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Prashanthi S Madhyastha, J Dent Craniofac Res 2018, Volume 3
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AN *IN-VITRO* EVALUATION OF THE EFFECT OF STORAGE TIME ON PHYSICAL PROPERTIES OF CONVENTIONAL AND EXTENDED-POUR ALGINATES

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The purpose of the study was to evaluate the surface detail reproduction, gypsum compatibility and dimensional stability of two conventional and one extended pour alginates at different storage time (0, 1, 3, 5 days respectively). Three alginate materials Coltoprint, Jeltrate and Hydrogum % were tested for surface detail reproduction, gypsum compatibility and dimensional stability in accordance with American National Standards Institute American Dental Association (ANSI/ADA) specification number 18 and 19. The gypsum compatibility was tested using type III dental stone. The parameters tested were analysed between the groups using one way ANOVA & Tukeys post hoc. A repeated measure ANOVA was used for time periods. Alginate type and storage times significantly affected the dimensional stability of impressions and compatibility of casts ($p<0.001$). In all alginate, no statistically significant differences were found with impressions poured after 0 hours (control) and one day of storage ($p>0.05$). However, after 3 days and 5 day of storage, Hydrogum 5 was found to be significantly different ($P<0.05$). Moreover, comparing materials there was no significant difference up to 5 days ($p>0.05$). However, Hydrogum 5 may be poured after 5 days, but Coltoprint and Jeltrate should be poured immediately and the storage time should not be more than 24 hours. All the three test materials exhibited linear dimensional change within the ADA's accepted limit of 1.0%. Immediate pouring of alginate provides the highest accuracy in reproducing the teeth and adjacent tissues, with less variability in linear dimensional change. However, this study demonstrates that pouring may be delayed for up to 5 days using extended pour (Hydrogum 5) alginates.

Biography

Prashanthi S Madhyastha has completed her PhD from Manipal Academy of Higher Education (MAHE), Manipal. She is the Member Secretary of Institutional Ethics Committee, Manipal College of Dental Sciences, Mangalore. She has published more than 14 papers in reputed journals.

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ROLE OF HAND AND FOOT PRINT DIMENSIONS IN STATURE IDENTIFICATION AMONG INDIAN POPULATION

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Introduction: The four essential factors in Forensic Anthropology, representing in determining personal identification are age, sex, stature and ethnicity. Among this 'big fours' of the biological profile, determination of stature is considered as one of the main parameter of personal identification in forensic examinations. Thus, this study will aim to correlate relation between hand and foot measurements with stature of individual.

Aim of the study: The study aimed to estimate the relationship between statures of an individual on the basis of, hand and foot prints, in Indian populations.

Materials & Methods: The study group comprised of 500 subjects (age group above 18 years) with normal growth and development.

Measurement of height: The measurements of height were made using standard anthropometer by making the subject stand erect on the horizontal plane. The distance of the subject from the ground to the highest point of the vertex in the median sagittal plane was recorded. Various parameters like Hand length and Hand breadth, Foot length and breadth, Heel Ball Index were measured and compared with the height of the individual using the standard technique.

Results: Correlation of the various hand and foot parameters showed a regression coefficient range of 0.3-0.708. Among all variables measured, Foot length exhibited the highest correlation with stature (r value of 0.706 and 0.708, p-value< 0.001). Further forward stepwise linear regression analysis (height=80.295+3.390 * foot length) established foot length to be the single best predictor of height (r value of 0.708 and standard error of 4.23cms).

Conclusion: Thus, the foot length provides highest reliability and accuracy in estimating stature of unknown males and females. Also this study will help to generate population-specific equations using a simple linear regression statistical method.

Biography

Nandita K P has completed BDS and MDS in Oral Pathology & Microbiology in Manipal College of Dental Sciences, Mangalore and is presently working as Associate professor in Department of Oral Pathology & Microbiology, Manipal College of Dental Sciences, Mangalore, (Manipal Academy of Higher Education, Manipal, Karnataka, India). She has published 16 papers in reputed journals and is also the faculty member for Certificate course for Forensic Odontology and won Research awards like TMA PAI GOLD medal and GUIDENT award.

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KNOWLEDGE ABOUT HALITOSIS AMONG UNDERGRADUATE STUDENTS IN A DENTAL COLLEGE

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Background: Halitosis is a universal medico social problem and is termed as bad breath. It is known to have significant social and personal impact to those who suffer from it or believe they do so. General public is increasingly aware of the condition and concerned of the same.

Objective: The aim of the present study was to assess the knowledge of halitosis among undergraduate students in Manipal College of Dental Sciences, Manipal University, Mangalore.

Materials & Methods: This was a questionnaire based study, conducted among 112 dental graduates studying in the 3rd and 4th year. The responses obtained were compiled and the statistical analysis of the data was done using frequency and percentages.

