Friday, September 12, 2014

FREE COMMUNICATION SESSIONS 05–08

Free Communication Session 5 – Theme: General Dentistry and Oral Health

Room F01 | 2014-09-12 | 9:30–10:30

FC102

Radiation Exposure and Risk of Meningioma: A Meta-Analysis

Mel Mupparapu, Sahil K. Kumar
University of Pennsylvania School of Dental Medicine

Aim and purpose: The purpose of this study is to determine the risk of developing meningiomas after exposure to dental ionizing radiation.
Materials and method: A literature search was conducted using Medline, Ovid Medline, PubMed Plus among other databases. Included initially are case–control studies, cohort studies, and systematic reviews, but systematic reviews were not eligible for data extraction. Two systematic reviews and two studies with incompatible statistics were excluded, leaving four studies.
Result: Overall, 8553 Meningioma cases and 9997 controls were collected from the studies. Basic odds ratios (OR) and 95% CI were recalculated in each study to reduce variation. Forest plots were created using the Review Manager (RevMan) v5.2 software (Cochrane Collaboration, 2012). The OR (95% CI) for each study was micro-analyzed and a weighted OR (95% CI) of 1.03 (0.95–1.11) was derived.
Summary and conclusion: Studies in the recent past looked at the association between ionizing radiation and the development of various brain cancers. Particular attention has been paid to Meningioma, where researchers found a positive association. However, this association has never been validated with a meta-analysis of pooled studies. In this meta-analysis, no association was found between ionizing radiation and development of meningiomas. The data was weighted very highly for two of the subgroups due to larger numbers and types of events. Regardless of the weight age, all but one subgroup displayed no significant association, further strengthening this conclusion.

FC103

Haptic Dentistry – Exploring the Potential of Future Learning

Divya Jhaver
Sri Sai College of Dental Surgery, Vikarabad, Andhra Pradesh, India

Aim and purpose: Conventional treatment modality and techniques are being replaced by the recent ones. Here we describe about efforts towards creation of the Virtual Dental Patient (VDP) and its use in virtual tooth drilling system whose aim is to aid dental students in getting acquainted with the handling of drilling instruments.
Materials and method: This technology uses a 3D phase and oral cavity model constructed using human anatomical data. VDP can be animated and adapted to the characteristics of a specific patient. 50 students and staffs are given hand out and questionnaire related to haptics and VDP and their opinion is recorded and analyzed.
Result: Majority of the participants understood the technology and its application and supported its usage in modern dental training (details to be discussed during the presentation)
Summary and conclusion: The application is a very promising educational and research tool that allows the user to practice in a realistic manner the virtual tooth drilling for endodontic treatment cavity preparation and related tasks.

FC104

Assessment of Clinical Anxiety Among Third and Fourth Year Dental Students in Bangalore, Karnataka – A Cross Sectional Study

Vemala Anusha
Vydehi Institute of Dental Sciences and Research Bangalore, India

Aim and purpose: Anxiety is an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure. Anxiety in dental clinical setting may have an adverse effect on the performance of the students. Hence the present cross sectional study was undertaken to determine the clinical anxiety.
Materials and method: The present cross sectional study was conducted among 500 third and fourth year dental students in four dental colleges of Bangalore selected by simple random sampling using the 38 items, modified Moss and McManus questionnaire rated by 4 point Likert scale, addressing 6 domains (Academic related situations, Communication and health team interaction, Investigations related situations, Diagnosis related situations, Act of treatment related situations, Desciencies and error in treatment related situations). Items were considered to be perceived as anxious, when students classified them as slightly anxious, fairly anxious, very anxious. Statistical analysis was performed by chi square test.
Result: Of the 500 students 250 were from third year and 250 were from fourth year. Study population consisted of 233 males (47%), and 267 females (53%). The total mean anxiety score was 66. Among third year students, the top clinical anxiety provoking situations were coping with unco-operative patient and accidental pulp exposure (78.6), treating psychiatric patient (78.3), iatrogenic gingival trauma (78), failure in exams (77.6). Whereas among fourth year students treating psychiatric patient (78.3), failure in exams (78), not able to defend diagnosis (76.6), iatrogenic gingival

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trauma (76.3), getting diagnosis wrong (76) were the top clinical anxiety provoking situations.
Summary and conclusion: The overall findings of this study showed that dental students of Bangalore perceived significant increase in clinical anxiety. Increasing the supportive learning environment.

FC105
The Proliferative Activity of Oral Mucosa in Fibrotic Liver Animal After Scalpel and Laser Surgery
Amany Nemat
National Research Center, Cairo, Egypt

Aim and purpose: Assessment of the proliferative activity of oral mucosal tissues in fibrotic liver animal model after scalpel and laser surgery.
Materials and method: Liver fibrosis was induced experimentally in 100 male rats by intra-peritoneal injections of Paracetamol drug in a repetitive weekly toxic dose of 1000 mg/kg body wt. for a 12 weeks course. The development of liver fibrosis that resemble the human disease was observed histologically. Then rats were divided equally into scalpel and laser groups. 2 mm wound incision was made in the oral lower labial vestibule using traditional scalpel and CO_2 laser beam. Ten rats of each group were sacrificed at 0, 3, 7, 10 and 14 days after surgery. Biopsies were collected from the liver and site of surgery in all animals.
Result: Histopathologically, immediately after scalpel use aggregation of neutophils without fibrin deposition occurred as compared to the mucosal ulcerations with degenerative necrosis following laser application. Immunohistochemistry results revealed that immediately following both scalpel and laser showed −ve fibronectin immuno stain in most of the biopsies in epithelial and submucosal tissues. Both the histological and the immunohistochemical results changed over the different time periods of the study.
Summary and conclusion: Healing process was a little more intense and rapid following scalpel than laser surgery in fibrotic liver animals.

Room F02 | 2014-09-12 | 9:30–10:30

FC106
Perception of Patient About Oral Cancer Screening in Dental Practices
Bhuvnesh Airen, Pralhad Dasar, N. Sandesh
Sri Aurobindo College of Dental Science, Indore, India

Aim and purpose: To assess patient's perception about oral cancer screening in routine dental visit.
Materials and method: A questionnaire survey was carried out on patients visiting private dental practitioners. Sample consisted of 380 subjects above 18 year of age who visit private dental practitioners with any oral health problem. Convenient sampling methodology was employed to select the study subjects. Subjects were selected randomly from the OPD of the private dental clinics and asked to complete a self administered questionnaire. Response rate of patients in private dental clinic was 85%. The questionnaire consisted of close ended questions on previous dental visit, awareness of oral cancer, experience of screening of oral cancer by dentist, early detection of oral cancer, satisfaction of screening done by dentist and about self examination for oral cancer.
Result: Forty percent of patient had never heard about oral cancer. Majority of patients (80%) reported that early screening of oral cancer is beneficial in treatment. Significant difference was observed for perception about oral cancer screening with varying level of education ($p = 0.00$) and occupation levels ($p = 0.00$). There was no significant difference observed among genders in relation to perception for oral cancer screening.
Summary and conclusion: Although most patients were favorable for oral cancer screening, the awareness about oral cancer screening by dental professional as a routine procedure was comparatively low. There is a need of education for self oral cancer screening for patients.

FC107
Child Abuse-Can You See the Fear in Their Eyes?
M. R. Pooja
A B Shetty Memorial Institute of Dental Sciences

Aim and purpose: Child abuse and neglect affect millions of children every year. Dentists have a significant role to identify and intervene in abuse, violence and neglect of the vulnerable. Dental professionals should be aware of the warning signs of child abuse and dental neglect.
Materials and method: In 2007 the Ministry of Women and Child Development reported the incidence of child abuse nationwide. It stated that children in India are undergoing all types of abused which include physical, emotional and sexual.
Result: Over 75% of abuse victims have injuries to head, face, mouth and neck regions. It has very clearly emerged that across different kinds of abuse, it is young children, in the 5–12 year group, who are most at risk of abuse and exploitation. Two out of every three children were physically abused. 53.22% children reported having faced one or more forms of sexual abuse. Every second child reported facing emotional abuse. Equal percentage of both girls and boys reported facing emotional abuse.
Summary and conclusion: This paper reviews oral and dental aspects of child abuse and dental neglect which help the dental surgeon in the detection and dental management of such cases and if required he should also transfer the abused child to the physician for further evaluation and treatment.

FC108
Management of Dental Injuries by South Indian Medical Professionals
Devaki Talluri, Narayana Rao Vinnakota, Srinivas Pachava, Srinivas Ravoori, Suresh Sanikommu, Vikram Simha
Sibar Dental College, Guntur

Aim and purpose: Dento-alveolar fractures, long-term prognosis greatly depend on appropriate early management. Poor treatment outcomes as a result of inadequate or delayed management can be damaging to a patient due to dental aesthetic and functional defects which may also have a psychological impact. The aim of the study was to know the medical professional knowledge in management of dental injuries and appropriate on ward referrals.

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Materials and method: A cross sectional survey using a pre-tested questionnaire given to all the medical professionals who dealt with accident cases was conducted in randomly selected eight hospitals of south Indian district, Guntur. Study was done over a period of consecutive 3-months from December 2013 to February 2014. Prior to the distribution of questionnaires, permission was obtained from the directors of the all eight hospitals. Data was analyzed by using SPSS 20 version. The international associations of dental traumatology guidelines (IADT) were taken for assessment.
Result: Out of 150 questionnaires given 116 were responded, with a response rate of 77%. Training regarding dental injuries received was 69 (59.5%). The response for avulsed tooth for immediate re-implant was 75 (64.7%). With respect to the qualification MS doctors 15 (100%), MD 40 (67.8%), and MBBS 20 (47.6%) advised re-implantation
Summary and conclusion: The results from this study suggest that knowledge of the management of dental injuries among medical professional was inadequate. However appropriate training can significantly increase their knowledge.

FC109
Ethical Conventionalism Among Dental Practitioners in India
Vamsee Raju
Bangalore Institute of Dental Sciences

Aim and purpose: To assess the Ethical Conventionalism among Dental practitioners in Bangalore, India.
Materials and method: A Descriptive Cross Sectional study was conducted among 258 practicing dentists attached to various dental colleges in Bangalore city. The study tool consisted of a closed ended questionnaire with four sections regarding professional background, ethical knowledge, practice of informed consent and opinions on advertising respectively.
Result: Among all the Knowledge related questions, most of them agreed that Professional Confidentiality is an important part of dental practice. When it came to practice of Informed Consent, most of them responded saying that they take consent from every patient. And lastly, though the Dental Council of India had laid down few guidelines to control advertising, most of the practitioners felt that advertising is necessary in some or the other form to make it beneficial to both patient and practitioner.
Summary and conclusion: Ethics is an important part of any profession. In the above research, statistically significant increase in practice of ethical principles was observed with an increase in knowledge about the same. This implies that; if awareness of Ethical Principles is augmented, then the practice of Ethics in the field of Dentistry can also be expected to improve.

Room F03 | 2014-09-12 | 19:30–10:30

FC110
Child Behaviour Management in Dental Practice – A Pilot Survey
Jitesh Vijay Pimpale
Terna Dental College and Hospital

Aim and purpose: The purpose of this study was to evaluate exposure to several categories of behavioural management techniques and determine the extent of general practitioners and other specialist, in the use of various behavioural management techniques.
Materials and method: A manual questionnaire was formulated in English. The General Dentist and Speciality Dentist was contacted in Navi Mumbai area and asked to fill the questionnaire. The filled questionnaire was collected and subjected to statistical analysis.
Result: The data collected from this survey shows that, 50% dentist of MDS group prefer to pre-medicate the child before appointment as compared to BDS group.45.9% of dentist belonging to BDS group learned from textbooks, also most of the dentist from both groups learned from personal experience. Upto 40% of the dentist from both categories do Paediatric dental treatment.
Summary and conclusion: From this survey I would like to conclude that, though most of dentist do Paediatric dental treatment more emphasis should be directed towards Behavioural Management Techniques.

FC111
Knowledge, Attitude, Practices of Needle Stick Injuries Among Dental Students
Srinivas Ravoori, Devaki Talluri, Narayana Rao Vinakota, Srinivas Pachava, Suresh Sanikommu, Vikram Simha
Sibar Dental College Guntur

Aim and purpose: Needle stick injuries (NSI) among dental students significantly increase the risk of transmission of different blood borne infections, which can lead to serious consequences during their clinical activities. The aim of the study was to assess the degree of knowledge; attitude and practices towards Needle stick injuries among dental students in one of the south Indian district.
Materials and method: Across sectional, study using structured and pre tested questionnaire was conducted among 218 dental college students in the month of January 2014 in one of the south Indian district. Sample included students of 3rd and 4th years and Interns. The data was analyzed using SPSS software, version 20 and categorical variables were analysed using chi-square test at 5% level of significance.
Result: Out of 218 participants only 196 [male (70) and female (126)] responded to the questionnaire. Among them, 50 (25.5%) were 3rd year students, 68 (34.7%) were 4th year students and 78 (39.8%) were Interns. 87 (44.4%) students were exposed to needle stick injuries. 96 (49%) students felt that careless attitude would be most common reason for needle stick injury. 72 (36.7%) students said that the most common occurrence was during giving injection to patients. Only 133 (67.9%) were vaccinated against Hepatitis B (HBV). Majority said that they have not received sharp management training.
Summary and conclusion: Despite knowing the risks, frequency of needle stick injury was observed among participants reflecting bad practice and careless attitude towards work.

FC112
Inhale and Be No Afraid
Ooha Reddy Eleti
Sri Sai College of Dental Surgery, Vikarabad, Andhra Pradesh, India

Aim and purpose: My paper says about Inhalation conscious sedation. Pain and fear are prohibiting factors for dental

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treatment; more than 40% of the population avoids the dental office for these reasons. N_2O/O_2 sedation offers a way to overcome these barriers.
Materials and method: Analgesics, sedatives and anesthetics have been sought for centuries for pain control during surgical procedures and to relieve pain. Modern general anesthesia and conscious sedation procedures are predictable, effective, and safe with good patient selection and the use of appropriate drugs and techniques. Of the three anesthetic/sedation agents first introduced-N_2O, ether, and chloroform-N_2O is the most commonly used inhalation anesthetic in dentistry and has withstood the test of time with an excellent safety record
Result: The main indication for N_2O/O_2 sedation is to reduce pain, anxiety and memory of the treatment experienced in patients including those who are phobic and unreceptive to other techniques. It has rapid onset and recovery. The patient is permitted to leave the dental office unescorted and resume normal activities immediately. It is safe and efficacious; and aids the provision of care of clinicians. A recent study documents that N_2O/O_2 sedation works well to depress hypersensitive gag reflex, which is problematic during dental procedure.
Summary and conclusion: In order to deliver fear-free, high quality dental treatment and ultimately aiming at developing a positive attitude towards dental health, conscious sedation is going to be in great demand in near future.

FC113
Teaching Dental Ethics: Shouldn't It Be Practical?
Bhanu Kiran, Devaki Talluri, Narayana Vinnakota, Srinivas Pachava, Suresh Sanikommu, Vikram Bommireddy
Sibar Dental College, Guntur

Aim and purpose: Although countries differ a lot in the financing of dental care, delivery of dental care is predominantly provided in dental clinics that are independent business entities. Dental profession holds a special position of trust within the society. The core of every health profession is service above self. Every dentist should act in a manner which will enhance the prestige and reputation of the profession. Dentist, similar to any other health care provider, will come across ethical difficulties right through their practice careers, so dental schools should promote experimental learning and reflection on these issues during pre-doctoral education.
Result: Dentists when they start practicing fail to apply theories learned during formal education to the complexities of the workplace environment, unless ethics is taught practically. Is our curriculum already too crowded and there is no room for teaching ethics practically. Is it ethical to expect the students to practice ethically without teaching those ethics practically. The idea behind this review article is to focus on the way, the ethics are taught in dental schools.
Summary and conclusion: The caring behavior of previous generations of dentists, and their dedication to ethical conduct, has earned the profession the trust and confidence of society. If this professional relationship is to be continued, each new generation of dentists must come to understand the nature of a profession, and the ethical obligations incurred in becoming a member of the profession of dentistry.

Room F04 | 2014-09-12 | 9:30–10:30

FC114
Level of Knowledge of Medical Emergencies of the Dentistry's Students of Universidad Nacional Pedro Henríquez Ureña
Nasin Golzadeh
Universidad Nacional Pedro Henriquez Ureña, UNPHU

Aim and purpose: All dental office staff should be trained to treat a dental-medical emergency for which previous preparation is needed.
The main objective of this study was to determine the level of knowledge in medical emergencies of dental students from Target Hospital in the period of June–July 2013.
Materials and method: For this study, a prospective investigation and cross-sectional surveys were performed where 102 students from different dental clinics levels of target hospital were evaluated on how to deal with medical emergencies in dental practice.
Result: As a result and conclusion of this investigation it was stated that in general terms the students don't have the necessary knowledge to solve an emergency, neither the knowledge about the protocols needed to solve them. In addition, these results refer that the most common emergencies in a dental practice include bleeding, seizures and/or hypertension, and loss of consciousness. Another of the conclusions is that students despite not being able to cope with a medical-dental emergency, they have theoretical knowledge in the management of patients with seizures, asthma and cardiovascular disease.
Summary and conclusion: The Final conclusion is that students of dental clinics V, VI and VII do have the knowledge of diagnostic equipment for the prevention of medical conditions, while dental students of dental clinics I, II, and III do not.

FC115
Dental Photo Fakery: A Study and Review
Aman Chowdhry, Deepika Bablani Popli, Keya Sircar, Vatchala Rani
Affiliation missing

Aim and purpose: Digitalization of dental records makes its manipulation very simple. Several such manipulations, however, correspond to inappropriate changes to original data, and can be termed as scientific delinquency. Digital image modifications are done at a pixel level, making them to a large extent undetectable.
To manipulate digital images of patients data in order to highlight tampering techniques and discuss methods of detecting and preventing misuse of digital images.
Materials and method: Digital image records of patient data (radiograph of molar, clinical photograph anterior teeth and patient cast) were manipulated using freely available software.
The camera used was Samsung Techwin L77 digital camera and Software's applied were Adobe Photoshop® (Adobe Systems Inc,

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San Jose, CA, USA), Corel Draw® (Corel Corporation, Ottawa, ON, Canada) and Picasa 3.9.1.535 version.
Result: It was quite evident that ostentatious digital images can be created either by merging two or more digital images or altering an existing image.
Summary and conclusion: Altered digital dental records can be used for fraudulent purposes in dental practice and research work. Tools are available to spot such digital frauds which are extremely hard to assess visually. Preventative measures such as attaching metadata and water marking of digital images should be done in order to avert their malicious reuse. Also computer alertness, especially about imaging software's should be promoted amongst dental professionals.

