995 - 2001 years. The annual effective dose of an exposed worker in dentistry may not exceed 1 mSv, or where the equivalent dose to the lens of eye is more than 15 mSv, or equivalent dose to the skin exceeds 50 mSv. We have used the Harshaw 4500 TLD - system already, monitoring the dose rate of occupational staff in all dentistry clinics of Albania. Monitoring has been individual for workers of category A. For practical reasons, monitoring in category B has also often been arranged as individual monitoring. The mean annual effective dose of Occupational staff in dental clinics of Albania has been about 10 μ Sv for 7 last successive years. It is in correspondence with contemporary results of the Nordic and UK countries^{3,5}.

The Effect of Bleaching Agents on the Surface Morphology of Human Enamel: A Scanning Electron Microscopy Study

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SUMMARY

Enamel discolorations and opacities, especially when observed on the labial surfaces of maxillary anterior teeth, can cause an aesthetic problem which patients may wish to be improved. A number of options are available to achieve an aesthetic improvement ranging from full crowns, laminate veneers to bleaching. However, it has been shown that the application of bleaching agents on the surface of enamel can cause some structural alterations¹. Therefore, the aim of this study was to evaluate *in vitro* the effects of application of a number of bleaching agents used for home- and surgery bleaching techniques, on the surface characteristics of enamel.

10 extracted human, central and lateral incisors were selected for this study. The teeth were divided into 2 groups of 5 teeth each. The labial surface of each tooth was marked with Sof-Lex discs so that 4 sections were available. At each of the 4 sections of the teeth of the first group the following agents were applied: Encore (10% carbamide peroxide) for 6 hours, Starbrite for in-surgery bleaching (35% hydrogen peroxide mixed with silicon dioxide) for 20 minutes and 37% phosphoric acid. 1 out of the 4 sections of each tooth was left intact to be used as a control. Each one of the 4 sections of the teeth of the second group, the following agents were applied: Starbrite for home-bleaching (16% carbamide peroxide) for 6 hours, 35% liquid hydrogen peroxide for 20 minutes, and 37% phosphoric acid. Again, 1 out of the 4 sections of each tooth was left intact to be used as a control. After the application of these agents the enamel surface of the teeth from both groups was viewed under a scanning electron microscope.

The application of Encore and Starbrite for home-bleaching (10% and 16% carbamide peroxide respectively) had slight effects on the enamel morphology. Slight alterations on the enamel surfaces were also observed when 35% liquid hydrogen peroxide was applied. The effects of Starbrite for in-office bleaching were more pronounced by causing surface alterations and increased porosity on the enamel surfaces.

Key Words: Hydrogen peroxide; Carbamide peroxide; Bleaching Agents; Dental Enamel

Marginal Leakage of Visible Light-Cured Glass Ionomer Cement, Compomer and Composite*

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ORIGINAL PAPER (OP)

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SUMMARY

The aim of this study was to evaluate marginal leakage of different types of restorative materials, such as visible light-cured glass ionomer (Vitremar, 3M, USA), compomer (Dyract De Trey, Dentsply, Germany) and composite (Prodigy, Kerr, USA). 30 extracted non-carious human molars were prepared with standardized Class V cavity outlines on the buccal surfaces at the cemento-enamel junction.

The teeth were randomly divided into 3 groups of 10 each, and restored according to the manufacturer's directions. The restored teeth were thermo-cycled (5°C-60°C x 100 times), and immersed in 0.5% basic fuchsin dye solution for 24 hours. After sectioning, the marginal leakage was evaluated under a measuring microscope and then the marginal leakage scores were evaluated statistically.

The highest marginal leakage was found in the composite group ($p < 0.05$). However, there was no statistical difference between the light-cured glass ionomer cement and the compomer groups ($p > 0.05$).

Key words: Compomer; Composite Resin; Marginal Leakage

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Masseteric Silent Period during the Initial Functional Adaptation to Complete Dentures

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SUMMARY

Purpose: The purpose of the study was to determine whether the functional adaptation of patients to new complete dentures had influence to latency and silent period (SP) of the masseteric muscle reflex.

Methods: The study consisted of 20 patients with healthy cranio-mandibular system, correct relation of the jaws, and provided with new upper and lower dentures. The average age was 65 years (range 59-71). Recording of the silent period caused by myotatic reflex was performed using the bipolar needle electrodes bilaterally inserted into masseteric muscles at the predetermined time intervals: before, immediately after the placement of new dentures and after 7, 14, 21, and 90 days of their permanent use, respectively.

Results: Control recording of the duration of SP before placement of new complete dentures was 18.2 ± 1.0 ms and the latency of SP was 16.2 ± 0.9 ms. Immediately after the placement of new complete dentures the duration of SP caused by myotatic reflex significantly decreased (11.0 ± 2.4 ms) and the latency significantly increased (31.6 ± 2.2 ms). At later time-intervals, the duration of SP increased and after 21 days achieved a stable level (16 ms). Latency of SP had the tendency of re-establishing the physiological values after 21 days of the dentures' wearing.