Results & Conclusion: Ninety nine percent of the respondents answered that periodontal disease was the major cause for halitosis, and eighty percent of them agreed that habits like smoking, tobacco chewing and alcohol consumption led to halitosis. Halimeter was considered to be the way to diagnose halitosis by sixty percent of them. From this study, it can be deduced that the respondents are capable of diagnosing and managing halitosis since they have knowledge of the same.

Biography

Swati P has completed her MDS from Manipal Academy of Higher Education (MAHE), Manipal. She has been the recipient of awards for research publication and paper presentations. She has published more than 20 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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THE PAIN VALUE AND TOUCH THRESHOLD OF PATIENT WITH TRIGEMINAL NEURALGIA – THE EFFECT OF GAMMA KNIFE STEREOTACTIC RADIOSURGERY

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Trigeminal neuralgia (TN) is a chronic neuropathic pain disorder that makes daily life difficult. Recently, Gamma Knife surgery (GKS) has been employed for treating intractable pain control such as trigeminal neuralgia (TN) or cancer pain. Nine patients (4 males and 5 females) with TN of second branch were investigated in this study. All patients (mean age: 66.7±7.5) were irradiated a maximum dose of 90 Gy at retrogasserian after the target area were coordinated with magnetic resonance imaging (MRI) and computed tomography (CT). They were asked symptom, medical history and what induces the pain attack. We also assessed visual analog scale (VAS) of pain, presence or absence of allodynia, cold sensation dullness and touch threshold on the lateral of nasal wing using Semmes-Weinstein monofilaments before and 1, 3, 6, and 12 months after GKS. The relation of the pain value and touch threshold were estimated. There were two kinds of pain character, like an electric shock (5 patients) and like prickling (4 patients). The mean±SD of pain VAS value was 8.5±1.4 and touch threshold on disease side (6.0±2.8 gf/mm^2) was significant higher than the healthy side (3.7±1.3 gf/mm^2) at first visiting (paired t-test; P<0.05). All patients experienced a significant pain reduction without side affections within 6 month after GKS. Allodynia, facial paresthesia or cold sensation dullness occurred before GKS disappeared within 3 months after treatment. However, there was no correlation between pain value and touch threshold. These results suggest that GKS is safe and effective method to let a pain and dysesthesia due to TN disappear. There are individual differences in these effects after treatment.

Biography

Mihoko Tomida has graduated from School of Dentistry at Asahi University and Graduate School of Medicine, Gifu University and acquired PhD. After having worked as an Oral Surgeon for four years; she became a teacher of Physiology. And she started to investigate the relationship between pain and emotion by using rat and human. She found that the pain was involved with nerve cells of an amygdala and the cingulate cortex from animal experiment. It was clear that listening to music reduces the pain perception from human experiment. However, the reason is unclear. Now, she looks into the relation between pain threshold and autonomic nerve activity.

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ORAL AND SYSTEMIC MANIFESTATIONS AND ITS RELATION TO CD4 COUNTS IN HIV PATIENTS ON HAART-AN OBSERVATIONAL STUDY

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Introduction: Oral and systemic manifestations are common in HIV/AIDS and are considered to be important predictors of the disease. CD4 count serves as an important marker for the progression of HIV to AIDS. Our objective was to correlate the oral and systemic manifestations associated with HIV infection with CD4 count in patient's on HAART.

Materials & Methods: This was an observational study among one hundred and ten HIV diagnosed patients. The oral and systemic manifestations were noted and compared to their CD4 counts. Chi-square analysis was carried out to see the association of oral manifestations. P<0.05 was considered statistically significant.

Results: Among the 110, fifty had CD4 count >500 cells/μL, 46 patients had between CD4 count between 200-499 cells/μL and fourteen had <200 cells/μL. Among patients with CD4 > 500, the oral manifestations observed are as follows, dental caries (n=30, 60%) periodontitis and lipoatrophy (n=25, 50%) and in CD4 count between 200-499, dental caries (n=28, 60.9%) intraoral pigmentation (n=23, 50%), periodontitis (n=20, 43.5%) and with subjects with CD4 count. The most common systemic manifestation observed were tuberculosis (p<0.001) and pneumonia (p<0.003).

Clinical Significance: Prevalence of oral and systemic manifestations among HIV infected patients have declined since the advent of highly active antiretroviral therapy (HAART). Oral and general physicians should be able to identify and treat the patients at the earliest, which in turn could reduce the morbidity and mortality rates among those infected with HIV.

Biography

Ceena Denny has completed her Master's degree in Oral Medicine and Radiology from Bapuji Dental College and Hospital, Davangere in the year 2006 and is currently working in Manipal College of Dental Sciences, affiliated to Manipal Academy of Higher Education as an Associate Professor in the Oral Medicine and Radiology. She has more than 40 publications in various national and international journals and has also presented research papers in national and international conferences. She has authored chapter in text book of Oral Medicine and Radiology published by Elsevier's science. She frequently conduct lecture in CBCT as a part of certificate programme.