FC116
Salivomics – An Emerging Technology
Poornima Govindraj
Rajarajeswari Dental College & Hospital, Bangalore

Aim and purpose: The field of salivary diagnostics is a broad, complex and cross cutting area of scientific research with enormous potential to leave an impact on the oral health care. The aim of this paper is to review the literature will attempt to raise new ideas and also point to under researched areas that may hold promise for future applicability of saliva in oral diagnostics and prediction of oral disease.
Materials and method: Literature was selected through a search of PubMed, Google Scholar. The keywords used for search were salivomics, salivary biomarkers, saliva, genomics, and oral cancer. The search was restricted to English language articles published from 1990 to march 2014. Additionally, a manual search in the major text books was performed.
Result: In total, 47 literature sources were obtained and reviewed. Saliva has been the most efficient diagnostic tool since ages, its progress from being a lie detector in the times of the ancient Greeks to the present evolution into a master tool in the much talked about metabolomics. In addition to its oral indications, the analysis of saliva also provides important information about the functioning of various organs within the body.
Summary and conclusion: With expanded research and improved technologies, the avenue of salivary diagnostics is incorporating transcriptomic, proteomic and metabolomic findings which will help to detect systemic disease, monitor therapies, therapeutic outcomes and finally disease progression. With this dentistry can advance into the realm of primary healthcare with integration of chair side screening for medical conditions.

FC117
Oral Health Delivery System in India -Current Scenario
Rahul
Yenepoya Dental College

Aim and purpose: Dentistry is one of the booming sectors in education as well as in service. Almost 30,000 dentists pass out every year. But how effective are they in providing oral health for the public so it's important for us to assess the ability of dental work force in India, so that adequate and efficient dental care are provided for the growing population.
Materials and method: Growing population, decreasing affordability, increasing treatment cost etc definitely make dentistry unreachable to majority of Indians, but increased penetration, increased patient awareness; unconventional thinking by healthcare providers for better operation, government opening its arm to public private partnership is the key factors to look out for better future of public oral health.
Result: Existing oral health care in India is delivered mainly by government organizations like government dental colleges, district hospitals with dental unit, community health centers etc. There are non governmental organizations like private dental colleges, corporate hospitals with dental units etc. in private sector we have private dental practitioners, private dental hospitals etc. some unit of the population also prefer ayurveda, sidda, unani etc.
Summary and conclusion: This calls for proper strategy and planning which not only maintains a workforce, who are highly skilled but also to spread their service to those who are in dire need. Most of them are agglomerating in the metros and cities that still remain lop sided distribution.

Room F05 | 2014-09-12 | 9:30–10:30

FC118
Clinical Applications of Diode Laser in Dentistry: Review and Case Presentations
Ankita Choursiya
Rishiraj College of Dental Sciences & Research Centre, Bhopal, India

Aim and purpose: The purpose of this paper is to review the science behind diode lasers; their versatility in dentistry; their advantages, disadvantages; and personal experience with diode lasers through various clinical cases discussed.
Materials and method: Diode laser of wavelength 980 nm was used to treat all the cases in the maxillofacial region for e.g. Gingival depigmentation, pocket reduction therapy, apicectomy, crown lengthening, operculectomy, mucocele excision, biostimulation and some more ablative as well as low level laser therapy cases. Most of the cases were given topical anesthesia, only a few required local infiltration of an anesthetic agent. A single operator performed all the cases.
Result: Intraoperatively, there was minimal pain and bleeding. Post-operative healing was good, with minimal or no discomfort/swelling/fibrosis. Most of the ablated wounds healed in 7–12 days.
Summary and conclusion: There are a lot of options of lasers available based upon their wavelengths, which in turn decide the particular use of each laser. Commonly used lasers in dentistry and oral surgery include carbon-dioxide laser, Nd-YAG, diode and Er-YAG. Diodes have laboratory as well as clinical uses in the dental field. Moreover, diode lasers work efficiently for ablation as well as low level laser therapy, thus broadening the horizon of their use. All dental specialities, be it oral surgery, periodontics, pedodontics, endodontics or orthodontics, have a valid reason to use diode lasers.

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FC119

KAP Study of Oral Health Awareness

Rujuta Palsule, Dheeraj Kalra, Vikram Garcha
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Aim and purpose: Topic-Assessment of oral hygiene awareness among engineering students of 17–25 years of age group of Kusgaon, Lonavala-A KAP Study Aim-Assessment of oral hygiene awareness among engineering students of 17–25 years of age group of Kusgaon, Lonavala.

Objectives:

(1) To assesses the level of awareness about oral health care among young population.

(2) Evaluation of knowledge about dental caries, periodontal problems and causative agents as well as their attitude towards importance of oral health care.

(3) Tooth brushing materials, techniques, methods, frequency of brushing etc practiced by the students.

Materials and method:

(1) A questionnaire based survey was conducted among the engineering students of Kusgaon, Lonavala who visited dental wing of Rural Dental Centre.

(2) Age group of students-17–25 years

(3) Sample size-100 engineering students studying in Sinhgad Institute, Kusgaon, Lonavala

(4) Duration of study-From 1st January 2014 to 31st March 2014

(5) A result of the data collected is presented in the form of tables, graphs and charts.

Result:

(1) 90% students know that habits like tobacco chewing, smoking cause cancer.

(2) 61% students visit dentists only when they have a problem. 15% visit every 6 months.

(3) 98% use toothbrush as a cleaning aid.

Summary and conclusion: Overall awareness level of students regarding importance of oral health care was good.

FC120

Evaluation of pH, Titratable Acidity and Calcium Concentration of Different Carbonated Beverages on Erosion of Enamel

Praveen Jain
Peoples College of Dental Sciences and Research Center, Bhopal, India

Aim and purpose: Beverage acidity has been measured routinely using the pH value. However, titratable acidity is thought to be a true indicator of beverage erosive potential. It has also been reported that experimental addition of calcium in beverages can reduce the progression of erosion. This study was carried out to evaluate pH, titratable acidity and calcium concentration of different carbonated beverages on erosion of enamel in extracted human premolar teeth.

Materials and method: The erosive potential of 13 carbonated beverages and control was characterized based on analysis of pH, titratable acidity, and calcium concentrations. This was followed by enamel demineralization tests. Baseline and post-immersion measurements of enamel microhardness were carried out using Vickers microhardness tester. Mean and standard deviation for each parameter was calculated. One way analysis of variance (ANOVA), paired *t*-test, pearson's correlation, and multiple linear stepwise regression analysis were employed for statistical analysis. p-values < 0.05 were considered statistically significant.

Result: Among the beverages, Pepsi had the lowest pH while Sip-on-appy had the highest pH. Titratable acidity was lowest for Limca and highest for Red Bull. Calcium concentration was lowest in Limca and Sprite and highest in Appy fizz. Statistically significant negative correlation between pH and percentage reduction of enamel microhardness, and between calcium concentration and percentage reduction of enamel microhardness was found. Multiple linear stepwise regression analysis revealed pH as the best predictor for erosive potential.

Summary and conclusion: All beverages have potential for enamel erosion. Beverages with lower pH and less calcium are more erosive.

FC121

Thermography's Role in Patients With Temporomandibular Disorders

Mariana Dimova
Department of Prosthetic Dentistry, Faculty of Dental Medicine, Medical University Sofia, Bulgaria

Aim and purpose: To examine the uses of extraoral, contact less thermo diagnostics as a part of the diagnostic protocol for patients with Temporomandibular disorders (TMD).

Materials and method: The present study is based on 68 patients (42 women and 26 men) aged 42.9 ± 13.7 years, divided into two groups: main group constituting 34 patients with TMD (22 women and 12 men, at 40.1 ± 13.6 years of age) and control group comprising 34 patients (20 women and 14 men, at 45.7 ± 13.5 years of age). Thermo-visual diagnostics (TV-0ZK Nizhny Novgorod, Russia) was carried out twice at an interval of 20 days. Over that period of time only the patients with TMD received preprosthetic preparation of the masticatory system.

Result: The analysis of thermal images from both tests in the control group indicated a high degree of thermal symmetry with the facial median line (for 88.2% of patient's thermographic images of the left and right side of the face appeared symmetric). Thermal images from patients of the main group in the first test revealed a significant percentage (91.4%) of high thermal intensities above the pathological threshold. In the second test, however, the positive thermographic findings decreased significantly in number, area and intensity.

Summary and conclusion: The results obtained demonstrate the benefit of infrared thermography for the visualization of basic structures of the masticatory system with regard to norm and pathology. This method provides a clear image, documentary and diagnostic aid making it an indispensable part of the diagnosis for patients with TMD.

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Room F10 | 2014-09-12 | 9:30–10:30

FC122

Antioxidant Status in Patients With Recurrent Aphthous Stomatitis

Sudhanshu Saxena[1], Sonia Tiwari[2]
[1]*Hitkarini Dental College and Hospital, Jabalpur, Madhya Pradesh, India,* [2]*Affiliation missing*

Aim and purpose: To evaluate and compare antioxidant levels in plasma and saliva of patients with recurrent Aphthous Stomatitis and healthy individuals.
Materials and method: Sixty patients with recurrent Aphthous Stomatitis and 60 healthy individuals as controls were included in this present study. Antioxidants namely superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GSHPx) activities and uric acid (UA) levels were measured in plasma and saliva. Chi-square and Students *t*-test was used for data analysis. p-value < 0.05 was considered statistically significant.
Result: Plasma analysis showed significantly decreased SOD and CAT activities and UA level in recurrent Aphthous Stomatitis patients compared to healthy control group. Plasma GSHPx activity was significantly higher in recurrent Aphthous Stomatitis patients. Reverse results were detected in salivary analysis.
Summary and conclusion: Plasma and saliva antioxidant system is affected in recurrent Aphthous Stomatitis patients and both may be considered as indicators of antioxidant status of human subjects.

FC123

Oral Health Disparities Among the Privileged and the Underprivileged Tribes of India – A Study on Periodontal Disease Prevalence

Shanavas Palliyal
Dm Wayanad Institute of Medical Sciences

Aim and purpose: The tribal populations throughout India have remained socially and culturally alienated from mainstream Indian society until developmental and conservation activities in tribal areas forced interactions between them. Even though major developments with regard to tribal welfare have gradually led to appreciable improvements in general health status of the tribes, the case of oral health remains far neglected especially among underprivileged tribal populations. The aim of this study was to explore oral health disparities among the underprivileged Paniya and the privileged Kurichiya tribes of India from the periodontal health perspective.
Materials and method: A cross sectional survey was done among 600 Kurichiya and 400 Paniya tribal populations of Wayanad District, India from January 2013 to June 2013 after approval from the Institutional ethical committee. A pre-tested structured questionnaire was used to collect data regarding study variables. Community Periodontal Index (CPI) was used to record the periodontal status of the study population after obtaining informed consent.
Result: In this study periodontal disease was found to be far more prevalent among the under privileged Paniyas than among the privileged Kurichiyas ($p < 0.0001$). The prevalence of severe periodontitis was found to be 42% amongst the Paniyas. This was much higher than the 27% found among the Kurichiyas, and the national average of 25%. Among the Paniyas a statistically significant relationship was observed between periodontitis and poor access to oral health care ($p < 0.001$).
Summary and conclusion: The present study demonstrates gross disparities in periodontal health status among the privileged and the underprivileged tribes of India and the need for active health interventions to eliminate such disparities.

FC124

Aim of the Study Was to Review the Relationship Between the Dental Occlusion and the General Body Posture

Aditya Mishra
Peoples College of Dental Sciences and Research Center, Bhopal, India

Aim and purpose: The aim of the study was to review the relationship between the dental occlusion and the general body posture.
Materials and method: Authors investigated the effects of different jaws relations on body posture in a sample of 95 subjects. All subjects underwent a posturometric and stabilometric analysis using a computerized footboard. Tests were performed in three Mandibular positions: centric occlusion, rest position and myocentric position, respectively determined by teeth engagement, joints position, and muscles contraction. All subjects showed variations of body posture in the different Mandibular positions. Statistical analysis (analysis of variance for repeated measures) confirmed that postural variations in different jaws relations were significant: in particular, the SKN multiple comparison test showed that myocentric position improved postural balance on frontal plane with respect to the other jaw positions considered.
Result: The results seem to support the observation that different jaws relations imply differences in body posture. In fact, there was a strong relation between Mandibular position and body posture: 91 out of 95 (95.8%) subjects showed variations in load distribution closing mouth either in centric occlusion or in centric relation or in myocentric position.
Summary and conclusion: The biological as well as mechanical relationship between the head, cervical spine and body posture is of very clinical significance. Postural disturbances have been observed in 90% of the patients with any type of malocclusions.

FC125

Evaluation of Smear Layer Removal After Activation of Irrigant-SEM Observation

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Aim and purpose: To evaluate smear layer removal after activation of irrigant. To compare and observe the smear layer removal from coronal, middle and apical third of root canal.
Materials and method: 50 single rooted freshly extracted human teeth were selected. Access opening was done followed by

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chemicomechanical preparation upto F3 (denstply) protaper. All the samples were irrigated with 2 ml of 5.25% sodium hypochlorite between each instrumentation. All these samples were further divided into following groups based on activation of 17% liquid EDTA using various activation methods:

Group I: – Control group and activation with master cone.
Group II: – ND: YAG activation.
Group III: – Er. YAG activation –, Photon Induced Photo Acoustic Streaming
Group IV: – Er: YAG activation –X-Pulse.
Group V: – Ultrasonic activation, using irrisafe No. 20 file

All the specimens were sectioned longitudinally using chisel and mallet and were evaluated under scanning electron microscope.

Result: EDTA activated laser groups showed better smear layer removal. EDTA activated by ER: YAG laser using PIPS and X-PULSE showed smear layer removal in all the three regions. i.e. coronal, middle and apical third.

Summary and conclusion: Within the limitations of the study, i.e. Photon Induced Photo-Acoustic Streaming and X-PULSE showed better smear layer removal in coronal, middle and apical third region with 17% EDTA activation while Hand activation by master cone, Nd:YAG laser and Ultrasonic was poor in apical third.

Room F11 | 2014-09-12 | 9:30–9:40

FC126

Three Rooted Maxillary Second Premolar: A Research Anatomical Variation

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Aim and purpose: Premolars are the tooth group with the largest variation in tooth root number and form among extant and extinct primates. Although maxillary second premolars show a considerable variation in root morphology but the presence of three roots is rare. A thorough understanding of root canal anatomy and morphology is required for achieving high levels of success in endodontic treatment. The possible anatomic configurations of premolars are well documented in the literature, except for the small incidence of multi-rooted maxillary premolars with three canals. To report a rare case of morphological root aberrations in maxillary second premolar in a female patient.

Materials and method: A 36 years old female patient was evaluated for painful maxillary left IInd premolars. Physical examination revealed no alteration or apparent mental retardation. Periapical X-rays revealed multiple roots and canals in maxillary IInd premolars. This article reports and discusses the treatment recommendations for an unusual occurrence of three canals in the second maxillary premolar in the same patient drawing particular attention to radiographic interpretation and access management.

Result: Maxillary second premolars with three roots were diagnosed after radiographic and spiral ct scanning reports.

Summary and conclusion: Findings emphasize the importance of radiographic assessment for diagnosing multiple roots which might present unusual characteristics such as multiple and bilateral appearance.

Free Communication Session 6 – Preventive Dentistry

Room F01 | 2014-09-12 | 11:30–12:15

FC127

Knowledge and Attitude Regarding Hepatitis-B Infection, Vaccine Among Hospital Patients

Bilal Akber
Yenepoya Dental College

Aim and purpose: Hepatitis-B is a potentially life-threatening infection caused by the hepatitis-B virus. It is the most serious type of viral hepatitis. About 400 million people have the virus, with most of these people living in Asia. Clearly, this is a significant public health and medical problem. With this background, the study was conducted to evaluate knowledge and attitude regarding Hepatitis B virus (HBV) infection and its vaccine among the patients attending tertiary care hospital.

Materials and method: A Cross-sectional study was done among 428 patients attending a tertiary care hospital from December 2013 to April 2014 after approval from the institutional ethical committee. A pretested structured questionnaire was used to measure the participant's knowledge and attitude regarding Hepatitis B virus (HBV) infection and its vaccine after obtaining informed consent.

Summary and conclusion: Knowledge of Hepatitis B disease and vaccine was low and misconceptions were common. About One third of the populations are vaccinated for hepatitis-B. Emphasis should especially be laid on awareness campaigns to educate the public that hepatitis-B is vaccine preventable disease. Knowledge of the hepatitis-B disease may be useful in determining health care interventions strengthening community-based care for patients.

FC128

OHQoL of Special Group of Men in Pune, India

Shrikanth Muralidharan, Arun Kumar
Navodaya Dental College and Hospital

Aim and purpose: To assess the oral health status, treatment needs and the oral health related quality of life (OHQoL) of men having sex with men in Pune, India.

Materials and method: A pilot study was carried out among 30 random men having sex with men in Pune-Maharashtra, India. Based upon the findings of the pilot study, the final sample size was decided to be 340. Type III clinical examination was carried out. All those who voluntarily agreed for the study, were included and a written consent was obtained from all the participants. The World Health Organization, Oral Health Assessment form 1997, was used to assess the oral health status and the treatment needs of these participants. The oral health related quality of life of these men was recorded according to the 14 point questionnaire (modified oral health related quality of life questionnaire).

Summary and conclusion: The study is the first of its kind to concentrate upon this special group of men in India. The data will help to formulate a comprehensive treatment plan for the community for helping them to achieve an optimum oral health.

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FC129

Knowledge, Attitude and Practice Regarding Evidence Based Practice Among Dentists in Davangere City, Karnataka- A Cross-Sectional Questionnaire Based Study

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Aim and purpose: Evidence-based practice (EBP) is a widely accepted term in the medical fields around the world. EBP means integrating individual clinical expertise with the best available external clinical evidence from systematic research, thus integrating and ensuring that the right treatment is given to the patient. The present study aimed to assess the existing level of knowledge, attitude and practice regarding EBP among dentists in Davangere city, Karnataka.
Materials and method: A cross sectional questionnaire survey was conducted among 160 dentists in Davangere City. Pre-tested questionnaire were distributed to them, of which 117 responded. SPSS software was used for statistical analysis of the data collected and Chi-Square test was applied.
Result: A total of 117 dentists responded (response rate 73.12%). 111 (94.90%) were aware of evidence based practice and 88 (75.20%) had come across the word at conferences/continuing dental education (CDE) programme. The results revealed significant differences ($p > 0.05$) among variables like type of practice, qualification and participation in CDE on knowledge, attitude and practice regarding EBP when Chi-square test was applied.
Summary and conclusion: The present study showed that all respondents were aware of the term EBP; however the level of knowledge was fair. Thus the study concludes that dentists require adequate training in order to enable them to practice efficient EBP.