Conclusion: The findings in this study suggest that the duration and latency of SP were in direct correlation with the initial functional adaptation to complete dentures.

Key Words: Masseteric muscle; Electromyography; Silent period; Denture, complete

Investigation of Dental Health Education on School Children with Special Reference to Socioeconomic Status

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SUMMARY

The aim of the study was to investigate the effect of a dental health education programme on children from different socioeconomic status (SES). The study population consisted of 200 elementary school children at the age of 8 years \pm 6 months. The children were examined intraorally using mirror and probe with sufficient daylight in their classrooms. The tooth-brushing habits, dentist attendance, and orthodontic treatment needs, were noted. Then they watched an oral health education video programme in groups of 15-20. A questionnaire was filled to detect their knowledge about dental health after the programme.

Caries free children were 33.03% in high SES, 19.4% in middle SES, and 15.58% in low SES. The percentage of children with good oral hygiene was higher in high SES (46.4%). The answers to the questionnaire after the dental health education programme revealed that children were educated similarly from all SES.

Key Words: Dental Caries; Dental Health Education

Dental Knowledge and Attitudes of Primary Schoolteachers in Ankara, Turkey

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ORIGINAL PAPER (OP)

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SUMMARY

The purpose of this study was to assess the dental knowledge and attitudes of the primary schoolteachers in different schools in Ankara. 100 primary schoolteachers were included in the study. The data from teachers were collected by self-administered questionnaires that included questions on dental knowledge and attitudes.

Most of the teachers answered the questions related to causes of dental caries and gingival diseases incorrectly. It was also observed that their knowledge about fluoride and fissure sealants application was poor. Study showed that schoolteachers had the lack of knowledge about avulsed teeth. Teachers had received dental information from different sources, mostly from dentists, followed by books, TV programs and newspaper. Most of the teachers answered that they discuss dental problems in the classroom and warn the parents to take their children to a dentist, and told the children to brush their teeth twice a day. The study revealed that the level of knowledge on the causes and the prevention of dental diseases was low among the schoolteachers. They could become relevant key persons in oral health education; however, they need motivation, appropriate training and practical support from dentists, including the provision of educational materials.

Key words: Dental knowledge; Schoolteachers; Oral health, education

Pyogenic Granuloma of the Oral Cavity: Histopathologic and Histochemical Study

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SUMMARY

This study was undertaken on purpose to understand the aetiopathogenesis of pyogenic granuloma of the oral cavity. 34 cases were retrospectively studied. The results suggest: (1) The pyogenic granuloma that is consisted of diffuse arrangement of proliferating blood vessels and blood vessels like that seen in mature capillary haemangioma is likely to constitute a reactive hyperplasia; (2) The pyogenic granuloma that is consisted of both proliferating blood vessel arranged in lobules and of diffuse arrangement of proliferating blood vessels and blood vessels like that seen in mature capillary haemangioma may be a pre-existed capillary haemangioma that underwent further vascular proliferation from a local etiologic factor; (3) The endothelial cells predominate in the cellular population of the lesion; (4) The hyaluronic acid of the stroma may have angiogenic and vascular remodelling effect in pyogenic granuloma which is reactive hyperplasia; (5) The mast cells in lobules without inflammatory infiltration may be related to maturation of blood vessels.

Key words: Pyogenic Granuloma, Capillary Haemangioma, Reactive Hyperplasia, Hyaluronic Acid, Mast Cells

Granulomatous Cheilitis: Report of 2 Cases

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**CAE REPORT (CR)
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SUMMARY

Granulomatous cheilitis is a rare disorder of unknown cause characterized by recurrent or persistent swelling of one or both lips and a typical histological picture of non-caseating granulomas. Granulomatous cheilitis has been recognized as part of the Melkersson-Rosenthal Syndrome, or as a manifestation of Crohn's disease and other conditions presented with similar granulomatous formations.

We report 2 cases with recurrent oedema of the lips. The biopsy of the enlarged lips showed the presence of non-caseating epithelioid granulomas containing Langhans-type giant cells in both cases. Routine blood screening and biochemical analysis were performed in both patients. The results indicated the presence of granulomatous cheilitis in both patients. The therapeutic regimens included corticosteroid therapy, topical or intralesional. The clinical features, the histopathologic picture, the differential diagnosis, the management and treatment of this disorder are presented and discussed.

Key words: Granulomatous Conditions; Lip; Oral Mucosa; Epithelioid Granulomas

A Modified Fossa Implant in TMJ Ankylosis (A Technical Report)

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TECHNICAL REPORT (TR)

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SUMMARY

The purpose of this paper was to present a TMJ prosthesis in treatment of ankylosis. An alternative technique for TMJ arthroplasty was described. After creating a gap an acrylic fossa implant, which was affixed by curing on a titanium mesh plate was placed. A specifically designed spacer may be useful addition in treatment of TMJ ankylosis.

Key Words: Temporomandibular Joint; TMJ Prosthesis; Ankylosis; Spacer