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DENTAL TREATMENT OF PATIENT WITH SYSTEMIC LUPUS ERYTHEMATOSUS IN HOSPITAL ENVIRONMENT: CASE REPORT

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Systemic lupus erythematosus (SLE) is an autoimmune disease of unknown etiology and incurable; in most cases with medical care and an interdisciplinary team can live with the disease without major complications. Lupus can be associated with other conditions such as hypertension, diabetes, neuropsychiatric disorders, kidney infections, chronic renal failure, infections in the membranes that cover the heart and lung, skin lesions among others. The patient with an underlying pathology and comorbidities, is considered a particular patient therefore needs constant medical care. In dentistry, a patient with such a disease should be treated at the hospital for necessary support if there are complications or decompensation at the dental procedure. This study had as objective report the clinical case of SLE patient, hypertension, chronic renal failure, diabetes and depression, requiring holding three extractions. According to the assessment of medical and dental staff, the procedures were performed in the hospital setting, under conscious sedation. In the immediate postoperative period the patient presented a complication which was promptly answered still in the operating room. This work has allowed us to say that history, with emphasis on the underlying pathology and associated comorbidities, along with the planning done between the medical and dental staff, enabled a dental care insurance, protecting the life of the patient.

Biography

Cinthia June Ribeiro Santos has completed her studies at Faculdade Presidente Antonio Carlos- ITPAC, Tocantins-Brasil. She is currently working in the Health Space Clinic on Esthetic Dentistry and Orofacial Harmonization. This article was written in the year 2015, during that year, she used to work in a hospital, treating patients who needed general anesthesia and sedation to undergo dental treatments.

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THE EFFECT OF DIODE LASERS IN DENTISTRY

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Lasers are used in soft and hard tissues treatment and can be classified to various types of laser used in treatment like He-Ne (632.5 nm), diode lasers with various wavelengths 810, 940, 980, 1064 nm, Nd: YAG (1064 nm), CO_2 (10600, 9600, 9300 nm), Er: YAG (2940 nm) and Er, Cr: YSGG (2780 nm). One of the most dominant lasers that used in dentistry are diode lasers with their different wavelengths, It is important to know the role of diode lasers in dentistry and their dental applications with different wavelengths as treatment of haemangioma by photocoagulation is easier with 980 nm than 810 nm as absorption of haemoglobin in 980 nm is more than in 810 nm. Regarding the photobiomodulation therapy the main chromphore that used is cytochrome c oxidase, the effect of 810 nm is greater than 980 nm, and it will be more effective in pain relief, wound healing as treatment of aphthous ulcers and herpes simplex. On the other hand the energy of 445 nm is higher than 635 nm, and it will be more efficiency in cutting the tissue. Dental diode lasers applications are a lot as gingivectomy, oral depigmentation, frenectomy, tongue tie, treatment of dentinal hypersensitivity and bleaching. On other wise diode lasers has a great effect in endodontics and periodontology, so author will assess and appraise the effect of diode lasers in dental applications.

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A REGENERATIVE TREATMENT FOLLOWING ROOT SURFACE BIOMODIFICATION USING ENAMEL MATRIX PROTEINS OR DENTIN COLLAGEN – CELL CULTURE EXPERIMENTAL PROCESS

Mahmoud Helmy Belal
Damanhour University, Egypt

Objective: The aim of this study was to assess the effect of using enamel matrix proteins (EMP) or dentin collagen in the treatment of human root surfaces as bio-modifiers.

Material & Methods: Thirty root slices were obtained from proximal surfaces of fifteen lower anterior teeth that had been extracted due to hopeless periodontitis. The root slices were randomly divided into three groups and subjected to one of the following treatments: I) Control group (no treatment received), II) Enamel matrix proteins, III) Dentin collagen. Periodontal cells were seeded in each group with a concentration of ($5x10^3$/20 µl), and incubated for seven days on dentin surfaces of the root slices. Following incubation, the attached cells were calculated and also the cell morphologies were evaluated by SEM. The statistical analysis was done using One-way ANOVA test at ($p \leq 0.05$).

Results: Second and third groups did not show significant differences regarding attached cells ($p>0.05$), but showed significance in comparison to control. However, the attached cells were highest in second group (EMP) and lowest in the control group. Regarding cell morphologies, control group had mostly round to oval cells whereas other two experimental groups showed evidently flat elongated cells.

Conclusion: Despite EMP showed the highest gained attached cells, both of EMP and dentin collagen showed comparable effective positive way on the adhesion and attachment of cells to root surfaces. This may has a critical major role in the periodontal regenerative treatment.