Room F02 | 2014-09-12 | 11:30–12:15

FC130

Global Emerging and Established Life-Style Risk Factors for Cancer of Upper Aero-Digestive Tract

Bhawna Gupta, Newell Johnson
Griffith Health Institute School of Dentistry and Oral Health Griffith University

Aim and purpose: A risk factor is any attribute, characteristic or exposure of an individual that increases the likelihood of developing a disease or injury. The term "risk factors" comes with a cluster of related terms like risk indicator, modifiable risk factor, risk marker, determinant, and demographic risk factor, which are often used more-or-less interchangeably.
Materials and method: The development of cancer is of multifactorial origin. At the cellular level, the development of cancer is viewed as a multi step process involving mutation and selection for cells with progressively increasing capacity for proliferation, survival, invasion, and metastasis. Established and emerging risk factors in addition to incidence and prevalence of cancer of upper aero-digestive tract were identified.
Result: Established risk factors for cancer of upper aero- digestive tract identified were age, gender, lifestyle habits like smoked and smokeless tobacco, alcohol consumption, diet inadequate in fruits and vegetables and unsafe sexual practices. The emerging significant risk factors are oral trauma and dental risk factors like inflammation and infection.
Summary and conclusion: By understanding and quantifying impact of risk factors that causes cancer is vital for health decision-making, planning and prevention to improve global health. Various established and National policies and programmes should be implemented to raise awareness and reduce exposure to cancer risk factors, and to ensure that people are provided with the information and support they need to adopt healthy lifestyles.

FC131

Survey of the Usage of Mouthwashes Amongst Dental Students

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Aim and purpose: Mouthwashes are widely used as adjuncts to oral hygiene and in the delivery of active agents to the teeth and gums. The ability of these mouthwashes are to inhibit plaque formation and to alter the course of gingival inflammation. To assess the knowledge and practices regarding the usage of mouthwashes among Dental students of a targeted dental college in Chennai.
Materials and method: Among 608 dental students (400 undergraduates, 100 interns and 108 post graduates) studying in a dental college in Tamil Nadu 436 students were participated in this Study, in which 283 undergraduates (I, II, III, IV year), 74 Interns and 79 postgraduates students were included. A pre-validated customized questionnaire regarding allopathic and indigenous mouthwashes was administered to all participants. Data was obtained and analyzed for knowledge and practices regarding mouthwashes.
Result: Among 436 participants, only 44% of them had used either allopathic or indigenous mouthwashes but occasionally usage of allopathic mouthwash was more common than indigenous. 43% of those using mouthwashes experienced changes in taste sensation as the most common side effect. The result of this study showed that the knowledge was good among interns and post graduate students as compared to undergraduate students, whereas the practices of usage of mouthwash among all categories were limited.
Summary and conclusion: Dental students are probably familiar with oral hygienic methods; thereby the felt need is less for mouthwash usage.

FC132

Prevalence of Temporomandibular Disorder (TMD) in Aero-Phone Musicians

Naman Rao[1], J. R. Patel[2], Paranjay Prajapati[2], Rajesh Seturaman[2]
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Aim and purpose: Constant movement of mandible and tongue is required to play aero-phone instruments for desired harmony. This causes facial muscle fatigue especially peri-oral musculature and other malfunctions leading to radiating pain in the face, neck or shoulders also a painful clicking sound in jaw. With this background a study was conducted to check the prevalence of TMD aero-phone

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musicians. Assessing the prevalence of TMD in different aero-phone musicians and its correlation with their age and years of experience.
Materials and method: Total 110 aero-phone musicians were selected according inclusion and exclusion criteria and were assessed as per RDC/TMD. Joint sound and joint pain was evaluated. Palpation of muscles was done to estimate muscle fatigue. Age and experience of playing instrument was noted. Data was tabulated and statistically evaluated using SPSS software. Pearson correlation was calculated for collected data.
Result: The result shows highly significant with p-value of 0.000 and a Pearson correlation of 0.45% which suggest a strong positive correlation between the type of aero-phone instruments and number of TMD symptoms. Maximum number of symptoms was seen in saxophone players with 100%, trumpet with 87.5%, shehnai with 60%, trombone with 58.6%, flute with 13.3% prevalence rate. There was a correlation between ages and years of experience with number of symptoms.
Summary and conclusion: As per the results it can be concluded that there is higher incidence to develop TMD in aero-phone musicians with different rate and symptoms moreover it also correlates with the age and years of experience.

Room F03 | 2014-09-12 | 11:30–12:30

FC133
Awareness Among Dentists Regarding Consumer Protection Act
Purva Kulkarni, Jaya Joshi
VSPM Dental College & Research Centre, Nagpur, India

Aim and purpose: To assess and compare the awareness among dentists regarding Consumer Protection Act, in both rural and urban settings in Central India.
Materials and method: A questionnaire comprising of 20 questions will be surveyed among the dentists both in rural and private colleges from Central India. The questionnaire will be based on knowledge, attitude and practice criteria. A total number of 400 dentists will be surveyed. Data will be analyzed using SPSS version 20.00. Chi- square test will be used to compare categorical variables. It is a comparative study.
Result: The results state that 40% dentists in rural area and 80% in urban area are aware of existence of the act, but lack knowledge regarding it.
Summary and conclusion: The medical and dental fraternity has been included within the purview of Consumer Protection Act. Hence, it is essential on part of the practicing professionals to know the intricacies and provisions of the consumer protection act, so that they can safeguard their interest as well as that of the patients, thus maintaining a high professional ethical standard.

FC134
Antimicrobial Efficacy of Azadirachtaindica (Neem) Against Oral Pathogens
Neetu Gupta, C. M. Marya
Sudha Rustagi College of Dental Sciences and Research Center, Faridabad, Haryana, India

Aim and purpose: Neem tree has multiple potential uses in dentistry but its application is limited in routine dental practice. The present study was conducted with the aim to determine the Minimum Inhibitory Concentration (MIC) of Neem (Azadirachtaindica) extract as an antimicrobial and antifungal agent against Streptococcus mutans and Candida albicans respectively.
Materials and method: Azadirachtaindica (Neem) leaves extract was prepared by maceration for 1 week after proper identification. The working concentrations achieved by serial dilutions as 15%, 7.5%, 3.75%, 1.88%, 0.94%, 0.47%, 0.23%, 0.12%, 0.06% and 0.03%. MIC was performed on standard strains of *Staphylococcus mutans* MTCC 497 and *Candida albicans* MTCC 1637. For *Streptococcus mutans*, Brain heart infusion broth and for *Candida albicans*, Sabourd dextrose broth was used. The tubes were incubated for 24 h at 37°C. Turbidity in the MIC tube indicated the growth of bacteria or *Candida* respectively. The concentration, at which there was no turbidity, was the MIC value of that strain.
Result: Neem extract was found to be having antimicrobial efficacy against *Streptococcus mutans* and *Candida albicans*.
Summary and conclusion: Data from this study strongly suggest that the extract from Neem leaves exhibits in vitro antibacterial and antiviral activity against both *Streptococcus mutans* and *Candida albicans*. Such investigation on natural products to cure diseases may create an alternative source of promising medicines and thus can be a boon to Indian Public Health care system.

FC135
Protective Effects of Salivary Factors in Dental Caries Among Diabetic Patients in Jodhpur City
Amarpreet Singh
Vyas Dental College Jodhpur, India

Aim and purpose: Salivary factors have been studied for their effects on the process of dental caries in patients of diabetes mellitus type 2, so the objective of this study is to access the effect of salivary calcium, salivary flow rate, salivary PH, on dental caries among type -2 diabetes patient and non diabetic patients.
Materials and method: The samples of saliva were collected from 30 patients of diabetes mellitus type 2 on the basis of their fasting blood sugar level [126 mg/dl (7 mmol/l) or higher] and on the basis of their past medical records and 30 years age matched controls after getting informed consent. Clinical data on dental caries status was recorded using modified WHO oral health survey – basic method 1997 and the salivary sample was collected to analyze salivary pH, salivary flow rate and salivary calcium. The parametric one way (ANOVA) of variance was used to compare means of dental caries and salivary factors.
Result: The salivary pH (4.83 + 0.46), flow rate (0.71 + 0.27), and calcium levels (5.25 + 1.54) were found to be low in patients as compared to controls. The glycemic factors were significantly correlated with salivary factors indicating their influence on progression of caries in diabetes.
Summary and conclusion: The study shows that salivary pH and flow rate may be regarded as protective factors for dental caries in diabetes. Optimum level of salivary calcium may be responsible for reducing the occurrence of dental caries.

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FC136

Alternate Strategies to Promote and Prevent Oral Health

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Aim and purpose: To study the in vitro effectiveness of five common household ingredients namely neem (*Azadirachta indica*), grape seed (*Vitis vinifera*), gum Arabic (*Acacia Arabica*), aloe vera and Indian ink nut (*Terminalia chebul*) against *Streptococcus mutans* and *Candida albicans*.

Materials and method: Stock cultures were maintained at 4°C on slant of nutrient agar. Active cultures for experiments were prepared by transferring a loop full of cells from the stock cultures to test tubes of nutrient broth for bacteria that were incubated at 24 h at 37°C. The Assay was performed by agar disc diffusion method. The plates were incubated for 24 h, at 37°C. Then the microbial growth was determined by measuring the diameter of zone of inhibition.

Result: All the five ingredients have effective antimicrobial activity and anti fungal activity. The effective anti bacterial activity in order are neem, ink nut, gum Arabic, grape seed and aloe vera. The most striking feature of this study is that the order was reversed for the effect on *Candida albicans*.

Summary and conclusion: This study shows that agents that are good antimicrobials are week antifungal. Neem is strongly recommended antibacterial and aloe vera is a potent antifungal which can be used cost effective to combat oral diseases.

Room F04 | 2014-09-12 | 11:30–12:10

FC137

Dental Healthcare to Rural Population Through Dental Institutions in India

Jatinder Singh, Inderpreet Kaur
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Aim and purpose: (i) To provide oral health education to masses through a network of dental surgeons, health care workers, Anganwadi workers and school teachers (ii) To formulate guidelines to strengthen oral health set-up at district level, community health centers and primary health centers.

Materials and method: Adoption by the institutes of the PHC's, CHC's and District hospitals for the utilization of the potential manpower in the form of Interns and post graduates to fulfill the commitment of providing the training to the dental school graduates.

Result: Challenges in the manpower development in the form of dental graduates along with the primary dental health care system has helped in reaching the masses and thus providing the primary preventive services to the underprivileged along with reduction in disease levels.

Summary and conclusion: Despite great achievements in global health care, problems remain among underprivileged groups in developed and developing countries. In India approximately 2% of budget is spent on health and there is no separate allocation for oral health. The revised National health policy document 2002 does not have any mention of oral health. Absence of definite guidelines/strategies/policies or plans of DCI and the Govt. of India for the utilization of potential manpower in the form of students, interns in the 290 dental colleges in the country. Adoption of area (PHC/CHC/District)- commitment from dental institutions. Challenges for manpower development with the aim of primary Oral Health Care Systems helping in increased access to the underprivileged and decreased levels of dental disease.

FC138

Assessment of the Impact of the Work Place Environment on Oral Cancer Awareness Amongst High Risk, Semi- Urban Blue Collared Personnel

Ankit Jha
Manipal College of Dental Sciences, Manipal, India

Aim and purpose: To assess whether the awareness regarding Oral Cancer, in a high risk, semi-urban, blue collared personnel, is impacted by its proximity of work with a highly educated student population.

Materials and method: A questionnaire-based survey was carried out over a period of 5 days in three locations across the township of Manipal, India. 578 members of the University ancillary personnel answered this survey.

Result: Even though 77.9% of the targeted group had heard about Oral Cancer before, over 90% had never been screened for it, despite working in a prominent Health Sciences University. 42.2% believed that smokeless tobacco (a habit prevalent in India) was safer than smoked tobacco and a similar percentage was unsure of alcohols role in Oral Cancer. Most participants were not aware of how to recognize and treat the disease.

Summary and conclusion: Lack of facilities and monetary support in India, has created difficulties in reaching out to different subgroups and create awareness. However, blue collared workers that are employed in and nearby Health Care Universities are accessible for educational campaigns and free screenings by students and faculty. It is hence, suggested that such Universities take initiative in educating fellow workers.

FC139

Association of Dermatoglyphics With Dental Caries, Periodontal Diseases and Malocclusion Among High School Children in Bangalore City

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The Oxford Dental College and Research Centre, Bengaluru, India

Aim and purpose: To assess the relationship between fingerprint patterns with dental caries, periodontal disease and malocclusion among high school children aged 13–15 years in Bangalore city.

Materials and method: A total of 500 school children participated in the study. Five Higher Secondary Schools were selected by simple random sampling. The data for the present study was collected using a specially designed proforma; dental caries was assessed using DMFT and DMFS indices, periodontal disease using CPI, malocclusion using DAI and angles classification of

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malocclusion, respectively; and fingerprints using rolled impression method.
Result: DMFT and DMFS were significantly associated with whorls. Healthy gingiva is significantly associated with loops and presence of calculus is significantly associated with whorls. Study subjects having DAI score '1 is significantly associated with loops. Whereas, study subjects having DAI score '3 is significantly associated with whorls. Study subjects having class-I malocclusion is significantly associated with loops and arches. Whereas, study subjects having class-II malocclusion is significantly associated with whorls.
Summary and conclusion: The outcomes of this study show a strong association between Dermatoglyphics patterns with the dental caries, periodontal disease and malocclusion. Therefore, this study agrees with the fact that, Dermatoglyphics offers many distinct advantages as a screening tool and could be used as an easily accessible, economical and non-invasive marker for the aforementioned conditions.

Room F10 | 2014-09-12 | 10:30–11:30

FC140
Cambra: Cornerstone of Prevention
Sanchit Paul, Arathi Rao, B. S. Suprabha
Affiliation missing

Aim and purpose: Caries risk assessment is the determination of the likelihood of the incidence of caries during a certain time period. Strategies for managing caries increasingly have emphasized the concept of risk assessment. Traditionally, multifactorial caries-risk studies have focused one valuation of biological, demographic, and dietary factors and have used cavitations of a carious lesion (prevalence or incidence) as the outcome variable. Caries-risk assessment model involves a combination of factors including diet, fluoride exposure, a susceptible host, and microflora that interplay with a variety of social, cultural, and behavioral factors.
Materials and method: Caries management by risk assessment (CAMBRA) represents an evidence-based approach to preventing, reversing, and treating dental caries. The risk assessment and the emphasis is not on just the cavitated stage of lesion progression, but also on the pre-cavitated stages, where chemical, rather than surgical, treatments are appropriate. It is important to treat lesions as early as possible in the pre-cavitated stages using strategies that reduce pathogens, inhibit de-mineralization, and enhance re-mineralization.
Result: Thus, CAMBRA, with its preventive and chemical strategies, is truly the cornerstone of minimally invasive dentistry and make it different from the traditional restorative approach in treating dental caries.
Summary and conclusion: Current standards in caries management emphasize risk assessment and appropriate therapeutic interventions, detection of early non-cavitated lesions, diagnosis of severity and activity of lesions, and minimally invasive surgical intervention only when needed using the optimum dental materials based on the patients problems. The collaboration among research, education, industry, dental health care workers, and patients should be promoted for better prevention of dental caries.

FC141
In-Vitro Antimicrobial Effects of Guava Leaves Extract Against Caries Microorganisms
N. Sandesh, Deepika Jain
Sri Aurobindo College of Dental Science, Indore, India

Aim and purpose: To evaluate in-vitro antimicrobial potential of guava leaves extract against *Streptococcus mutans* and *Lactobacillus acidophilus*.
Materials and method: Leaves of guava (*Psidium guajava* L.) were cleaned and dried. Ethanolic and water extracts were prepared using Soxhlet extractor. Extracts were filtered using Whatman no.4 filter paper and were diluted to 5% and 20% (W/V) concentration using ethanol and water. Test microorganisms *Streptococcus mutans* (MTCC-890) and *Lactobacillus acidophilus* (MTCC-497) were obtained from MTCC Genebank, Chandigarh. Enriched Brain Heart Infusion agar and MRS agar were used for culture of *S. mutans* and *L. acidophilus* respectively. A positive control Chlorhexidine (0.2%) and negative control distilled water was used to substantiate the results.
Result: Mean zone of inhibition against *S. mutans* with 20% and 5% ethanolic extract were 11.25 and 8.6 mm respectively, whereas against *L. acidophilus* was 14.3 and 11.4 mm. Water extract at similar concentrations exhibited 5.5 and 1.9 mm zones against *L. acidophilus* and no activity against *S. mutans*. Highest zone of inhibition was exhibited by 0.2% Chlorhexidine (13.75 mm against *S. mutans* and 15.7 mm against *L. acidophilus*), this activity of Chlorhexidine was significantly higher than ethanolic and water extract ($p < 0.05$) except in case of activity of 20% ethanolic extract against *L. acidophilus*.
Summary and conclusion: Ethanolic extract of guava possess antibacterial efficacy against *S. mutans* and *L. acidophilus* at 5% and 20% concentrations. This effect was less than that of Chlorhexidine. The water extract showed efficacy only against *L. acidophilus*.

FC142
Caries Experience and Eruption Pattern in Permanent First Molars-A Survey
Shalini Garg, Abhishek Dhindsa, Ashish Loomba, Gundeep Singh, Satyawan Damle
Maharishi Markandeshwar College of Dental Science and Research Mullana

Aim and purpose: The aim of the present survey was to determine the caries free proportions, caries experience and baseline data regarding the status of permanent first molars between the age groups of 5–8 years to initiate sealant programme. The age groups considered were (5 to <6), (6 to <7), (7 to <8).
Materials and method: The present survey was conducted on 1008 children (59.3% M, 40.7% F) between the age group of 5–8 years from five schools with mean age of 5.9 years (SD 0.78). The mean of total number of teeth examined/present in oral cavity was 22.10 (SD 1.9). Dental caries was scored using WHO diagnostic criteria.
Result: The eruption of all four permanent first molars was not statistically significant between boys and girls. Only 28% permanent molars erupted before completion of 6 years of age, while 89% were fully erupted before completing the age of 8 years. The mean caries experience in children was 0.0926 (SD 0.12). The caries experience

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was not statistically significant between boys (0.097) and girls (0.0925). The corresponding mean caries experiences for age groups (5 to <6), (6 to <7), (7 to <8) year olds were 0.087, 0.096 and 0.093 respectively. The decayed score was the significant major component. The d-component predominated with mean value 1.91 (SD 2.53). Majority of the affected teeth were untreated. On the other hand mean DMFT in boys and girls was 0.06 (SD 0.37) and 0.13 (SD 0.58) respectively where D –component contributed maximum.
Summary and conclusion: Present survey provides baseline data to initiate sealant program and indicates need of sealants in children participated.