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SELF-CARE REMEDIES USED TO RELIEVE DENTAL PAIN AMONG SUDANESE IN KHARTOUM STATE, SUDAN: A CROSS-SECTIONAL STUDY

Bassam Maged Ahmed, Israa Ahmed Ali, Fatima Siddiq, Kinobe Muhamadi and **Mohammed Hassan Aljezooli**

International University of Africa, Sudan

Aim & Objective: This study aimed to identify self-care remedies used to relieve dental pain among Sudanese in Khartoum state, 2016-2017, with assessment of related concerns such as predisposing reasons, and consequences associated with this usage.

Methods & Tools: The appropriate sample was obtained by non-probability purposive sampling technique. The data were collected by investigator-handled community-based questionnaire and all statistical analysis was done using IBM statistical package of social science (SPSS) statistics version 22.

Results: The study included 384 participants (75.5% male, and 24.5% female). Age of the participants started from 18 years old with most of the respondents aged between third to fifth decades of life. The most frequently used remedy was cloves (33.8%) alongside with a wide variety of other remedies. The potentiating factors for this usage included personal preference (47.4%), self-apprehension (23.7%), high costs and lack of dental health services (22.4% and 5.2% respectively) and combination of some reasons. Although a number of complications were associated with those remedies such as pain (7.5%), burning sensation (4.2%), irritation (2.3%), discoloration (2.1%), bad smell (1.3%), 73.2% of participants stated that they would encourage other people to use those self-care remedies. This suggests a low level of awareness about the risk of oral health problems among the study population.

Conclusion: Cloves is the most commonly used self-care remedy by the participants. Personal preference, among others, is the most predisposing motive for this usage. Upgrading awareness about risk of oral health problems, expanding health insurance services to include dental health care services, and demonstration of rational use of over-the-counter medicaments is needed.

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MIDFACIAL BONE FRACTURE: DETERMINING THE ETIOLOGY, SITES OF FRACTURE AND DIFFERENT TREATMENT APPROACHES

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Aim: The main objective of this study was to locate the fracture of midface and treatment modalities of the same through different approaches.

Materials & Methods: The patients treated for midfacial bone fractures at the oral and maxillofacial surgery department of Kantipur Dental College Teaching Hospital and Research Center during a two-year period between January 2014 and December 2015 were retrospectively analyzed for age, sex and type of injury, cause of fractures, consciousness status and alcohol abuse during trauma.

Results: 304 patents were included in the study, 183 (60%) males and 121 (40%) females, with a total of 412 fractures. Physical assaults were the most common cause both in young patients and adult patients (43%) and (47%) respectively. Commonest fracture sites were buttress (32%) and zygomatic arch (20%) in young patients and zygomatic arch (34%) and fronto-zygomatic suture (30%) in adults. Midface fractures is generally treated by mini plate osteosynthesis (69%) both in young and adult patients.

Conclusion: This study revealed that the main cause of midfacial fracture is physical assault both in young and adult patients (43%) and (47%) followed by falls (37%) and (22%) respectively. Preventive health care programs should seek measures in the reduction of aggression and violence in close future involving family, school and community institutions.

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VOLUMETRIC ANALYSIS OF SEXUAL DIMORPHISM IN ANTERIOR TEETH

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Sex estimation is often a necessary step when constructing a biological profile from unidentified human remains. Teeth are among the most frequently recovered human tissues that remain after death as they are hard, long lasting, and resistance to post-mortem insults. The most commonly reported tooth measurements for sex estimation are the maximum mesiodistal and buccolingual crown measurements. These measurements, however, are difficult to obtain in worn teeth or crowns that are embedded in the jaw. To solve this issue, the present study investigated a new technique for sex estimation using volume of the tooth root. For this purpose, a total of 170 3D models of permanent maxillary and mandibular anterior teeth were used for sex estimation. The sample was composed of 41 individuals (23 males, 18 females) from two Iron Age populations in north-western Iran (Hasanlu and Dinkha Tepe). Tooth root volume measurements were analysed by discriminant analysis and methods using SPSS 23.0 software package. The accuracy of sex estimation ranged from 90.6-100% with single variables. In stepwise discriminant function analysis maxillary and mandibular canines were found to be the most discriminating variables providing an accuracy rate of 100%. This study shows that tooth root volume is highly sexually dimorphic and can be very useful for sex estimation, especially when the traditional dental measurements are not applicable.

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SYNTHETIC GRAFT MATERIALS IN IMPLANT DENTISTRY

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The use of grafting materials in implant detistry is widespread. Membrane use in guided bone regeneration is often considered to be a fundamental requirement to stop soft tissue ingrowth and stabilise the graft material. Whilst this holds true for many materials, the development of fully synthetic (alloplastic) materials has obviated the need to use membranes in most cases. Grafts containg beta tricalcium phosphate and calcium sulphate offer a stable, setting, cell occlusive medium in which host bone can develop. The direct apposition of periostium to the graft means that there is no barrier to the periostial blood supply in healing. Specific protocols have been deveoloped around the unique properties of these matierals. Author has used these materials exclusively for over 10 years and in hundreds of procedures and will share the applications, from single tooth placement to more complex including sinus augmentation including recent research. He has found that utilisation of alloplastic materials that are highly biocompatable can reduce post operative pain and shorten treatment times.

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PERIODONTAL MUSCLE TRAINING CAN STRENGTH THE PERIODONTAL SUPPORT FEET YOUR TEETH

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Previous research on periodontal structure and function has shown a significant relationship between periodontal tissue and teeth. This study assessed dentist's beliefs about the relative efficacy of the health of periodontal tissue. A total of 505 patients in general practice were asked to respond to a list of 25 obligatory nourishment for a child while going to have the first teeth, for its effectiveness in dealing with patient's periodontal health especially include chewing hard food. They were also asked to select three most effective nutrition for periodontal tissue. The indices of patient perceived importance of the periodontal health were derived and each compared with actual effectiveness as determined from a sample of 250 patients. Although the majority of patient's rated 18 of 25 nutrition as being very effective, there was no significant association between patients' perceived nourishment effectiveness and actual effectiveness. The implications for patient training are discussed.

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ADVANCES IN CAD/CAM MATERIALS AND TECHNIQUES FOR IMPLANT PROSTHODONTICS

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Dental implantology is being widely improved with CAD/CAM technologies introducing new solutions in key steps in implant therapy. Treatment planning, guided surgery, intraoral impressions, restoration fabrication can be accomplished with reduced clinical and laboratorial fabrication steps. Clinicians can now offer better final outcomes for dental implants with better fit and more aesthetic restorations, improved biocompatibility and resistance, thus avoiding inaccuracies that can occur from dental materials and reducing the chance of human errors. Current CAD/CAM systems permit the fabrication of customized abutments using a variety of materials and design strategies. Some dental implant manufacturers recommend that Ti-based abutments should be used and onto which a monolithic crown or a mesostructure can be designed, however directly designing a customized abutment including the implant-abutment interface could be manufactured using materials and strategies from bench-top laboratory machines. Recent scientific findings suggest that CAD/CAM systems can provide accurate implant-abutment interface, however some manufacturing factors may interfere with such high standard adaptation, including the use of additive or subtractive strategies, the quality of the milling machine and the intrinsic properties of the preparation material. The objective of this lecture will be to present recent advances in CAD/CAM dental abutment technologies and strategies, to the light of scientific evidence.

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DO WE STILL NEED TO USE FORMOCRESOL?

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Background: Alternatives to vital pulpotomy treatment in primary teeth are being sought because of the high formaldehyde content of traditional formocresol (FC) pulpotomy medicament and the high cost of other proposed alternatives.

Aim: The aim of the study was to evaluate clinical, radiographic and histopathologic effects of sodium hypochlorite (NaOCl) and propolis pulpotomies in primary molars compared to FC pulpotomy.

Materials & Methods: One hundred and twenty teeth in 60 systemically healthy children aged 4-7 years were included in the study. Patients were randomly allocated into two groups, Group I in which 60 teeth in 30 patients received either 5% NaOCl or 1:5dilution FC using split mouth design and Group II in which 60 teeth in 30 patients received either 100% propolis pulpotomy or 1:5 dilution FC using split mouth design, all teeth were restored using stainless steel crown. Clinical and radiographic evaluations were performed at 6 and 12 months. Ten primary molars planned for extraction due to orthodontic reasons in 10 systemically healthy children aged 8-10 years, were included for the histologic part of the study. Patients were randomly allocated into two groups, Group A where patients received NaOCl puloptomy and Group B where patients received propolis pulpotomy. All teeth were restored with glass ionomer, extracted after 2 months, and prepared for histopathologic evaluation under light microscopy.

Results: At 6 months, NaOCl showed 100% clinical and radiographic success rate, while propolis showed 60% and 40% clinical and radiographic success rate respectively. After 12 months, the clinical and radiographic success rates were 100% and 85.7% respectively for NaOCl, and 65.5% and 31% for propolis. Histologically, primary molars treated with sodium hypochlorite showed dentine bridge formation and organized odontoblastic layer and propolis samples showed pulp necrosis.

Conclusion: NaOCl could be used as an alternative to FC pulpotomy propolis showed unsatisfactory results when used in pulpotomy of primary teeth.