FC143
Prevention of Dental Diseases in School-Based Tooth Brushing Program
Tatiana Kupets, Larisa Palianskaya, Peter Leous, Svetlana Matelo
WDS Moscow Russia

Aim and purpose: This study evaluates the clinical effectiveness of fluoride-free mineralizing toothpaste in the prevention of dental caries and periodontal disease in young school children.
Materials and method: 365 children aged 6–7 year (mean 6.6 years) in four schools in Minsk participated in a 2-year program of daily supervised tooth-brushing, using commercial toothpastes: a fluoride-free with Ca, P, Mg and xylitol (group A, n = 180), or fluoridated toothpaste with NaF 1000 ppm F^- (group B, n = 185). Group C (n = 173) was a passive control with no supervised brushing. Gingival index-GI (Loe-Silness, 1963) and DMFT were clinically recorded by two dentists at baseline and 2 years of double blind assessments. Ethical approval and parents consents were obtained. Student's *t*-test was applied to the data.
Result: At baseline average GI in groups was as follows: A = 0.79 ± 0.39; B = 0.76 ± 0.30; C = 0.74 ± 0.28, with no statistical difference between groups. After 2 years, GI decrease was as follows: A = 0.34 ± 0.10 (by 55%); B = 0.37 ± 0.10 (by 51%) and C = 0.50 ± 0.11 (by 32%). Averages DMFT at base-line were 0.29 ± 1.25, 0.4 ± 1.31, 0.42 ± 1.16; at the end of program: 0.95 ± 1.12, 0.96 ± 1.24, 1.36 ± 1.28 in groups A, B, C, respectively. The comparison with "passive" control showed a decrease of 0.41 DMFTs (by 30%, $p < 0.02$) in group A and 0.40 DMFT.
Summary and conclusion: Data suggests an equally positive effect of both mineralizing fluoride-free and fluoridated toothpastes in improving gingival health and decreasing permanent teeth dental caries in young school children.

Room F11 | 2014-09-12 | 10:30–12:30

FC144
Mutans Streptococci in Children With and Without Dental Caries: PCR Study
Ashish Loomba, Abhishek Dhindsa, Ashish, Gundeep Singh, Satyawan Damle, Shalini
Maharishi Markandeshwar College of Dental Science and Research Mullana

Aim and purpose: The aim of this study was to determine colonization of mutans streptococci (MS) in saliva samples of children with and without clinically detectable dental caries in the age groups of 3–6 and 12–15 years and to compare the association of MS in saliva using PCR.
Materials and method: After obtaining the ethical clearance from institutional ethical committee, 80 children meeting the inclusion criteria were included in the study. Children were divided into 4 groups on the basis of their age and dental caries status. Saliva samples of children were collected and plated onto Mitis Salivarius Bacitracin agar plates. After identification of MS, DNA isolation and purification was done and MS were evaluated using the PCR method, with primers (gtfB). AP-PCR fingerprinting was performed with primer OPA-13.
Result: MS was found to be present in all the samples using microbial assay whereas using molecular assay 2 samples did not show the presence of MS. However, the difference was not statistically significant. Mean colony count in 3–6 year children was 1.941 ± 0.63 × 105 CFU/ml where as in 12–15 year children count was 2.876 ± 0.85 × 105 CFU/ml, ($p < 0.05$). MS colony count in children with caries was 2.79.
Summary and conclusion: Results obtained with AP-PCR suggested a significant relationship between caries activity and genetic diversity.

FC145
Cottage Cheese for Healthy Whites!
Tanvi Shah, Amitha Hegde, Manju Gopakumar
A B Shetty Memorial Institute of Dental Sciences

Aim and purpose: The erosive potential on teeth of carbonated drinks has been studied. This study evaluates the effect of homemade products like cottage cheese on the erosive acidic challenge.
Materials and method:
(1) A survey on the preference of carbonated drink was carried out.
(2) Informed consent was obtained from 40 children with DMFT/deft >3 between 5 and 12 years.
(3) They were asked to refrain from eating or drinking 1 hour prior to the test.
(4) 3 ml of unstimulated baseline saliva was collected.
(5) 300 ml of carbonated drink was given and saliva was collected after 10 min.
(6) 20 mg of cottage cheese was given and saliva was collected at 5, 15, 30 min intervals.
(7) The collected saliva was analyzed for pH, calcium, phosphorus, alkaline phosphatase.
PH-pH meter calcium-OCPC method phosphorus-phosphomolybdate method alkaline phosphatase-DGKC-SCE method Ethical clearance was obtained and data was statistically analyzed.
Result: Salivary parameters decreased after carbonated drinks but increased after the consumption of cottage cheese.
Summary and conclusion: Cottage cheese creates a supersaturated environment and thus helps remineralization. It should be a part of diet counseling.

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FC146

Mineral Mapping of the Proximal Enamel Lesions

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Aim and purpose: The purpose of this study was to map the distribution of the mineral content of cavitated and non-cavitated proximal lesions.
Materials and method: Premolar teeth extracted for orthodontic treatment were collected. Teeth were brushed clean, mounted in resin and crown section was stored in HBSS. For evaluating the mineral density of the lesions, 3-Density plots were generated using XRADIA system. Imaging was undertaken using continuous mode exposures at 0.5 s intervals and binning value of 2, resulting in a resolution of 14.8 μm. The adjusted images were then exported to Slicer software to produce graphical plots of the proximal lesions.
Result: The results demonstrated different areas in the proximal lesions based on their mineral densities. The characteristic feature of non-cavitated lesions was the presence of hard-surface layer, body and the translucent zones. The specific feature of cavitated lesion was the absence of the hard surface layer. The dark zone (remineralization zone) was not observed in any of the lesions. The pattern of the mineral loss in both lesion types, showed the typical triangular form of enamel caries with the base toward the surface area.
Summary and conclusion: The lack of hard surface layer on the outer surface of cavitated lesions indicates that this layer is not merely formed as a remineralized layer on the outer surface of enamel lesions and possibly is also a structural feature of the enamel. The absence of the dark zone indicates that the degree of remineralization in the dark zone is not enough for detection by x-ray methods.

FC147

Evaluating 'Knowledge-and-Attitude-Change' About Early-Caries Detection-and-Management; Using Model of 'Evidence-Based Teaching-Cum-Hands-on-Exercise'

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Aim and purpose: To evaluate gain in knowledge and change in attitude, about early-caries [EC] detection and using non-/micro-invasive therapies for management, through evidence-based-teaching and hands-on-demonstration of Resin-infiltration of early-caries [RI].
Materials and method: Recent changes in European Cariology-Curriculum have emphasized towards learning caries-detection in continuum [ICDAS] and non-surgical approaches in management of EC, including novel micro-invasive RI-technique 1, 2. Lectures, seminars and patient-simulation-exercises etc. have been considered exemplary mode of education 2, 3. With this background, a lecture-cum-hands-on-course was conducted, educating about the need and methods to detect and manage EC. Participants were provided with artificially-demineralized extracted-teeth and ICON-kits to infiltrate the lesions in patient-simulation conditions. Questionnaires were provided both before and after the course to evaluate change in their knowledge and attitude. 26 postgraduate-students/faculties from 12-dental schools attended the program.
Result: 50% were not detecting non-cavitated lesions in routine dental-practice, 60% reported to use sharp-tip probe and none reported of using ICDAS. 60% were using commercial remineralization-agents but only 20% reported to monitor lesions longitudinally. None reported to have used RI but 76% reported to know/heard about RI. Post-course questionnaire was designed using the Liker's scale. After the lecture 100% students 'strongly-agreed to the importance of detecting, monitoring and using non/micro-invasive therapies to treat early-caries lesions. 64% 'strongly-agreed and 36% 'agreed to the importance of using ICDAS. 86% told to prefer RI for treating EC lesions while 14% reported to use either of the non-/micro-invasive strategies.
Summary and conclusion: The pilot study re-emphasized the promising impact of evidence-based-teaching and patient-simulated hands-on-training to bring about an attitudinal change toward EC detection and non-surgical therapies.

Room F12 | 2014-09-12 | 10:30–11:30

FC148

Knowledge is the Only Shield – Hepatitis B

Namrata Dalal
Manav Rachna Dental College, Faridabad, Haryana, India

Aim and purpose: This study was conducted with the main objective, to gauge the level of Hepatitis B awareness among dental practitioners, students and health care personnels.
Materials and method: The current survey was conducted on the faculty members, students and health care personnel (age group 17–55 years) of a dental college in Haryana using a set of questions. The total correct answers were calculated for each question and assessed in the form of the percentage of the total survey population which gave the correct answer.
Result: The result of the survey was that all of the participants of the survey had heard about Hepatitis B infection but less than half survey population knew about the modes of transmission of the virus and its prevention.
Summary and conclusion: Dental professional share with other health care personnel's an increased risk of exposure to Hepatitis B virus infection and possible sequel such as hepatitis and hepatocellular carcinoma. It has been observed that the level of Hepatitis B awareness is low among the dentist community. Awareness of the mode of transmission, prevention, disease progress and other types of hepatitis is currently required.

FC149

Effect of Lactobacillus Breviscd2 in High Risk Caries Teenage Group

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Aim and purpose: A double-blind, randomized, placebo-controlled clinical trial to find if the lozenges containing Lactobacillus brevis CD2 can reduce salivary mutans streptococci (ms) and bleeding on probing, during a 6-week period, in a sample of high caries risk Teenage Group.

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Materials and method: A total of 100 children (aged 15–18 years), presenting two to three carious lesions and salivary ms concentration of = 105 CFU/ml, are enrolled and divided into two groups, Group A a *L. brevis* CD2 lozenge group and Group B non-*L. brevis* lozenge group, and examined at baseline (t0), after 3 weeks (t1), after 6 weeks of lozenge use (t2) and 2 weeks after the cessation of lozenge use (t3). Salivary ms were counted, and bleeding on probing was assessed.
Result: It is found that *L. brevis* CD2 lozenges significantly reduced salivary ms concentrations and bleeding. The subjects from the test group showed a statistically significant decrease ($p = 0.01$) in salivary ms concentration. At t2, a statistically significantly lower bleeding value was recorded in the test group compared with the control group ($p = 0.02$).
Summary and conclusion: Six week's use of lozenges containing *L. brevis* CD2 had a beneficial effect on some important variables related to oral health, salivary ms and bleeding on probing.

FC150
Pit and Fissure Sealants – What Does Current Evidence Say?
Gaurav Nagarsekar
Dr Nagarsekar'S Dental Clinic

Aim and purpose: To review current evidence based clinical guidelines for use of pit and fissure sealants.
Materials and method: MEDLINE search was conducted to identify current guidelines and recommendations for use of Pit and Fissure Sealants.
Result: Sealants should be placed in pits and fissures of primary teeth, and in permanent teeth of children, adolescents and young adults, when it is determined that the tooth, or the patient is at risk of developing caries. Pit and fissure sealants should be placed on early (non cavitated) carious lesions in children, adolescents, young adults and adults to reduce the percentage of lesions that progress. A compatible one bottle bonding agent may be used between the previously etched enamel surface and sealant material in certain situations. Resin-based sealants are the first choice of material. Where moisture control is compromised, Glass ionomer cement may be used as interim agent. A four handed technique should be used when possible. Sealants should be applied as soon as the tooth is sufficiently erupted to be isolated. Monitoring and reapplication of sealant is essential to maximize effectiveness.
Summary and conclusion: Providing the best ethical treatment to patients with the help of evidence based consensus driven clinical guidelines should be the priority in rendering good dental care. Current evidence shows that judicious use of pit and fissure sealants is effective in preventing initiation and progression of dental caries. A periodic follow-up will be a big step for the patient having a caries free experience.

FC151
Stamp – The Smart Bomb for Dental Caries
Srishti Deshpande, Praveen Jodalli
Yenepoya Dental College

Aim and purpose: To elaborate about a new class of pathogen selective molecules namely Specifically Targeting Antimicrobial Peptide (STAMP).
Materials and method: An electronic search was carried out on MEDLINE (through PubMed interface), EMBASE.
Result: Based on this search, the STAMP technology has been effective in an anti caries action. STAMP technology, creates an artificial peptide, almost identical to the original one. It then integrates this artificial replication into the bacteria, inhibiting natural functions and resulting in apoptosis. A completed STAMP consists of two sides joined by a small flexible linker. One side functions as the targeting region and can consist of a natural pheromone, produced by the cariogenic bacterium which helps to assure that the STAMP finds its target. The pheromone provides a 'fingerprint of the targeted bacteria and helps the targeting region of the STAMP bind to the surface of the pathogen, leading to its eventual destruction. The other side is the killing region and can be thought of as the antimicrobial' bomb that kills the selected bacteria upon delivery. 'C16G2 is where the peptide chain is disrupted and the bacteria, consequently destroyed.
Summary and conclusion: STAMP technology has the potential to eliminate selective pathogens while preserving the normal oral flora. Therefore, this paper focuses on prevention of dental caries through newer advances.

Room F13 | 2014-09-12 | 10:30–11:30

FC152
Probiotics- Healthy Way to Prevent Dental Caries
Roma Yadav, Abhishek Yadav
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Aim and purpose: The aim of the study was to assess the role of Probiotics in reducing the salivary mutans streptococci count in oral cavity.
Materials and method: A double blind randomized controlled trial was carried out among 60 students with age group from 18 to 22 years. Students were divided randomly in to two groups, group A and group B in such a way that each group had 30 subjects. Two milk drinks, with and without Probiotics were given to the study and control group respectively. Study was conducted for a period of three weeks. The saliva samples were collected at baseline and after the intervention period and were sent for microbiological analysis to assess the salivary mutans streptococci counts.
Result: A statistically significant reduction of salivary mutans streptococci were seen in the Group A as compared to the Group B ($p < 0.05$).
Summary and conclusion: There was reduction in the mean salivary mutans streptococci count after consumption of Probiotics. So, Probiotics can be considered as the alternate method for preventing the dental caries.

FC153
Are Visually Impaired Children at Greater Risk of Poor Oral Hygiene?
Anchal Aggarwal, Bhuvana Vijay
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Aim and purpose: To assess the awareness of oral hygiene practices and the oral health status among the visually impaired children in schools of Delhi, NCR.

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Materials and method: A pilot study was conducted on a sample size of 40 visually impaired children aged 10–17 years. Existing oral hygiene practices were recorded through a verbal interview in a structured, validated questionnaire. Oral hygiene was assessed using Greene and Vermillions simplified oral hygiene index (OHI-S). In addition to this the children were taught Fones brushing technique using a toothbrush and a cast by audio tactile perception technique. The subjects will be re assessed after 3 months to check the effectiveness of the oral hygiene instructions given.
Result: Only 37 (93%) students practiced oral hygiene measures. 32 (80%) of the study sample brushed their teeth less frequently (once/day). 33 (85%) of these students had never visited a dentist. 27 (68%) had never received any oral health education while 25 (62%) had never been taught the technique of tooth brushing. Visually challenged children exhibited fair to poor oral hygiene, wherein 31 (78%) had poor oral hygiene and only 2 (5%) had good oral hygiene.
Summary and conclusion: Unsatisfactorily practice oral hygiene measures and have limited access to the oral health care providers. Thus, they need customized preventive oral health care programs and increased accessibility to the dental health education to improve their quality of life.

FC154
Association Between Anemia and Chronic Periodontitis – A Cross Sectional Study
Sudarshana Devenasing Pawar
Terna Dental College and Hospital

Aim and purpose: Periodontal medicine has thrown light on the increasing association between periodontal disease and Systemic conditions. Anemia is one of the most common global public health problems in developing countries. The aim of the present study is to determine the association between Hematological parameters and Chronic Periodontitis.
Materials and method: A total of 60 systemically healthy subjects in the age group of 20–45 years, referred to the department of Periodontology in our college, were selected and categorized into two groups –Group A: included 30 (15 males and 15 females) subjects with Chronic Generalized periodontitis (test group) and Group B: included 30 (15 males and 15 females) subjects with clinically healthy gingiva (control group). The Hematological parameters: Hemoglobin (Hb), Packed cell volume (PCV) and Red Cell indices [Mean corpuscular volume (MCV), Mean Corpuscular Hemoglobin (MCH), and Mean Corpuscular Hemoglobin Concentration (MCHC)]
Result: The mean values of Hemoglobin (Hb), packed cell volume (PCV) and red blood cell indices (MCV, MCH and MCHC) were lower in test group as compared to control group. The mean values for Hb, MCV and MCH were significantly lower in test group, suggesting mild anemia.
Summary and conclusion: A positive relationship was observed between the Hematological parameters and the Chronic Periodontal disease, suggesting that like other Chronic conditions, Periodontitis, may tend towards Anemia.

FC155
A Study on the Impact of Commercial Toothpastes on Gingival
Dilip Goswami
Regional Dental College, Guwahati, Assam, India

Aim and purpose: In this paper an attempt has been made to evaluate some of the commercial toothpastes on their role on gingival health in terms of plaque and gingivitis reduction.
Materials and method: A randomized double blind 6 months clinical study was conducted to evaluate different brands of commercial toothpastes on the reduction of plaque and gingivitis scores on a sample of male subjects between the age group of (18–35) years after obtaining institutional approval.
Result: On statistical analysis it has been found that all the evaluated toothpastes do have a role in the maintenance of gingival health by way of plaque and gingivitis reduction. But it has also been observed that differences exist among the evaluated toothpaste brands on the reduction of plaque and gingivitis parameters.
Summary and conclusion: This study indicates that commercial toothpastes do have a role in the maintenance of gingival health and may be recommended to the general population for promotion of oral health.

Room F14 | 2014-09-12 | 10:30–11:30

FC156
Comparative Evaluation of Electrically Active Sonic Toothbrush: A Clinical Trial
Himanshu Dadlani
Faculty of Dental Sciences, SGT University, Gurgaon, India

Aim and purpose: The purpose of the present study was to clinically evaluate and compare the efficacy of an electrically active sonic toothbrush and an oscillating/rotating powered toothbrush in the reduction of plaque and gingivitis.
Materials and method: 40 healthy student volunteers (20 males, 20 females) were selected. After approval from the Ethical Committee of the Institution, the subjects were randomly assigned into two groups by a second examiner; one group used a current producing sonic toothbrush and the other group used a battery powered toothbrush. Plaque Index, Modified Gingival Index and Gingival Bleeding Index were assessed at baseline, 15th day, 30th day, 45th day and 60thday.
Result: All the baseline indices appeared to be well balanced. At the end of the study, reduction in plaque index, modified gingival index and gingival bleeding index were statistically highly significant during each interval for both the toothbrushes. The difference in reduction of clinical parameters between the two toothbrushes was statistically non significant.
Summary and conclusion: Both the toothbrushes used in this study were clinically effective in removing plaque and improving gingival health.