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SHADE MATCHING IN ESTHETIC DENTISTRY

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Color is light. Attractive restorative outcomes begin with an adequate tooth shape and silhouette that reflect light properly. This is essential in order to meet patients' expectations and positively influence their self-esteem. The color the eye perceives is a wavelength of light that our eyes interpret using rods and cones. The rods see black and white and the cones perceive colors. To improve ability to perceive colors, one should understand the shortcomings of shade guides, eyes, lighting conditions and surroundings. Clinical skill is certainly fundamental when selecting tooth shades. This presentation will highlight the major elements and techniques in esthetic dentistry in order to fully understand the colors and many hints and tricks to choose the best shade for a perfect cosmetic restauration.

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THE GUIDED BONE REGENERATION IN IMPLANTOLOGY AS STRATEGY FOR THE TREATMENT OF PATIENTS WITH LOCALIZED DEFECTS OF THE JAWS

Fabio Luigi Perret
University of Turin, Italy

The increase in the average age of our patients and the increasing aesthetic and functional demand, will increasingly lead the dentists to handle complex cases. The complex cases are those in which, due to the loss of compromised teeth or previously placed implants, there is a lack of hard and soft tissues, which can often preclude the possibility of giving the patient a fixed dentition. To solve these bone atrophy, and in order to place future implants, several methods have been proposed in the literature, including block grafts, osteodistraction and guided bone regeneration (GBR). The latter is probably the one that has recently met the greatest interest from dentists, thanks to its low invasiveness and flexibility. Furthermore, compared to the other techniques, the GBR allows to reconstruct the hard tissues also contextually to the implant insertion, allowing to optimize the aesthetics and the function. In my lecture, a classification of the main bone defects will be reviewed, and some step by step protocols will be proposed to solve the clinical cases in a predictable way.

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INTERVENTIONAL RADIOLOGY

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Interventional radiology or, as it is sometimes called, minimally invasive surgery has evolved from traditional diagnostic radiology over the last 20 years. Thus today many procedures can be done with image guidance that in the past required an open approach. The morbidity, risks and complications can often be reduced significantly by image-guided minimally invasive percutaneous techniques as compared to open surgical procedures. There are many examples of successful interventional radiology performed today: TIPS, in which the portal vein is connected to the hepatic vein bypassing the liver in patients with liver failure, aspiration biopsies in deep locations that were not accessible without an open approach in the past, recanalization of the fallopian tubes for infertility, and maintenance of vascular access in patients with renal disease, to mention a few. Interventional maxillofacial radiology is in its in- fancy. Only a few minimally invasive procedures have been applied to this area, but it is quite obvious that the percutaneous approach with needles is much preferred in the maxillofacial region as compared to an open procedure. In this chapter we have collected a few diagnostic and interventional procedures that have been applied to the maxillofacial and related areas. Of these procedures temporomandibular joint (TMJ) arthrography and sialography are those which most typically have been performed by maxillofacial radiologists. It is also our opinion that image-guided biopsies of soft-tissue masses or bone, being good alternatives to open surgery biopsies, should be with- in the working area of these specialists. Although orbital biopsies and embolizations are beyond their scope, we have also illustrated such procedures to show the maxillofacial radiologist what is indeed possible to safely perform.

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DIAGNOSIS, NONSURGICAL AND SURGICAL TREATMENT OF OBSTRUCTIVE SLEEP APNEA

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Sleep-disordered breathing is a hot topic in dentistry and medicine today. Dentists are in a unique position to screen for, diagnose and treat their patients with obstructive sleep apnea. OSA is a serious, potentially life-threatening condition which can result in hypertension, congestive heart failure and even death. This presentation will cover the screening, diagnosis and contemporary management of sleep-disordered breathing in a comprehensive format, both for the general restorative dentist, the orthodontist and the oral and maxillofacial surgical specialists. From the medical history and clinical examination, to radiographic and diagnostic imaging findings, to a detailed discussion of the clinical polysomnogram and sleep medicine consultation referral, to mandibular advancement oral appliance therapy and CPAP therapy, to upper airway surgery including uvulopalatopharyngoplasty (UPPP), laser-assisted uvulopalatoplasty (LAUP), nasal septoplasty, inferior turbinectomy, tonsillectomy and adenoidectomy, radiofrequency tongue and soft palate ablation, to maxillomandibular advancement and genioglossus advancement, to tongue and hyoid suspension, this presentation will provide direct and practical real life ways to improve the health and prolong the life of your patients with maximal fulfillment in return.

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REATTACHEMENT OF TRAUMATIZED TOOTH - A CASE REPORT

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Objective: The main objective of this case report is to understand how we can give immediate restoration to the traumatized tooth with the original one. Reattachment is such an ultraconservative technique which provides safe, fast, and esthetically pleasing results. This paper discusses fragment reattachment technique and presents a clinical case of complicated crown fracture.

Materials and Methods: A 20-years-old male patient was reported to the Department of Kantipur Dental College Teaching Hospital & Research Center, with the chief complaint of fractured lower anterior tooth due to fall injury. Clinical and radiographic examination revealed Elli's Class III fracture in mandibular right lateral incisor and canine with lingually aligned lateral incisor resulting in severe pain and loss of aesthetics and function. The case was treated with immediate RCT followed by post and core and reattachement of the same fractured fragment. We used protaper files and gutta percha from Dentsply for the obturation, metal post was placed from Dentsply and reattachement was done with dual cure auto mixing composite resin (ResiCem from SHOFU).

Result: We achieved immediate restoration of the traumatized tooth with natrual fragment of the fractured portion.

Conclusion: Because of larger incidence of trauma to dental tissues and to their supporting structures, it is important to have proper knowledge on clinical techniques and their indications, along with risk-benefit ratio. The reattachment of the tooth fragment is possible only when the fragment is available which can be improved with different adhesive techniques and restorative materials. The main concern and challenge is to educate the population to preserve the fractured fragment and seek immediate dental care.

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SYNTHESIS OF LIGHT CURING NANOCOMPOSITE RESINS FILLED WITH SURFACE MODIFIED TIO_2 NANOPARTICLES AND THEIR CHARACTERIZATIONS

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The aim of this study is to synthesize nanoTiO_2 fillers for use in the fabrication of experimental dental nano-composites and to evaluate their properties, including surface and mechanical properties. Modern contemporary dentistry has changed drastically in restorative solutions with introduction of resins resulting in ebbing out of silver amalgam. In the evolution of composite materials, their fillers changed fundamentally and led to introducing nano-composites. As an inorganic additive of resin composites, TiO_2 has many promising properties. TiO_2 nanoparticle-reinforced dental resin composites are found to possess improved micro hardness and flexural strength. The conjugation of bisphenol A glycidyl methacrylate (Bis-GMA) onto the surface of nanoTiO_2 contributed to improvement in miscibility between nano-filler and matrix, because the reactive C=C group of GMA participated in curing of the matrix, and hence resulted in the enhancement of mechanical properties. For improving the nanoparticle dispersion and increasing possible interactions between nanoparticles and methacrylate matrix, the surface of the nanoparticles was modified with aminopropyltriethoxysilane (APTES) silane coupling agent. The surface modification of nanoparticles was confirmed by SEM, TEM and FTIR. The functionalized nanoparticles were then inscribed in 0, 1 and 2 weight percentages into resin matrix. The tensile strength of final material was improved by more than 100% upon addition of 2 wt% of modified TiO_2 nanoparticles as compared to neat resin matrix. The composite coatings also have good resistance towards various bacterial and fungal stains as compared to unfilled material. The coatings substantially gain hydrophilic nature symbiotically with TiO_2 content suggesting its potential application as self-cleanable material. TiO_2 nanoparticles are derived from a plant extract and possess the above properties. This green synthesis of nanoparticles is done by using microwave technique instead of using conventional time consuming techniques. The flexural strength and modulus of the nano-composite resin is increased by 20- 30% as compared to the resin without nano-fillers. Enhanced mechanical properties and decreased polymerization shrinkage of nano-composite resin using TiO_2 nanoparticles has a great potential for treating tooth decay or dental carries and its prevention and thus the most available commercial product for dental restorations could be improved by the addition of nanoTiO_2.

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APPLICATION OF LASER IN PROSTHODONTICS

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Background: The introduction of laser in dentistry, in the 1960s, by Miaman, led to a continuous research in the various applications of lasers in dental practice particularly in prosthodontics. Nowadays, the use of laser in prosthodontics has replaced many conventional surgical and technical procedures and is about to replace the dental handpiece. The aim of this review is to provide a complete understanding of the fundamentals of lasers and their applications in the various disciplines of prosthodontics. Laser in dentistry become a must in dental clinic for some specific patients, and a need for the others, what can't not be solved by using the traditional treatment, laser could be a good choice to resolve it. Laser use in dentistry has expanded and improved some treatment options for clinicians who have adopted this technology

Objective: The objective of this lecture is to provide an overview on: the fundamentals of laser science; what are the common components of all lasers devices; laser wavelengths available in dentistry, and the best laser to select in prosthodontics treatment; the applications of lasers in the various branches of prosthodontics; the advantage of using laser over the traditional treatment and; clinical cases presentation.

Methodology: A recent review about the use of lasers in dentistry was conducted.

Results: Dentistry today is evolving tremendously and the use of lasers in dentistry is a double edged sword: if it is properly used, laser can be an initial and/or additional tool in our daily practice, whereas if it is misused it can lead to catastrophic results.