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FC157

The Effect of Dental Fluorosis on Periodontal Status: An Ecological Study

Amandeep Chopra
SDDHDC

Aim and purpose: Periodontitis is multifactorial in nature. The various determinants of periodontal disease are age, sex, race, socioeconomic status and risk factors include tobacco usage and oral hygiene status. However there is little or in consistent epidemiological data on the periodontal status of subjects with fluorosis. The aim of the study was to investigate the effect of dental fluorosis on the periodontal status using CPITN index, as an ecological study.
Materials and method: A total of 600 subjects aged 20 years and above suffering from fluorosis who visited outpatient department of Dental College, were assessed for their periodontal status. Clinical parameters recorded are OHI –S to assess the oral hygiene status, Jacksons fluorosis index to assess the degree of fluorosis and CPITN index to assess the periodontal status where treatment need was excluded. In all the indices only the index teeth were assessed and the results were subjected to statistical analysis.
Result: Gingivitis and periodontitis was more common in females than males, which was significant. As the age advanced gingivitis reduced and periodontitis increased steadily which was significant. Poor oral hygiene subjects had more periodontitis, which was significant and as the degree of fluorosis increased, severity of gingivitis reduced and periodontitis increased. Tobacco users had more periodontitis than non tobacco users
Summary and conclusion: A correlation exists between degree of fluorosis, gingivitis and periodontitis along with other factors such as age, sex, SES, OHI-S and tobacco usage.

FC158

Prevalence of Self-Perceived Halitosis, Knowledge on Causes and Prevention Among Expectants

Germana Lyimo, Hawa Mbawalla
Muhimbili National Hospital

Aim and purpose: To determine prevalence of self reported malodor, knowledge on causes and prevention among pregnant mothers attending RCH Clinic, at MNH in Dar-es-salaam
Materials and method: Cross sectional descriptive study, with a sample size of 348 of the targeted 400 pregnant mothers drawn from a population of pregnant women attending MNH RCHC. Data was collected using guided questionnaire whereby pregnant mothers who consented were interviewed. Data was filled and analyzed using SPSS version 17. Chi square test was used to determine the differences in level of knowledge and the significance level was set at $p < 0.05$
Result: The percentage of people who were reported to have suffered from oral malodor at some point in life was 19.3%. More than 91% were aware of at least the cause of oral malodor. College educated mothers were most conversant with variable causes and preventive choices. 74.1% did not know that plaque on teeth and tongue causes halitosis. More than 50% of pregnant mothers did not consider alcohol as a cause of oral malodor and mothers with no formal and primary education (63.2%) had the least realization. The percentage of mothers who were informed that bad morning breath is a sign of oral malodor was 92.2%
Summary and conclusion: This study established that, lack of knowledge on both the causes and prevention of oral malodor is related to level of education.

FC159

Risk Factors and Prevalence of Dental Caries, Oral Lesions and OSMF Among Oral Tobacco Users in Karachi

Hamza Syed Muhammad, Bilal Hussain Khan, Faizan Syed Muhammad, Momina Anis Motiwala, Saima Butt, Sara Ikram Khan
Pakistan Dental Community

Aim and purpose: Highlighting prevalence and risk factors for Oral Tobacco (OT) consumption. Determining relationship between caries status and OT consumption by performing a caries assessment test identifying types of pre-cancerous lesions and stages of oral sub-mucosal fibrosis (OSF) among OT chewers.
Materials and method: Sample Size: n = 615, age range 18–60 years. Data collecting tool was self-generated Performa along with WHO oral examination form. Male's drivers, consuming OT were considered criteria for sampling; belonging to either long or short route driving category. Prior consent was taken. During examination, DMFT score, periodontal and mouth opening status (for OSF) and their oral mucosal conditions were recorded. Using SPSS version 16, Data entry and analysis was done. Cross Tabulations, Descriptive Frequencies, Split file method of data analysis was used. Bar charts and pie Charts were used for qualitative data representation.
Result: It was seen that out of four OT types (Paan, Gutkha, Mahwah, and Naswar), most individuals consuming Gutka, Leukoplakia was the most observed lesion. In the demographics it was noted that OT consumption was highest (59.3%) amongst LOW SES Category (monthly income <15,000 PKR). Findings of study indicate a +ve direct-relationship exists between OT Consumption and Oral pre-cancerous lesions. Mild Fibrosis was observed in majority and consumption of OT made a detrimental effect on the DMFT score. DMFT mean = 5.1610 showed extremely high deviation from the WHO criteria (mean <3).
Summary and conclusion: OT consumption has direct effect on oral health, type of OT, duration of consumption are factors which are directly related to severity. OT consumption as observed during our study causes oral cancer, OSF and affects DMFT status.

Room F15 | 2014-09-12 |10:30-11:30

FC160

Impact of Untreated Dental Caries on School Attendance Among the Preschoolers

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Aim and purpose: This study was conducted with an objective to assess the prevalence of untreated dental caries and its impact on school attendance among pre-schoolers of Udupi District

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Materials and method: This was a cross sectional study conducted among pre- school children (2–5 years). Prevalence and consequences of untreated dental caries was assessed using pufa index. The absence from school was recorded according to the information furnished by parents/caretakers. Examiners were trained and calibrated in the department of public health dentistry. Ethical approval and informed consent was obtained prior to start of the study. Statistical analysis was done using SPSS 17.0.
Result: Prevalence of untreated dental caries was 29% among the pre- schoolers. There was a statistically significant correlation between untreated dental caries and loss of school hours among the children.
Summary and conclusion: Index of untreated dental caries can be a predictor of the absenteeism from school among the preschoolers of study location.

FC161
Association Between Dental Fear and Dental Attendance Among Adults of Karad City
Komal Nalawade
School of Dental Sciences, Karad, India

Aim and Purpose: To evaluate the association between dental attendance and dental fear while considering the simultaneous effects of perceived oral health and treatment need, satisfaction with oral health services, age, gender, marital status, and attained level of education.
Materials and method: Cross sectional study among the adults of Karad city. Ethical approval was obtained prior to the start of the study. Informed consent was obtained from the participants. Validated and standardized questionnaire was used to measure the dental fear perceived oral health, perceived treatment need, satisfaction with oral health services, age, gender, marital status, and attained level of education. Similarly the dental attendance and reason for dental visit was assessed using questionnaire. Oral health status was assessed with type 2 dental examination.
Result: Irregular attendees were more likely to be very afraid of visiting a dentist than regular attendees were. Irregular dental attendance can be attributed to high dental fear (etiologic fraction among exposed) in substantial portion of the sample population.
Summary and conclusion: Dental fear is a predictor for the dental attendance and a proxy measure for oral health status among the adults. Modifying the fear component can help in reducing the treatment visits and enhance the preventive dental visits among the population.

FC162
"Musculoskeletal Disorders Among Dental Professionals in Bangalore City"-Cross Sectional Study
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Bangalore Institute of Dental Sciences Hospital and Research Center

Aim and purpose: (i) To assesses the prevalence, intensity and location of musculoskeletal disorders among study subjects. (ii) To compare the association between musculoskeletal pain and work characteristics among the study population. (iii) To compare the association between musculoskeletal pain and work characteristics among the study population.
Materials and method: The data were collected from 245 postgraduate students and faculties of all specializations attached to various dental colleges in Bangalore city. Participants were asked to fill a self-administered questionnaire containing 4 parts; (i) consists of data regarding demographic details, (ii) work characteristics, (iii) site of pain, intensity and made using a modified form of Nordic questionnaire, (iv) entails the triggering factors during the dental practice. The findings were compared across study subjects using T test, ANOVA and person correlation.
Result: The prevalence of musculoskeletal disorders was statistically different between men and women. The symptoms were higher in dentists practicing for more than 10 years. Shoulder pain and lower back pain were the most commonly reported complaints by dentists.
Summary and conclusion: The study found an overall high prevalence of musculoskeletal symptoms among dentists in Bangalore city. Measures for improving education, early diagnosis and use of proper ergonomic postures should be emphasized.

FC163
Management of Dental Healthcare Waste – Current Scenario
Deepika Popli, Aman Chowdhry, Keya Sircar, Vatchala Rani
Faculty of Dentistry, Jamia Millia Islmia, New Delhi, India

Aim and purpose: The present study was carried out to a certain awareness and practices adopted by various categories of health care workers in dental colleges with special focus on the bio medical waste generated in oral pathology and microbiology laboratories.
Materials and method: A pretested, structured questionnaire with 20 close ended questions in a researcher-administered survey format was carried out among doctors, lab technicians, attendants and housekeeping staff in the department of oral pathology in 3 dental colleges in Delhi/NCR Region. All the answers were kept confidential and were not depicted against their identity. The data so obtained from the study sample was compiled; systematized, tabulated and master table was prepared and was subjected to statistical analysis.
Result: On assessing the attitude/behaviour assessment towards bio medical waste it was observed that 65% health care personnel agreed that waste management requires steam work and no single team member is responsible. Assessment of level of knowledge of bio medical waste generation practices, hazards and legislation among health care personnel revealed that the attendants and housekeeping staff had meager knowledge, where as doctors/dentists and lab technicians were relatively better informed.
Summary and conclusion: The study highlighted significant discrepancies between existing practices and the guidelines issued by government of India. This data can be used by hospital authorities to formulate guidelines and develop effective strategies for improving healthcare waste management.

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Free Communication Session 7- Dental Treatment and Restorative Dentistry

Room F02 | 2014-09-12|14:00-14:30

FC164

Prevalence and Pattern of Gingival Recession Among Indian Population

Saurabh Shingnapurkar
Terna Dental College and Hospital

Aim and purpose: Gingival recession is a common manifestation of periodontal disease, and has many causative factors. In the current study, the prevalence and pattern of gingival recession was investigated among the Indian population. Also, the risk factors for the same were determined.
Materials and method: The study population consisted of 1100 patients. The amount of gingival recession was recorded. Demographic data such as age, sex, education, socio-economic status, adverse habits were recorded. Causes for gingival recession like frenal attachment, faulty restoration and tooth malposition were assessed. For statistical analysis, Chi-square test was used for non-parametric analysis and Student's *t*-test was used for parametric analysis.
Result: Gingival recession was observed on at least one dental surface in most of the individual analysed. The prevalence, extension and severity of recession increased with age. Mandibular incisors showed the highest prevalence and severity of gingival recession. We observed an association between gingival recession, sociodemographic and clinical parameters. Patients need to be educated about risk indicators for gingival recession as well as the preventive maneuvers that may be implemented to minimise its occurrence.
Summary and conclusion: Such high prevalence of gingival recession in adult patients demonstrates that dental professionals should provide attention to the clinical relevance of such alterations, as well as to the early identification and prevention of the etiologic factors for gingival recession.

Room F03 | 2014-09-12|12:30-13:30

FC165

Re-Mineralization Potential of Calcium-Phosphorous Based Agents, With/Without Fluoride, A Surface Micro-Analysis

Ruchika Roongta Nawal, Akhilesh Bhaskar, Sangeeta Talwar, Shivani Utneja
Maulana Azad Institute of Dental Sciences, New Delhi, India

Aim and purpose: This in-vitro study planned to qualitatively and quantitatively evaluate the re-mineralization potential of different calcium phosphorus based agents, alone and in combination with fluoride. The extent and nature of alterations in the enamel after demineralization; extent of re-mineralization; and differences in re-mineralizing potential of toothpastes was evaluated.
Materials and method: Human Permanent teeth were immersed in de-mineralizing solution for 96 h to produce artificial caries-like lesions. They were assigned five groups: Group A: Calcium phosphate tooth paste without fluoride, Group B: Calcium phosphate with fluoride (Clinpro), Group C: CPP-ACP (Tooth mousse), Group D: CPP-ACP with fluoride (Tooth mousse plus), Group E: Calcium Sodium Phospho-silicate (SHY-NM). The sections were placed in the pH cycling system (de-mineralization-re-mineralization cycle) for 10 days. Qualitative information of mineral variation before and after re-mineralizing treatments on de-mineralized dentin was detected by Energy Dispersive X-Ray (EDX) analysis. Micro-Raman spectroscopy was used to observe the spectral changes arising from hydroxyapatite of mineralized tooth tissue. The dentin morphology was investigated using Environmental Scanning Electron Microscopy (ESEM).
Result: All experimental groups showed significant re-mineralization, as shown by formation of deposits on enamel surface as compared to the control group. The EDX analysis showed increased amounts of Ca, P, Si and Zn in the enamel of the experimental group. Micro-Raman analysis showed an increase in mineral components post re-mineralization, in terms of crystallinity, mineral content and concentration. Group A showed least re-mineralization potential. Group B showed maximum re-mineralization followed by group E, D, and C.
Summary and conclusion: Calcium and Phosphorous when used in combination with Fluoride are more efficacious for re-mineralization than when Calcium and Phosphorous were used alone.

FC166

"Stressed Pulp"- A Diagnostic Dilemma in Restorative-Endodontic Treatment

L. Krishna Prasada
K V G Dental College & Hospital

Aim and purpose: The aim of this presentation is to discuss the dilemma of restorative dentist to diagnose the health of the pulp during the clinical examination.
Materials and method: The "stressed pulp" describes a vital dental pulp that has been subjected repeatedly with different insults, including operative trauma, iatrogenic damage, accidents, or other pathologic changes. The stressed pulp condition is a clinical concept and not a histologic entity. The stressed pulp condition should be considered prior to any extensive restorative dentistry or other dental procedures. Although a stressed pulp is usually asymptomatic clinically, it may deteriorate rapidly to a diseased or necrotic condition. Crown preparations, pin retained restorations, restorative re-treatments, cracks in the tooth structure, and poor systemic conditions can transform the pulp from a state of asymptomatic stress to a state of Pulpal disease. Determining Pulpal vitality is of utmost importance to the restorative dentist. The dilemma faced by the dentists were recorded during routine clinical examination of the patients, before restorative or Endodontic treatment commenced.
Result: It's really challenging from the dentist point of view to diagnose the stressed pulp state.
Summary and conclusion: So the stressed pulp condition is a clinical concep that describes the pulps that have received repeated previous insults, injury or trauma and survived with diminished responses and reduced potential to repair.

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FC167

III Legged Freak

Ishpreet Virdi[1], Jasmine Pattanayak[2]
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Aim and purpose: To evaluate the frequency of Radix in a population visiting a local Dental Hospital, as this additional root is a common cause for endodontic failure. Hence, this survey was conducted in the local Faridabad population to establish the incidence of occurrence of Radix.
Materials and method: A total of 500 patients/subject, who visited the Department of Conservative Dentistry and Endodontics, Targeted Hospital, Faridabad, Haryana were screened.
Inclusion Criteria:
(1) Above 18 years of age
(2) At least one Mandibular 1st or 2nd molar present for study.
(3) (A clearance was obtained from the Institutional Ethics Committee and individual informed consents.)
(4) Age, sex and race of the subjects were recorded to rule out non-Indian origin.
(5) Mandibular 1st and 2nd molars were evaluated using periapical RVG's with a minimum exposure at a 30° mesial and distal angulation.
Result: Prevalence of Radix cases was observed to be more in females as compared to males and unilateral occurrence more in males.
(1) Frequency of Radix was found to be higher on the left side and more in Mandibular 1st molar.
(2) Occurrence of mandibular 1st molar with 4 roots- confirmed by CBCT.
Summary and conclusion: The frequent occurrence of radix in Mandibular molars makes it essential for the dentist to anticipate and search all the canals during primary endodontic treatment.

FC168

Retention of a Composite Fiber Post System Using Three Different Luting Cements

Rahul Rao, Ashish Jain, Kavita Bade, Langade, Meenakshi Verma, Prajakta Rao
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Aim and purpose: The primary function of the post remains to provide retention to the final coronal restoration. As a rule, resin cements are recommended for luting fiber post sowing to their adhesive property. The aim of this study was to test the retention of composite fiber posts using three different Luting cements.
Materials and method: 30 freshly extracted maxillary central incisors were randomly assigned to 3 groups (n = 10). All the teeth were prepared with K files and filled with gutta percha using AH Plus sealer. Post space was prepared to No. 2 Peeso reamers to 12 mm depth and No. 2 Refor Posts were luted using Zinc phosphate (Group 1), Type 1 GIC (Group 2) and resin luting cement (Group 3) respectively. The specimens were then mounted in acrylic blocks and subjected to tensile force using an Instron machine in order to dislodge the post. The pullout bond strength values for various groups were analyzed statistically using Post hoc Dunn test and One way ANOVA.
Result: The pullout bond strength of Group 3 (resin cement) was superior to Group 1 and 2 but the difference was not statistically significant ($p > 0.05$).
Summary and conclusion: It can be inferred from this result that fiber posts may be luted effectively with conventional luting cements and that fiber posts are retained primarily by means of friction and by retentive features on the post surface. Bonding within the root canal is probably of secondary importance and of limited utility.

Room F04 | 2014-09-12|12:30-13:30

FC169

Management of a Complicated Crown Fracture of Three Permanent Maxillary Teeth by Fragment Reattachment Technique- A Case Report

Tarun Kumar Singh[1], H. S. Sharma[2]
[1]*Military Dental Center,* [2]*Affiliation missing*

Aim and purpose: Coronal fractures of the anterior teeth are a common form of dental trauma, affecting mainly children and adolescents. Reattachment of fractured tooth fragments appears as a valid alternative for conservative treatment in special situations involving the anterior teeth. The reattachment procedure can be improved with different adhesive techniques and restorative materials.
Materials and method: The reattachment of a fractured fragments in which complicated teeth fracture were managed by endodontic treatment, followed by Glass Fibre Posts were used along with dual cure resin cement. Using glassfiber post with composite core and applying the recent advances in adhesive techniques and materials, one can create a Monobloc, a multilayered structure with no inherent weak inter layer interfaces. Additionally, post-placement serves to retain the coronal portion via a friction bond, preventing dislodgement of the non-axial forces.
Result: Traumatic dental injuries are associated with biological, socio-economic conditions, psychological and behavioral factors. Complicated crown fracture involves enamel, dentin and pulp. Various Treatment modalities are available, depending upon the clinical, physiological and radiographic status of the teeth. The current case report describes the procedure of reattachment of tooth fragments of three permanent maxillary anterior teeth in a 48 year-old patient with extensive fracture, involving subsequent pulp trauma.
Summary and conclusion: The fragment reattachment technique offers the advantages like cost effectiveness, a viable option for maintenance of esthetics and the conservation of natural tooth structure.

FC170

Chair Side Veneering: A Step by Step Approach for Restoring Badly Broken Down Primary Anteriors

Grover Nikhil
Sharda University College of Dental Sciences

Aim and purpose: Restorations for primary anterior teeth have always been a challenge for the dentist for many decades. Primary

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anterior teeth that require extensive restorative therapy due to caries, trauma or developmental defects can present confusing and challenging problems to the dentist to achieve satisfactory aesthetics and efficiency in placement. The current scientific presentation will outline a case in which a step by step method for veneering conventional primary anterior stainless steel crowns with a composite resin veneer will be outlined.

Materials and method: To increase the retention of the resin to the facial surface of stainless steel crown, cross-cuts using a tapered fissured bur were made. Another technique commonly used for increasing the retention is to sandblast or use an intraoral sandblaster (MicroetcherIIA danville materials) on the facial surface prior to resin veneering The unsightly color of the stainless steel was masked using opaque pit and fissure sealant (Fissurit F, voco) or dual cure resin cement (Fluorocore, dentsply) followed by veneering with a light cure composite resin (FiltekTM, Z250, 3M ESPE).

Result: An esthetically durable restoration for badly broken down primary anterior teeth with preoperative postoperative pictures as well as detailed pictures of each of the steps involved.