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DENTAL WEAR INTRODUCTION, CAUSES AND MANAGEMENT

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According to our new lifestyle we are facing more cases of dental wear than limiting them. Dental wear can be in different ways with different causes. Abrasion, abfraction, attrition and erosion are the main key elements for this research. Starting with Abrasion and comparing it to Abfraction in the term of diagnoses in symptoms and signs. This manuscript discusses an investigation of the relationship between chemical parameters of popular soft drinks and enamel erosion comparing these drinks and its acidity to tooth. The effects of tooth brushing after exposure to soft drinks are described as a function of the chemical parameters of the drink. A correlation is drawn between the amount of tissue loss caused by erosion, and the extent of the softened layer, in that drinks which cause greater erosion also causes a thicker softened layer. The impact of dental erosion on oral health is discussed. However, it can be concluded that in most cases dental erosion is best described as a condition, with the acid being of non-pathological origin and how to manage this problem what should we advise our patients and even ourselves. Concluding this by talking about bruxism as a part of the Para functional issue of tooth wear that can occur during sleep or wakefulness and is defined as a repetitive jaw-muscle activity that is manifest as clenching or grinding of the teeth, possibly including bracing or thrusting of the mandible. The clinical consequences of bruxism have been reviewed extensively. A review of the most recent literature has updated the findings on the effects of bruxism on the TMJ and jaw muscles as well as on natural teeth. Management approaches for sleep bruxism (SB) in adults were noted. So in general and in specific points of tooth wear will be the subject.

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QUICK FIX BY SOCIAL 6

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Social 6 Braces or Six Month Smiles are specially designed to straighten your front upper and/or lower anterior six teeth with short term orthodontic treatment within six months for aesthetic purposes only. These six month braces are a quick fix for those worried about what their smiles look like, however, bite, arches, root angles, and jaw alignment are not addressed. Millions of adults are unhappy, self-conscious or even embarrassed of their smile and they're just looking to improve the appearance of their smile. Some patients notice their teeth becoming increasingly crowded with age; others may have just one tooth that's always bothered them; some have even had orthodontic treatment before, only for their teeth to move after they stopped wearing their retainers. Social 6 braces can be the perfect solution to these scenarios. Conventional orthodontic treatment can take around 18 months, whereas social 6 braces can straighten teeth in a fraction of the time. This speediness doesn't mean they cut corners; they're faster because they're only focused on aligning your front teeth. Thanks to a growing demand for social 6 braces, there are now several different types to choose from. These include discreet options such as clear aligners and fixed braces with clear or tooth-coloured brackets or even lingual braces. It's ideal for straightening teeth that are mildly crowded/crooked, spacing or mild open bite too. Now, there is an effective, safe and affordable cosmetic braces solution that fits every bodies lifestyle.

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AN X-RAY MICROTOMOGRAPHY MEASUREMENT OF A NOVEL BIOACTIVE GLASS VARNISH IN PREVENTION OF WHITE SPOT LESIONS. (A COMPARATIVE ACID CHALLENGE STUDY)

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Background: White spot lesion (WSL) represents the early manifestation of the dental caries and can be treated by a non-invasive management. The white spot lesion is still the most complicated dilemma facing orthodontists during orthodontic treatment using fixed appliances. Light cured bioactive glass varnishes releasing calcium, phosphate, strontium and fluoride for controlled remineralisation exhibit promise for prevention of WSL.

Objectives: To evaluate *in vitro* the effectiveness of application of novel BAG varnish in the protection of enamel surfaces against acid challenge.

Materials and Methods: A total of 6 enamel blocks were selected and distributed randomly into two groups (n = 3). Group A: Clinpro™ white varnish (3M ESPE TM) was used to coat the enamel surface and group B: light cured BAG varnish which consists of BAG (35% SiO_2, 45% $CaCO_3$, 7.5% Na_2CO_3, 6% P_2O_5, 6% SrF_2) mixed with resin (70/30 UDMA/HEMA, 0.6% EDMAB, 0.3% CQ, and 1% 4META) with glass: resin ratio of 60:40 was used. The enamel blocks were covered with two layers of acid-resistant nail varnish except the exposed enamel surface. Each three enamel blocks were mounted vertically in small plastic tubes and scanned by XMT before and after immersion in 10ml artificial saliva demineralising buffer (pH = 4) over two time periods 24 hours and 96 hours at 37ºC.

Result: The evaluation of XMT slices demonstrated the ability of the BAG varnish to prevent the development of WSL after immersion in AS pH4 for 24 hours and 96 hours. The line profiles have confirmed the protective efficacy of BAG varnish in reducing the acid demineralisation.

Conclusions: This ex-vivo acid challenge study illustrates that the novel BAG varnishes can be used effectively to prevent the WSL and protect the teeth from low pH environment in oral cavity. Hence, the novel BAG varnish has the potential to prevent demineralisation and caries.

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