Summary and conclusion: This case report provides an overview of restorative modalities for restoring primary anterior teeth along with an innovative approach to make the chair side veneering of primary anterior crowns less intensive. It also provides a step by step method for restoring primary anterior teeth affected by caries or trauma with a simple cost effective chair side technique that is durable and aesthetically acceptable.

FC171

Microleakage Evaluation of Nano Ionomer and Nano Composite Immersed in Beverages

Shitoot Abhinav Pradeep
Terna Dental College and Hospital

Aim and purpose: To evaluate Microleakage of Nano ionomer (3MESPE Ketac™ N100 Light cured Nano ionomer Restorative) and Nanocomposite (3M ESPE Filtek™ Z350 XTUniversal Restorative) restorations, immersed in fruit drink, fresh fruit juice and soft drink.

Materials and method: Approval was taken from the Institutional Ethics Committee. 80 extracted human maxillary premolar teeth were used for the study. Class V cavities were prepared and restored with Nanocomposite on buccal surface and Nano ionomer on the palatal surface. The teeth were thermocycled following the restoration. The experimental groups comprised of 72 teeth (3 groups comprising 24 teeth each for fruit drink, fresh fruit juice and soft drink), while remaining 8 formed the control group. Each of experimental group was further divided into three subjects.

Result: The three beverages used in the study affected the Microleakage of both restorative materials significantly. The teeth showed statistically significant Microleakage as the immersion regime increased. Soft drink caused highest Microleakage.

Summary and conclusion: The current study highlights the detrimental effects of excessive consumption of beverages on existing restorations. It can be concluded that frequent exposure to low pH beverages is directly related to the marginal integrity of the materials studied.

FC172

Paediatric Conscious Sedation: Midazolam Drops vs. Spray

Mohita Marwaha
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Aim and purpose: Fear, anxiety and early developmental stage may make it difficult for a child to cooperate with necessary dental procedures. Sedation when coupled with other behaviour shaping procedures shows great promise in managing highly anxious pediatric patients. Midazolam has been effectively used for providing conscious sedation in pediatric dentistry. The oral route of administration is the most popular among pediatric dentists; however, sometime the child may refuse to accept the medication because of bitter taste. Parenteral administration is a major cause of anxiety, discomfort, and trauma in children.

Materials and method: 35 children aged 2–6 years with Grade I and II Frankl behaviour rating scale were selected for various dental procedures under LA. Initially, behaviour shaping procedures were used. Hereafter, Midazolam sedation was done and scoring for acceptance of drug and behaviour after sedation using Houpt criteria was recorded. The data was compiled and statistically analysed to assess the difference in Houpt scores with drops and spray.

Result: A statistically significant improvement was seen in the Houpt scores before and after drug administration ($p < 0.001$).

Summary and conclusion: Midazolam drops and spray can be successfully used for Paediatric conscious sedation.

Room F05 | 2014-09-12 | 12:30-13:30

FC173

Play Safe-Variants of Mouth Guards-Awareness Among Dental Professionals

M. V. R. S. Jayavardhini
SVS Institute of Dental Sciences, Mahbubnagar, Andhra Pradesh, India

Aim and purpose: Dentoalveolar injuries occur with increasing frequency in preschool, school age children and young adults which comes under pedodontic fraternity. Therefore the usage of the protective wear like the headgears, mouth guards and helmets can be the means to prevent this trauma. The knowledge, fabrication and usage of mouth guards are scanty in our country. So we as dental professionals with an insight of dental traumatic injuries have the responsibility of incorporating effective means to prevent these injuries. The usage of mouth guards is one such type of preventive measure.

Materials and method: A study was conducted in the department on 500 people which included general dentists, pediatric dentists and dental students evaluating the awareness about the knowledge, fabrication and usage of mouth guards through a questionnaire.

Result: 13% people of sample do not have the knowledge regarding mouth guards, 29% have not seen them, 82% do not know the type of mouth guards, 86% do not know about their fabrication, 96% people feel it as essential aid in preventing dental trauma, 84% gave the reason for not using them as lack of

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awareness and 97% people feel the dentist has a prime and important role in increasing awareness on their usage and fabrication.
Summary and conclusion: We generate world class sports persons; it is time to provide world class protection for them. As pediatric dentists it is our role to disseminate the knowledge about prevention of trauma.

FC174
Local Anesthesia Delivery Systems
B. A. L. Bikash
SVS Institute of Dental Sciences, Mahbubnagar, Andhra Pradesh, India

Aim and purpose: To deliver painless local anesthesia in the oral cavity using modern techniques.
Materials and method: Methods used are: Electronic Dental Anesthesia (EDA), Intraoral Lidocaine patch (Denti Patch), Jet Injection, Iontophoresis, Eutectic Mixture of Local Anesthesia (EMLA), computerized controlled local anesthesia Delivery Devices (CCLAD).
Result: Thus using the above methods local anesthesia is delivered painlessly.
Summary and conclusion: Technological innovations have provided with methods of delivering local anesthesia painlessly. Local anesthesia forms the back bone of pain control techniques, as well as to create pain free dental practice in dentistry.

FC175
Maximal Mouth Opening in Indian Children Using a New Method
Arun Kumar, Anita Hooda, Samir Dutta
PGIDS Rohtak, Haryana

Aim and purpose: Measurement of normal maximum mouth opening (MMO) in children is an important diagnostic criterion in the evaluation of the stomatognathic system. The aim of this study was to determine the MMO in children from the Indian population, of age 6–12 years, and to examine the possible influence of age, gender, height, and body weight on MMO. Assessment of MMO was accomplished with a modified Vernier Caliper, by measuring the distance between the incisal edges of the upper and lower incisors during maximal mouth opening up to the painless limit.
Materials and method: The study consisted of 856 children from various schools in the city of Rohtak (Haryana), India, who were randomly divided into three groups based on their age: Group 1: Children of age 6–8 years; Group II: Children of age 8–10 years; Group III: Children of age 10–12 years. For each subject three readings were recorded in millimeters and the mean value was considered. The age, gender, height, and body weight of each child were also recorded at the same time.
Result: The results of the present study revealed that MMO in Indian children were 46.04, 48.53 and 52.38 mm for boys and 45.95, 47.27 and 52.05 mm for girls, in the age groups of 6–8, 8–10 and 10–12 years, respectively.
Summary and conclusion: Significant associations were observed in between age, height, body weight, and MMO. However, no gender difference was observed.

FC176
Long Term Management and Follow Up of Generalized Odontodysplasia Case
Mostafa, Ghada Hamza, Inas Mostafa, Maha Abdelfattah, Moustapha Abdel Rahman, Nermeen Elmotaz Bellah
National Research Center, Cairo, Egypt

Aim and purpose: Presentation of a case suffering from generalized Odontodysplasia, and suggestive transitional treatment with long term follow up to the age of puberty.
Materials and method: In 12 years old boy with generalized Odontodysplasia. The treatment plans were root canal treatment of non vital teeth and crowning of newly erupted malformed teeth.
Result: After 6 years follow up, patients had no significant complains. The radio graphic examination revealed the completion of root and narrowing of the pulp chambers.
Summary and conclusion: Transitional management of young cases of Odontodysplasia is mandatory and successful to preserve function and esthetics as well as teeth and bone for final restoration.

Room F10 | 2014-09-12|12:30-13:30

FC177
Evaluating Success Rate With Different Obturation Techniques in Primary Molars
Ritika Bansal, Abhishek Dhindsa, Satyawan Damle
MM College of Dental Sciences and Research

Aim and purpose: The purpose of this study was to compare three methods of obturation in primary second molars.
Materials and method: A total of 21 primary Mandibular second molars (63 canals) in 5–9 year old children were prepared and obturated with three different methodologies. GpI (endodontic plugger- n = 7), gp II (reamer- n = 7) and gp III (lentulospiral – n = 7). The study was approved by the Ethics Committee of the Institution. Results obtained were analysed by chi-square, Kruskal–Wallis and Mann–Whitney *U*-tests.
Result: Results indicate that there were significant differences between all groups in the length of obturation ($p > 0.01$) and presence of voids ($p < 0.001$). The lentulospiral enjoyed better success rate as compared to reamer and endodontic plugger group for both length of obturation and voids. The lentulospiral group showed 98% success rate as compared to reamer group showing 82% and endodontic plugger showing 76%success rate.
Summary and conclusion: The Lentulo spiral was effective in obturating root canals in primary molars in terms of length of filling with the lowest number and size of voids.

FC178
Evaluating Biodentine and Calcium Hydroxide as Root End Filling Materials
Sumit Singla, S. G. Damle, Sumit Singla
Maharishi Markandeshwar College of Dental Science and Research Mullana

Aim and purpose: The purpose of this study was to evaluate Calcium hydroxide and Biodentine as a root end-filling material. The

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working hypothesis was: both the materials are effective in root end closure and are bio-compatible.
Materials and method: The protocol comprised of inclusion of 20 young permanent teeth in 20 children, in the age group of 8–16 years (10 in each group). After extirpation of necrotic pulp tissue, bio mechanical preparation was carried out, followed by irrigation and disinfection of root canal. Then calcium hydroxide was injected by syringe and Biodentine was placed apically (as per the instructions of the company). Patients were called at the intervals of 3 and 6 months for evaluation.
Result: The results revealed that both the materials were bio compatible. The success rate in Biodentine was seen to be 95% as compared to calcium hydroxide (90%) in barrier formation. No post-operative pain or tenderness, swelling and/or intraoral sinus was reported in both the groups.
Summary and conclusion: Biodentine and Calcium hydroxide can be used efficiently for root end closure. Considering the success in root end formation, Biodentine was seen to be better material of choice as compared to calcium hydroxide.

FC179
Rewarding the Immature by Retrieving and Regenerating
Anshula Deshpande, Chirag Macwan
K. M. Shah Dental College and Hospital, Sumandeep Vidyapeeth

Aim and purpose: In pediatric dental practice it is unusual and alarming to come across foreign bodies lodged in the root canal. Often the child patient having pain in traumatized tooth get indulged in self-inflicted injury as was found in the present case.
Result: A 12 year old boy presented with fractured upper left central incisor. On radiographic examination unusual radiopaque foreign bodies in immature tooth root canal was revealed. So, retrieval of foreign bodies and regenerative endodontics was planned for the involved tooth.
Summary and conclusion: The outcome of this case report suggests reasonably good consequence at one year follow up with this conservative regenerative treatment approach. This approach preserves the vitality of the dental pulp stem cells and create a suitable environment for pulp regeneration, resulting in the completion of root maturation. Regenerative endodontics with continued root growth may reduce the risk of fracture and premature tooth loss associated with traditional 'apexification procedures where the root remains thin and weak. Important message that this case report proposes is that dentists should recognize the potential of regenerative endodontics in the treatment of necrotic, immature teeth.

Room F11 | 2014-09-12|9:30-12:10

FC180
Discomfort Following Dental Procedures in Children With Early Childhood Caries Aged 3–6 years
Saritha Patel, Abhishek Sinha, I. G. Kanimozhi, M. S. Muthu
Sri Ramachandra University, Porur, Chennai, India

Aim and purpose: The Purpose of the study was to analyse the discomfort following dental procedure in children with early childhood caries aged 3–6 years.
Materials and method: Three hundred and forty children with early childhood caries aged 3–6 years were selected from the department of pediatric dentistry, Sri Ramachandra University appointed for restorative, surgical and preventive procedures. Each child's discomfort was evaluated after the procedure using Wong-Baker Faces pain rating scale, by the children.
Result: After using Wong -Baker FACES Pain rating scale, pain scale showed higher in invasive procedure i.e. surgical procedures when compared to Non-invasive procedure i.e. preventive and restorative procedure. This will be proved in our study.
Summary and conclusion: Post operative discomfort and analgesic use may most commonly occur in children after the dental procedure. This Post operative discomfort may be more commonly encountered during invasive procedure i.e. surgical, when compared to the non invasive procedure i.e. restorative and preventive. This study highlights about this postoperative discomfort in children aged 3–6 years.

FC181
Remineralization Potential of Cheese and Tooth Mousse on Demineralized Human Enamel – An In Vitro Study
Ishani Vakil, Amitha Hegde, Vabitha Shetty
A B Shetty Memorial Institute of Dental Sciences

Aim and purpose: It is to compare the remineralization potential of cheese and tooth mousse on demineralized tooth surface.
Materials and method: Baseline surface microhardness of 30 sound enamel sections (4 mm*4 mm*1 mm) was measured on the labial surface using a VICKERS indentor. All enamel sections were placed in demineralizing solution for 4 days and subjected to surface microhardness test again. Enamel sections were then immersed in cheese and tooth mousse for 21 days. Surface microhardness was reevaluated on the 7th, 14th and 21st day of remineralization.
Result: In the present study, tooth mousse showed an increase in remineralization upto 60.18% while cheese also showed remineralization potential. Statistically significant remineralization potential (p-value < 0.001) was seen in both cheese and GC tooth mousse.
Summary and conclusion: Cheese showed remineralization which was less in comparison to GC tooth mousse but still it had the potential to cause significant remineralization on a demineralized surface. Milk products which are the basic necessities should be consumed by children who will also prevent incipient caries and cause remineralization of any white spot lesion. The major advantage of any protective agent found in the milk or milk products are that it would be perceived as a natural product, and also recommended on account of its nutritional properties, chiefly as a source of calcium and phosphate. Hence my study concludes that instead of using expensive products it is better to go for dairy products which are easily available to children on a daily basis.

FC182
"Infant Oral Care: A Survey of Dentists Practicing at Delhi, India
Ruchi Nagpal
Sudha Rustagi College of Dental Sciences and Research Center, Faridabad, Haryana, India

Aim and purpose: Changing trends in occurrence of dental caries has made Early Childhood Caries a growing dental public health

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problem in India. Small number of pediatric dentists cannot meet the demand of the entire infant population. General practitioners could play a crucial role in preventing ECC by conducting early examination of infants. Hence the present study was conducted with an aim to assess knowledge and practices of general dental practitioners regarding infant and early childhood oral health care in Delhi.

Materials and method: The sampling frame was comprised of general dental practitioners practicing in Delhi. Those who were specialized in pediatric dentistry were excluded from the survey. Data was collected using a validated questionnaire. The survey consisted of different sections, including early childhood oral health profile and practitioners knowledge of early childhood oral health. Descriptive statistics and bivariate analyses were done to analyze the data.

Result: A total of 192 (76.8%) of the 250 practitioners responded. Overall, infants and preschoolers constituted <10% of patients in the corresponding practices. Not even half of participants were aware of professional organizations recommendation about the timing of children's first visit to the dentist. On average, these participating dentists from Manitoba thought children should visit the dentist by 3 years of age.

Summary and conclusion: A significant number of dentists in Delhi are still unaware of the recommendation that children should first visit the dentist by 12 months of age.

FC183

Hypo Mineralized Primary Second Molars: Prevalence, Clinical Presentation in Indian Children

Neeti Mittal

Santosh Dental College and Hospital, Ghaziabad, Uttar Pradesh, India

Aim and purpose: To report on prevalence and clinical presentation of hypo mineralized primary second molars (HPSMs) in Indian school children as no data is available for this population.

Materials and method: A cross-sectional observational study recruiting a stratified random sample of 978, 8–10 year old school children was carried out in Gautam Budh Nagar, Uttar Pradesh, India. Diagnosis of enamel Hypomineralization was done using European Academy of Pediatric Dentistry (2003) criteria by a single experienced, well trained and calibrated examiner. Only primary second molars (PSMs), first permanent molars (FPMs) and permanent incisors (PIs) i.e. index teeth as per EAPD 2003 criteria were scored. Surfaces examined included occlusal, buccal, palatal/lingual. Data were analyzed to report on prevalence, defect types, location, distribution and extension of enamel Hypomineralization in PSMs as mean ± SD and/or number (%age). Analyses were also conducted to evaluate differences in clinical presentation of HPSMs with or without concomitant presence of hypo mineralized FPMs using *t*-test and chi square test.

Result: An overall prevalence of 5.62% (55/978) was reported for HPSMs in study population. A total of 2.40 ± 1.029 PSMs/subjects were reported to be hypo mineralized. A total of 32.73% (18/55) of affected subjects had concomitantly hypo mineralized FPMs.

Summary and conclusion: Prevalence of HPSMs was 5.62% in study population while approximately 1/3rd of affected subjects presented with concomitant Molar Incisor Hypomineralization.

Room F12 | 2014-09-12 | 12:30-13:30

FC184

Buffered 2% Lignocaine for Inferior Alveolar Nerve Block in Children

Radhika Chopra, Garima Jindal, Meera Sandhu, Vinod Sachdev

I.T.S C.D.S.R Muradnagar, Ghaziabad, India

Aim and purpose: To evaluate whether buffering of lignocaine reduces the pain experience during inferior alveolar nerve block in children.

Materials and method: 30 patients (aged of 5–15 years) were selected who required inferior alveolar nerve block to be administered on both sides. Approval from the Institutional Ethics Committee was obtained and an informed written consent was signed by the parents. 15 random numbers were generated and these patients were assigned to receive buffered 2% lignocaine on 1st appointment and unbuffered 2% lignocaine on the next appointment scheduled after 1 week; and vice versa for the rest of the patients. Buffered lignocaine was freshly prepared by mixing 8.4% sodium bicarbonate with 2% lignocaine in 1:10 proportion. A double blind design was planned for the study wherein a single researcher was responsible for loading the syringe for each patient, a second researcher who was blinded to the type of anesthetic agent administered the block on each appointment and two other researchers who were also blinded to the agent used recorded the SEM (sound, eye, motor) scale. After administration of block, the patient was asked to record the HP- VAS scale. The onset of anesthesia was assessed based on the clinical signs and gingival probing.

Result: Mann–Whitney *U*-test was used to analyse the scores. Buffered lignocaine did not statistically result in lower pain scores or faster onset as compared to unbuffered formulation.

Summary and conclusion: Buffering of lignocaine was not found to be beneficial in reducing pain in the pediatric patients.

FC185

Prevalence of Developmental Anomalies in School Children of Navi Mumbai

Farhin Katge

Terna Dental College and Hospital

Aim and purpose: The aim of the present study was to determine the prevalence of dental anomalies in the school children of Navi Mumbai.

Materials and method: Approval was taken from the Institutional Review Board – Ethics Committee. A total of 2707 school children of age ranging between 6 and 14 years were examined clinically for developmental anomalies of teeth. The study was carried out within duration of 3 months. Two operators were trained to identify the developmental anomalies. Clinical examination was done using mouth mirror and probe under natural light. The findings were recorded in a proforma and finally tabulated in an excel sheet. Data analysis involved descriptive statistics using SPSS 16.0 (Statistical Package for Scientific Studies).

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Result: The anomalies recorded in the present study with their prevalence were: Enamel hypoplasia (4.3%), Molar Incisor hypoplasia (1.9%), Fusion (0.85%), Peg lateral (0.4%), Supernumerary tooth (0.25%), Ankyloglossia (0.22%), Dental fluorosis (0.2%), Amelogenesis imperfecta (0.11%), Geographic tongue (0.11%), Generalised microdontia (0.04%), Talon's cusp (0.08%) and Dentinogenesis imperfecta (0.08%).
Summary and conclusion: (i) In the present study, the overall prevalence of developmental anomalies was found to be 8.57%. (ii) The results of the study will be helpful to chalk out a preventive program and treatment planning for the children in Navi Mumbai.

FC186
Effect of Probiotics and Fluoride Varnish on Salivary Levels of *Streptococcus Mutans* in Children and In Vivo Study
Garima Khandelwal
Private Clinical Practice in Khandelwal Dental Hospital

Aim and purpose: Oral infections like dental caries and periodontal diseases constitute some of the most common forms of diseases in humans. Keeping in mind the probable role of Probiotics and fluoride in preventing dental caries, this in vivo study was carried out in 2012.
Aim and objective: (i) To evaluate changes in mutans streptococci counts in saliva after short term Probiotics intervention. (ii) To evaluate changes in mutans streptococci counts in saliva after topical application of fluoride varnish.
Materials and method: 45 children with medium (class 2) and high (class 3) caries activity were selected and divided into 3 groups.

Group I – Control group.
Group II – Children undergoing fluoride varnish treatment. 5% NaF varnish containing 22,600 ppmF
Group III – Children receiving Probiotics BB12 chewable tablets.

Midmorning saliva samples were collected and inoculated on MSB agar plates, intubated and *S. mutans* colonies were counted.
Duration of the study was 6 weeks; which was evenly divided into three phases: baseline, intervention and post-treatment period: each phase consisting of two weeks.
Summary and conclusion: Statistically significant reduction in salivary mutans streptococci immediately after application of fluoride varnish, though a decline in reduction is seen after 4 weeks of application. Statistically significant reduction of salivary mutans streptococci immediately after consumption of Probiotics tablets containing bifidobacteria BB12 lactis. Further reduction in the salivary mutans streptococci counts during post follow up period signifying the delayed effect of Probiotics on mutans streptococci.

FC187
Smart Anticariogenic Lunch Box
Rutuja Kand
School of Dental Sciences

Aim and purpose: To assess the carcinogenicity of the lunch box content of Karad school going children: 'Smart Anticariogenic Lunch Box.
Materials and method: Total of 150 school going children from Karad English medium school was selected and children only from the school where in homemade lunch box are permitted were selected for study. Consent letter and initial research related queries was provided to all children, parents and school teachers and administer regarding the study. Before the lunch break each student's lunchbox was physically viewed to identify the main foods and beverages consumed at primary school to determine difference in the consumption pattern between children. The same procedure was repeated to evaluate for a time period of 30 days to know the eating trends and patterns for this period. Each food and beverages was assessed and tabulated to know the carcinogenicity of food.
Result: The result stated that chapatti was the most frequent consumed food and it was about 30%, biscuit 22%, fruits 5%, milk 10% and tea/coffee 25% and junk food 20%.
Summary and conclusion: As per the results the following changes in dietary modification can be done to prevent the obesity, carcinogenicity, and energy rich nutritious balanced diet: Increase the intake of fruits that is 2–4 servings, water, fibrous green vegetables 3–5 servings, reduce the intake of fermentable carbohydrate food and Milk 2–3 servings, meat 2–3 servings and grains 6–11 servings.

Room F13 | 2014-09-12 | 12:30-12:40

FC188
Which is the Safe Bet: Inhalational or Oral Sedation
Aum Joshi[1], Amitha Hegde[1], Manju Gopakumar[1], U. S. Raveendra[2], Sripada Mehandale[2]
[1]A B Shetty Memorial Institute of Dental Sciences, [2]K S Hegde Medical Academy Mangalore

Aim and purpose: To compare the safety and efficacy of Nitrous oxide and oral Ketamine with oral Midazolam for sedation in children for minor dental procedures.
Materials and method: 20 patients were selected (Age group 5–10 years) based on inclusion criteria decided. Patients were divided in 2 Groups of 10 each – Nitrous Oxide (NO) and Ketamine–Midazolam (KM) group. Informed consent was taken. Nil Per Oral (NPO) guidelines were followed. The drug was delivered to the patients according to the group. Procedures included Restorations, Extractions and Pulp Therapy. The heart rate, blood pressure, oxygen saturation was monitored continuously. Also the Ramsay sedation score was recorded before the procedure, every 5 min till the procedure was complete. The Aldrete recovery score was calculated at the end. The scores were compared in both the groups by statistical analysis.
Result: The level of sedation achieved in NO group was almost similar to KM Group (p-value). The blood pressure and heart rate was high in KM group than NO group. The level of recovery was faster in NO group then KM Group (p-value < 0.001). Postoperative complications were more in KM group.
Summary and conclusion: The sedation achieved by both the groups was almost the same but the recovery in Nitrous Oxide group was much faster than the oral Ketamine and Midazolam combination hence use of Nitrous Oxide with less post operative

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complication can be recommended for children over Oral Midazolam and Ketamine combination.

Room F15 | 2014-09-12|11:30-12:30

FC189

Dentine Caries Excavation by Current Clinical Techniques

Pramod Kumar
SVS Institute of Dental Sciences, Mahbubnagar, Andhra Pradesh, India

Aim and purpose: The aim is to spread awareness of some of the current clinical techniques to excavate dentinal caries.
Materials and method: The methods are mechanical and non-mechanical, rotary and non-rotary. The materials: Dental hand pieces/burs, manual excavators, air-abrasion, air-polishing, ultrasonication, sono-abrasion.
Result: Since the invention and application of rotary instruments, the operative treatment of carious lesions has often resulted in considerable removal of tooth structure (preserving the healthy tooth structure).
Summary and conclusion: Newer techniques for removal of carious dentin have been developed in an attempt to minimize this excessive tissue loss. By this technique, we can conclude that removal of caries has become easier.

FC190

Minimum Intervention Dentistry-The Current Scenario

Ramesh Bharti
Faculty of Dental Sciences, King George Medical University, Lucknow, U.P., India

Aim and purpose: The purpose of this paper is to discuss various methods of minimum intervention dentistry in restoring the oral health.
Materials and method: Minimum intervention dentistry (MID) is the modern medical approach to the management of dental caries by utilizing caries risk assessment, and focusing on the early prevention and interception of disease. The focus of the dentist is moving to achieve maximum intervention, with minimal invasive treatments. There are four core principles of MID (i) Recognition – early identification and assessment of potential caries risk factors through lifestyle analysis, saliva testing and using plaque diagnostic tests; (ii) Reduction – to eliminate or minimize caries risk factors by altering diet and lifestyle habits.
Summary and conclusion: Minimum intervention is concerned with preventing disease rather than restoring teeth and attitudes towards remuneration and financial rewards for restorative operative intervention.

FC191

Efficacy of MTA and Perioglas as Direct Pulp Capping Agents on Teeth With Healthy Pulp and Reversible Pulpitis

Aparajitha Bhamidi
The Oxford Dental College and Research Centre, Bengaluru, India

Aim and purpose: To evaluate the efficacy of MTA and Perioglas when used as direct pulp capping agents on teeth with healthy pulp and teeth with reversible pulpitis.
Materials and method: Patients with age ranging between 18 and 30 were selected for the study. After obtaining informed consent, 20 teeth that have been indicated for extraction (orthodontic extraction indicated for healthy pulp and non-strategic and non functional 3rd molars for reversible pulpitis) were included in the study. MTA and Perioglas were placed in 10 teeth in each group (5 normal and 5 reversible pulpitis) in a randomized manner and were observed clinically for 45 days. They were then extracted, fixed, processed and histologically evaluated for pulpal response and dentine bridge formation by an oral pathologist using Genoptic prose search software under a pentahead research microscope, and photomicrographs were obtained.
Result: A favourable response was seen with MTA on normal and reversibly inflamed pulps while in cases restored with Perioglas, patients presented with unusual symptoms, histologically hyperemic pulp with exaggerated inflammation was noted leading to questionable prognosis because of the material. The gradings were submitted for statistical evaluation with $p < 0.05$.
Summary and conclusion: Within the limitations of this study it can be proven that MTA can be used on normal and reversibly inflamed pulp also for successful direct pulp capping. While Perioglas appears to have limited usage as a DPC agent on either cases.

FC192

Indirect Pulp Treatment of Young Permanent Molars Utilizing Photo-Activated-Oral-Disinfection

Mervat Rashed, Dalia Moheb, Samah Awad
Faculty of Oral and Dental Medicine, Cairo University

Aim and purpose: This study aimed to evaluate the Photo-Activated-Oral-Disinfection (PAD) in indirect pulp capping of vital young permanent molars with deep caries.
Materials and method: In this case series study, healthy children aged (6–8 years old) with deep caries in vital lower first permanent molars without preoperative signs and symptoms of irreversible pulpits were treated by indirect pulp capping using PAD. Treated teeth (n = 20) were subjected to minimal caries removal until hard dentin was encountered, followed by the application of PAD. Teeth were finally sealed by appropriate composite restoration. The teeth were assessed clinically and radiographically assessed after 3 and 6 months post operative. Absence of adverse clinical postoperative signs and symptoms in terms of pain, sensitivity and swelling constituted clinical success criteria. Whereas, absence of radiographic evidence of internal, external root resorption or other pathologic changes constituted radiographic success criteria.
Result: All treated cases showed clinical and radiographic success in the follow up period. Neither clinical nor radiographic failures were encountered in the 20 treated cases.
Summary and conclusion: Utilizing PAD could provide a successful minimally invasive approach in the management of deep caries in vital young permanent teeth by indirect pulp capping procedures. It is relatively a simple procedure which could be inserted into treatment routine.

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Free Communication Session 8- Oral Surgery and Oral Medicine

Room F10 | 2014-09-12|14:30-15:30

FC193

Brackets and Bondable Reinforcement Ribbon for Maxillomandibular Fixation: A Novel Technique

Rohan Dhawan, Shivani Mahajan, S. P. S. Sodhi
Dasmesh Institute of Research and Dental Sciences

Aim and purpose: To evaluate clinical and radiological results of using orthodontic brackets and bondable reinforcement ribbon for maxillomandibular fixation in treatment of maxillomandibular injuries.
Materials and method: The present study included 20 patients who required maxillomandibular fixation as part of their treatment for maxillofacial injuries after due permission from ethics committee of the institute. Patients in age group of 16–55 years irrelative of sex were included in study. IMF using orthodontic brackets, bondable ribbon and elastic chain was done and patients were followed up for 6 months. Occlusion, inter incisal mouth opening, loe and silness gingival index, incidence and site of debonding, and any perforating injury to operator were assessed. The relation of observed parameters with type and site of maxillofacial injury was also assessed during the study.
Result: Satisfactory occlusion was achieved in all patients 8 weeks postoperatively, mean mouth opening achieved at the end of 2 months was 40.3 mm, mean gingival index was below 1, incidence of debonding was 18.33% and incidence of glove perforation was 5%.
Summary and conclusion: Application of bondable ribbon and orthodontic brackets behaves more like a customized arch bar. Satisfactory and uneventful healing with excellent mouth opening and postoperative occlusion was achieved in all patients. This fixation appliance reduces the incidence of perforating injuries to minimum, leaves the periodontium untouched, is comfortable, hygienic, aesthetic and improves the social acceptability of the patient.

FC194

Facial Injuries in Traumatized Patients: Initial Experience in Rural Courtyard

Sunita Malik, Gurdarshan Singh
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Aim and purpose: Injuries to the face, by their very nature, impart a high degree of emotional, as well as physical trauma to patients. This study was carried out to determine the incidence of facial injuries, clinical management and associated complications.
Materials and method: A prospective Medical institute based study of facial injury patients was carried out at newly started at a targeted college, from September 2011 to February 2014 (30 months). Data regarding incidence, age and sex distribution, causes, types and site of injury, treatment modalities and trauma associated complications were collected and analysed.
Result: A total of 718 trauma patients were studied. Males outnumbered females by a ratio of 3.2:1. Age range was 9 months to 75 years with the peak incidence in the age-group 18–34 years. Most injuries were caused by Road-Traffic accidents (73.6%), followed by assault and falls in 11.4% and 7.6% respectively. Soft tissue injuries and Mandibular fractures were the most common type of injuries. Head/neck (52.1%) and limb injuries (26.8%) were the most prevalent associated injuries. Surgical debridement and soft tissue suturing (95.1%) was the most common surgical procedures. Closed reduction of maxillofacial fractures was employed in 46% of patients and Open reduction and internal fixation was performed in 45% of cases. Complications occurred in 2.4% of patients. The mean duration of hospital stay was 10.32 ± 6.44 days.
Summary and conclusion: This study highlights the importance of Dental surgery department along-with other disciplinaries in the management of facial injuries.

FC195

A 5-year Follow-Up of an Immediate Implant into Cystic Area With Bone Graft and Guided Bone Regeneration

Rafaa Swesi
International Specialized Medical Center Tripoli, Libya

Aim and purpose: Advanced bone regeneration techniques make it possible to place implants with teeth that require extraction due to bone loss. Much literature exists for the immediate replacement of extracted teeth with implants with the purpose of maintenance of alveolar bone volume and therefore limiting future staged placement of implants. In addition, there is a considerable advantage to the patient to have immediate implant surgery that expedites completion of treatment
Materials and method: The current clinical case is a 56-year-old male without any relevant past medical history underwent an extraction of a badly decayed tooth 36 and replacement by an implant. An OPG determined a 2×2 cm periapical radiolucency that confirmed by biopsy to be a radicular cyst. The tooth was extracted and the cyst was enucleated intact followed by placement of an implant plus bone graft and GBR
Result: A 4 year follow up showed neither evidence of recurrence nor any bone resorption. The advantage of the chosen treatment plan was the relative comfort of the patient, especially one-stage surgery
Summary and conclusion: It can therefore be concluded that the result of the present case is consistent with similar cases suggesting that implants can be placed into extraction sockets associated with a cyst that are supported by bone graft and GBR.

FC196

Neonatal Mandibular Distraction Osteogenesis: A Technique for Treating Neonates With Micrognathia and Risk of Respiratory Obstruction

Pravesh Mehra
Lady Hardinge Medical College and Hospitals

Aim and purpose: Glossoptosis Upper airway obstruction and feeding difficulties are the main concerns related to the pathology.

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Mandibular distraction should be considered a treatment option (when inadequate results with other treatment are delivered).

Materials and method: Two neonates of the ages of 2 weeks and 2 months with severe micrognathia and airway obstruction were treated with extraoral Mandibular Distraction Osteogenesis (MDO). The patients underwent fibroscopic examination of the upper airway and a radiographic imaging and/or computed tomography scans to detect malformations and to confirm that the obstruction was caused by posterior tongue displacement. All patients were evaluated by a multidisciplinary team. Indications for surgery included frequent apneic episodes with severe desaturation (70%). Gavage therapy was employed in all patients since oral feeding was not possible. The one tracheotomy patient was 2 months old, and the distraction procedure was performed after the other therapies had failed. Both the neonates were treated with bilateral external Mandibular distraction.

Result: The resolution of symptoms was obtained in both the patients. Patients were discharged when the endpoint was obtained: symptoms and signs of airway obstruction were resolved, and maxillomandibular relationship improved. During the follow-up, no injury to the inferior alveolar nerve was noted. However, scarring was significant as they were treated with external devices.

Summary and conclusion: Mandibular Distraction Osteogenesis is a good treatment option in solving respiratory distress when other procedures are failed in neonatal/pediatric patients with severe micrognatia.

Room F11 | 2014-09-12|14:30-16:30

FC197

Comparative Evaluation of Egg Shell and Bovine Derived Hydroxyapatite in Healing of Maxillary Bone Defects – A Clinical Study

Vivekanand Kattimani, L. Krishna Prasad
Sibar Dental College Guntur

Aim and purpose: The aim of this clinical study is to evaluate and compare the efficacy of hens egg shell derived hydroxyapatite (EHA) and commercially available bovine derived hydroxyapatite (BHA) in bone regeneration of human maxillary cystic bone defects.

Materials and method: Patients aged l5–45 years enrolled in this study with periapical cyst after Clinical and radiological examination. Grafting with EHA and BHA has been done in 20 patients (10 patients in each group) following cystectomy. Grafted bone defects were analyzed for bone healing and compared using observer strategy (computerized densitometry and follow-up digital radiographs). Follow-up radio graphs were obtained immediately after surgery followed by 1, 2, 3 months to assess the efficacy of EHA and BHA in enhancement of bone regeneration.

Result: By the end of 8th week, the defects grafted with EHA showed increased bone density compared to BHA indicating that the osseous regeneration of the bone defect filled with egg shell derived Hydroxyapatite is significant than BHA.

Summary and conclusion: EHA is a versatile novel bone graft substitute with promising results. Because of its cost effectiveness, bio compatibility, lack of disease transfer risk and ease of use, EHA remains a viable choice as regenerative material.

FC198

The Prevalence of Inflammatory and Developmental Odontogenic Cysts in a Libyan Population

Hamed Orafi[1], B. Krishnan[2]
[1]*Al Arab Medical University,* [2]*College of Medicine AlImam Muhammad Ibn Saud Islamic University*

Aim and purpose: The aim of this study was to determine the prevalence of odontogenic jaw cysts in a Libyan population and to compare the data with previously published reports from other countries.

Materials and method: We retrieved and analyzed 2190 case notes and biopsy records of the Department of Oral and Maxillofacial Surgery and the Department of Oral Pathology and Microbiology, Target University, Benghazi, Libya, dating from January 1990 to December 2005. There were 326 cases (14.8%) of diagnosed odontogenic cysts among the 2190 biopsies performed during this period. The cases were analyzed for age and sex distribution, site of presentation, association with impacted teeth, and the method of treatment.

Result: The male to female ratio of patients was 1.3:1 Radicular cysts accounted for 222 cases (68.1%), followed by dentigerous cysts (n = 49, 15%) and odontogenic keratocysts (n = 43, 14.1%). Mean ages of the patients were, respectively, 31.7, 22.7 and 36.1 years. The maxilla was more commonly involved than the mandible (1.3:1). The anterior maxilla was the commonest site (n = 132, 37.4%) followed by the posterior mandible (n = 96, 29.4%). Fifty three cases were associated with impacted teeth, and the highest frequency was for dentigerous cysts (n = 37). Enucleation and curettage was performed on 300 patients, marsupialization on 14, and marginal/segmental resection on 12.

Summary and conclusion: To our knowledge, this is the first such study on a Libyan population. Our results are comparable to studies from other countries. Knowledge of the relative frequencies and sites of presentation of odontogenic cysts in different ethnogeographic backgrounds is essential for the early diagnosis and management of these benign yet potentially destructive lesions.

FC199

Salivary Glucose Assays: Towards a Sweeter Future

Sangeet Sethi
Affiliation missing

Aim and purpose: To assess the correlation of salivary glucose level with blood glucose level in diabetics and non-diabetics and explore the possibility of using saliva to reflect the glucose concentration in blood, thereby making measurement of glucose non invasive.

Materials and method: A cross sectional study was conducted where in 200 individuals- 100 diabetics and 100 non-diabetics were recruited. Estimation of fasting blood and salivary glucose

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levels was carried out using ERBA Glucose Assessment Kit and Metro lab 2300 Plus Auto analyser. Results were analysed using Pearsons Correlation Coefficient Test and Spearmans Correlation Coefficient Test. p-value of 0.01 was considered significant.
Result: The diabetic and non-diabetic groups were compared for blood glucose levels and saliva glucose levels. In diabetics, a Pearson coefficient correlation of 0.907 and a Spearman Coefficient Correlation of 0.960 were obtained. In non-diabetics, a Pearson Correlation Coefficient of 0.894 and a Spearman Correlation Coefficient of 0.903 were obtained. In all cases, p-value was <0.0001 being highly significant.
Summary and conclusion: With saliva – based tests already making in roads in the field of diagnosis, high significance of salivary glucose assays makes it an avenue worth exploring.

FC200
Evaluation of Closure of Intraoral Incisions After Alveoloplasty
Srikanth Reddy Bilakanti, Shashank
Sri Sai College of Dental Surgery, Vikarabad, Andhra Pradesh, India

Aim and purpose: Aim of this study is to compare cyanoacrylate with silk suture for closure after the intraoral surgical incision for alveoloplasty.
Materials and method: (i) Amcrylate 0.25 ml (ii) Surgical silk suture. Patients indicated for preprosthetic procedure i.e., Alveoloplasty are considered. Two sites in one subject are considered one for closure with silk suture and other for closure using cyanoacrylate. Intraoral crestal incision is given and mucoperiosteal flap reflected. Bone filing and smoothening of the bone surface done. Later one site is closed with silk suture and other side is approximated with cyanoacrylate adhesive. A visual analogical scale was used to evaluate the pain, inflammation, wound dehiscence at regular intervals.
Result: Usage of cyanoacrylate adhesive aids in better and immediate homeostasis, less pain and more patient comfort compared to conventional silk sutures. Cyanoacrylate helps in fast application, low infection rate, no risk of needle stick injury. Although Cyanoacrylate has advantages its tensile strength is less than that of sutures and there is wound dehiscence in high tension areas.
Summary and conclusion: Closure of the incisions after any surgical procedure necessitates closure using silk sutures has been in practice for many years. Wound dehiscence, maintenance of the wound and suture removal are the most common complications. An alternate method of wound closure is using cyanoacrylate (Iso Amyl 2-Cyanoacrylate). Cyanoacrylate compounds polymerize in presence of water into glue with high tensile and adhesive strength. They are not absorbable into tissues and are sloughed from the surface of the mucosa in 7–10 days after adhesive application.

FC201
Wolf in Sheep Clothing. Gingival – Carcinoma – A Retrospective Study
Rafat Khan
School of Dental Sciences, Karad, India

Aim and purpose: To retrospectively evaluate the number and presentation of cases of gingival and alveolar ridge carcinomas reported in a period of 2 years.
Materials and method: Outpatients records, in the department of Oral pathology and Microbiology and Oral and Maxillofacial Surgery, SDS, KIMSDU will be retrospectively evaluated. Cases diagnosed as Gingival/Alveolar ridge carcinomas during January 2012–December 2013, will be selected and their clinical and histologic findings recorded and analyzed.
Result: Most cases reported during the study period presented clinically innocuous looking lesions. However on further investigation this case was found to be squamous cell carcinomas.
Summary and conclusion: These carcinomas constitute an extremely important group of neoplasms since the initial presentation mimics common dental infections and this had led to delay in diagnosis and even misdiagnosis. Hence a thorough history taking, clinical examination and further investigation are vital to avoid a delay in diagnosis and/or misdiagnosis.

Room F12 | 2014-09-12 | 14:30-16:00

FC202
Cemento Ossifying Fibroma; A Rare Case Report
Vaibhav Shandilya, Ajoy Shahi, Mandeep Singh, Shivendra Choudhary
Buddha Institute of Dental Science & Hospital

Aim and purpose: Presentation, treatment and prognosis of a rare case of cement ossifying fibroma in 23 years old patient which was small and gradually enlarged to a massive size of 8 × 4 cm covering whole left hemifacial region resulting in displacement of eye 4 cm apart from its anatomical location.
Materials and method: Under general anesthesia, anterior craniotomy with skull base repair by the means of soft tissue pericoronal forehead flap was done.
Result: Patient recovery was uneventful from general anesthesia. Vision of the left eye was secured with no loss of visual action. Post operative recovery was uneventful and the patient reconstruction of face was done and yielding good results.
Summary and conclusion: The ossifying fibroma is a benign neoplasm that develops from undifferentiated cells of periodontal ligament origin. A neoplastic etiology is supported by examples of lesions that achieve large size, exhibit aggressive behavior, and produce significant osseous destruction. This lesion was a rare finding because it was a long standing growth from 15 years. The lesion appeared to be invasive and involved the hemi facial region along with anterior and middle compartment of the base of the skull. Complete removal of the lesion was done with maintenance of visual pathway and actions post operative reconstruction of the face using prosthesis was done yielding good results.

FC203
Use of Modafinil for Shortening the Recovery Period of Patients Subjected to Conscious Sedation
Harsh Rajvanshi, Raghav Ahuja
Affiliation missing

Aim and purpose: (i) To search for a universal agent to facilitate the recovery in post conscious sedation as against the established

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approaches of Flumazenil and Naloxone. (ii) To determine role of Modafinil as a potential agent to decrease the debilitating after effects of sedatives used in conscious sedation

Materials and method: The mechanism of action of all major classes of sedatives follows a common route via stimulation of GABA receptors along with depression in release of dopamine, which controls locomotor activity. Modafinil leads to increase in extracellular and synaptic concentrations of dopamine. It also elevates hypothalamic histamine levels and also causes activation of glutamatergic circuits while inhibiting GABAergic neurotransmission.

Result: After discussing all facts in detail in the paper we hypothesise that the wakefulness promoting drug modafinil can act as a reliable universal drug to shorten the recovery period of patients subjected to procedural anesthesia.

Summary and conclusion: While the action of flumazenil and naloxone are restricted to antagonism of benzodiazapines and opiods respectively, modafinil acts by alternate pathways viz dopamine elevation in nucleus accumbens, hypothalamic histamine elevation and GABAergic inhibition. Hence modafinil is theoretically perfectly capable of reversing the sedative action of all agents used for procedural anesthesia. Modafinil is also known to enhance the cognitive abilities of a person and by its dopamine elevating action leads to improved locomotor activity compromised due to the dopaminergic inhibition caused by GABA.

FC204

Aluminum-Free Glass Ionomer Cements

Sauptik Ray

Manipal College of Dental Sciences, Manipal, India

Aim and purpose: The aim is to discuss how alumina-free glass ionomer cement (GIC) has successfully substituted many bone cements in maxillofacial and orthopedic applications by appropriate physical characteristics for osteointegration upon partial degradation.

Materials and method: Polymethylmethacrylate (PMMA) bone cements have been widely used in maxillofacial area. Despite the advantages, it is well known that acrylic bone cements may cause bone or soft tissue necrosis because of the properties of its components, exothermic reactions and polymerization. GICs are commonly used in dentistry, and their use for orthopedic applications is of interest, as they can overcome some of the limitations of PMMA. While acrylic cements cannot form a chemical bond to bone and mechanical stability is achieved by mechanical interlocking, GICs chemically bond to hydroxyapatite, which is the mineral phase of bone and to surgical metals. GICs contain aluminum, which plays an important role in both glass degradation (hydrolyse Si-O-Al) and in stability of the cements (cross-link PAAchains). Though relatively successful, its clinical application has been limited by fears regarding biocompatibility. These fears have arisen specifically because conventional GICs leach aluminum ions that are associated with neuro toxicity and mineralization defects in bone.

Result: Aluminum-free glasses containing zinc for forming GICs were used because zinc can play a similar structural role in the glass, allowing for glass degradation and subsequent cement setting, and is reported to have beneficial effects on bone formation. It has higher compressive strength and higher compressive elastic modulus.

Summary and conclusion: This paper presentation highlights partially degradable Aluminum-free GIC bone cement with mechanical performance, bio activity and bio degradability suitable for orthopedic application.

FC205

Oral Submucous Fibrosis: Brief Review, Management Modalities With Case Reports

Nishant Chourasia, Ankita Vastani

Rishiraj College of Dental Sciences and Research Centre

Aim and purpose: To present a review of a precancerous condition i.e. oral submucous fibrosis, its various management modalities and their results along with case reports.

Materials and method: All cases included in this paper were histopathologically diagnosed as oral submucous fibrosis. Some of these cases were treated medicinally; some were treated surgically, depending on the severity of the condition. Aggressive post-surgical physiotherapy was also done in cases that came for regular follow-up.

Result: There was a definite improvement in mouth opening in cases treated with both the modalities. However, failure to do postoperative physiotherapy or continuation of tobacco consumption led to relapse. Some cases also presented with malignant transformation in the long-term follow-up.

Summary and conclusion: Treatment of Oral Submucous Fibrosis is challenging as it has got high recurrence rate. Supportive medicinal as well as surgical modalities which include excision of fibrous bands with or without grafting is essential in majority of the cases. Although we achieved improvement in mouth opening through medicinal and surgical therapies, the nature of this disease is unpredictable. Hence, cessation of the habit, prolonged aggressive postoperative physiotherapy and a long follow-up is mandatory in the management of oral submucous fibrosis.

FC206

Psychological Impact of Tooth Extraction in Rural Population

Samprati Bhos

School of Dental Sciences, Karad, India

Aim and purpose: To determine the pre -operative emotional impact of extraction.

Materials and method: 100 patients reporting to the OPD of Department of Oral and Maxillofacial Surgery for extraction were chosen for the study. All patients were informed about the study. Teeth were extracted by standard technique. Data regarding psychological distress according to different variables like pain, anxiety, emotional disturbance was obtained pre-operatively by use of separate scales ranging from 0 to 100.

Result: All 3 variables were classified into mild, moderate and severe. Pain experienced by patients was mild in 86%, moderate in 12% and severe in 2% of the sample size. Anxiety experienced by patients was mild in 82%, moderate in 18% of the sample size. Emotional disturbance observed inpatients was mild in 70%, moderate in 25% and severe in 5% of the sample size.

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Summary and conclusion: Although, percentage of population undergoing routine dental extraction is quite high, findings of this study suggest that the emotional impact of extraction is still on higher side. Thus, there is a definitive need to follow stress reduction protocol or other standard approach to reduce emotional disturbance. More elaborative studies are necessary to determine possible causes for such emotional impact.

FC207

Analysis of Stability Between Wire and Miniplate Osteosynthesis Following Advancement Genioplasty

Ramandeep Brar
Dasmesh Institute of Research and Dental Sciences

Aim and purpose: To evaluate and compare the skeletal and soft tissue stability achieved by wire Osteosynthesis with that of Miniplate Osteosynthesis following advancement Genioplasty.
Materials and method: A total of 10 patients were included written consent and permission from ethical committee was obtained. Patients included were in age range of 15–25 years mean 22.5 (male: female = 2:8). Patients were divided into 2 groups.
Group 1 includes 5 patients (male: female = 2:3) in which the advanced genial segment was stabilized using two 2.0 mm stainless steel 4 hole l-shaped Miniplate and 6 mm screw
Group 2 includes 5 patients (all females) in which advanced genial segment was stabilized using 26 gauze stainless steel wires (on either side of the midline)
The pre-op diagnosis of chin deficiency was assessed using cogs analysis of bur stone. A series of lateral cephalograms were done immediately post-op (within 1 week), 1, 3 and 6 months post operatively. The stability and the ratio of hard to soft tissues were studied by utilizing the landmarks of park et al method of cephalometric analysis of chin.
Result: Although 10 patients experienced an acceptable improvement in aesthetics but group 2 patients (wire Osteosynthesis) showed slightly more relapse in horizontal direction.
Summary and conclusion: Our study suggests that although there are no significant differences between wire Osteosynthesis and Miniplate Osteosynthesis used for the fixation of Genial Segment but for large chin advancement (8–10 mm), it would be better if stabilized by Miniplate Osteosynthesis as against wire Osteosynthesis.

Room F13 | 2014-09-12 | 14:30-15:30

FC208

Oral and Maxillofacial Infections and Their Management

Rummaan Ahmed Sheikh, Geeti V. Mitra, R. Sushmita, Tejas Motiwale, Vinod Andhare
Sri Aurobindo College of Dental Science, Indore, India

Aim and purpose: To evaluate the involvement of various fascia spaces in different kind of Oral and Maxillofacial infections and their management.
Materials and method: Etiopathogenesis of various maxillofacial infections and protocols for their management.
Result: Maxillofacial infections are one of the oldest disease processes documented and treated owing to the negligence of patients to avail treatment of primary source of pain/swelling of odontogenic or non-odontogenic origin Although the majority of infection can be treated in anon-emergent fashion, early reorganization and correct management of severe infection can be life saving. Knowledge of surgical anatomy and path of spread of infection in head and neck is fundamental to correct diagnosis and treatment. Odontogenic causes are the most common source for spread in maxillofacial infection. These infections are rarely lethal but cases have been reported where surgical intervention has prevented a fatal outcome. Systemic diseases like AIDS, Diabetes Mellitus, HBS Ag etc generally play pivotal role in occurrence of such emergencies. Incidences of odontogenic infections are higher in patients with chemotherapy and radiotherapy with advanced cancer and in patients with Blood disorders. Despite the availability of wide spectrum antibiotics and increasing knowledge of microbiology, treatment of odontogenic infections remains primarily surgical.
Summary and conclusion: Removal of source of infection and establishment of adequate drainage for elimination of purulent material is important. Adequate antibiotic coverage is however important and should not be overlooked.

FC209

Exciting and Innovative

Beena Jain
Terna Dental College and Hospital

Aim and purpose: Tooth extraction is defined as "Painless removal of a whole tooth or tooth root with minimal trauma to investing tissue."
Materials and method: For painless extraction various instruments like forceps and elevators have been used for years. Nowadays most fast and predictable instruments invented is named as physics forceps. Physics forceps were invented by Dr Richard golden, a practicing general dentist in Detriot, Michigan. Dr. Richard discovery of applying the power and predictability of controlled leverage to the extraction procedure resulted in the invention of physics forceps.
Result: Physics forceps works on simply mechanical advantage by employing first class lever mechanics and its beak and bumper technique provide a easier and predictable extraction of any tooth in any condition, in a few minute. While preserving the buccal bone and socket.
Summary and conclusion: Physics forceps because of its magical advantage have been called as the most exciting and innovative advancement in exodontia in over 200 years.

FC210

Quantitative Sensory Assesment of the Maxillofacial Region Following Concomitant Chemo-Radiation Therapy for Squamous Cell Carcinoma of Head and Neck

Prashanth Konatham Haribabu
Rutgers School of Dental Medicine, NJ, USA

Aim and purpose: To assess the sensory alteration in the trigeminal system of the Head & Neck cancer (HNC) subjects following concomitant chemo radiotherapy (CCRT) ± Surgery, using Quantitative Sensory Testing (QST) methods.

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Materials and method: 15 subjects diagnosed with HNC and 12 cancer free controls were included. The HNC group received 6996cGy of Radiotherapy and received CCRT (cisplatin/cetuximab) ± HNC Surgery. Quantitative sensory assessments were performed prior to the start of treatment (baseline). A second assessment performed on completion of the treatment phase (7 weeks from baseline). The third assessment performed following completion of post-treatment recovery phase (11 weeks from baseline). An array of mechanical, thermal (cold/warm) detection and pain thresholds, temporal summation and condition pain modulation tests were utilized

Result: The intra-oral pain level [mechanical/thermal (cold)] test stimulus was significantly higher in the HNC group compared to controls following CCRT. The thermal (heat) detection threshold was significantly higher in the affected maxilla/mandible due to CCRT. Interestingly, the affected neck displayed significantly higher thermal detection threshold prior, post CCRT and post treatment phase among HNC patients. The HNC patients with increased intra-oral pain levels exhibited inefficient condition pain modulation by the end of the treatment phase.

Summary and conclusion: The results demonstrate the HNC subjects experience sensory alterations both extra and intra-orally induced by mechanical, warm and cold stimulus. Alterations in pain modulation efficiency due to HNC treatment modalities may probably be responsible for patients experiencing higher pain intensity during and after HNC treatment.

FC211

Lip Reconstruction – Various Technique

Geeti Vajdi Mitra, Rashmi Singh, R. Sushmitha
Sri Aurobindo College of Dental Science, Indore, India

Aim and purpose: To evaluate the treatment options available for reconstruction of lip following trauma, tumor resection with regard to applicability, reliability and functional standpoint.

Materials and method: All cases of lip reconstruction secondary to various etiology-traumas, biopsy proven verrucous carcinoma were analyzed. Different flaps-nasolabial flap, Abbes flap were analyzed. Functional aspects of the reconstruction were reviewed in terms of the size of the oral stoma and preservation of oral competence. The aesthetic outcome was assessed.

Result: All the flaps produced a satisfactory result. Nasolabial flap was found to be a viable option for loss of lip structure.

Summary and conclusion: Lips are vital for social interactions; even the slightest asymmetry is easily detected and physically and psychologically affect the patient. Therefore, maintaining the functional and cosmetic integrity of the lips during surgical reconstruction is of utmost importance. A dynamic reconstruction with remaining lip tissue can provide superior results in terms of lip appearance and function in smaller lip defects. Reconstruction of large-scale defects often requires free-tissue transfer that provides static support of the lip. Hence, presenting a case series of different types of lip defects corrected by various techniques.

Room F14 | 2014-09-12 | 14:30-15:30

FC212

Mandibular Condylar Osteoma (A Case Report)

Manish Kumar, Prem Prakash Singh, Vasudev Saini
Government Dental College and Hospital, Jaipur, India

Aim and purpose: The aim is to discuss the clinical presentation, diagnosis and management of osteoma involving the Mandibular condylar region.

Materials and method: Preoperative OPG and CT scan was done to confirm growth. Submandibular approach was used to expose Mandibular condyle and resection was performed with safe margin of approximately 0.5 cm and reconstruction was done with condylar reconstruction plate and specimen was confirmed as osteoma by histopathological examination.

Result: Osteoma is a benign tumor consisting of mature bone tissue. It is a slow growing, asymptomatic, usually solitary lesion which affects mainly young adults. The lesion is found more often in the mandible rather than in the maxilla with the lingual aspect of the body of the mandible and the lower border in the region of the angle being the most common sites. Only a few cases involving the condylar process have been reported. A large osteoma resulting in pain, facial asymmetry and malocclusion may require surgical excision. An osteoma of the left condyle causing left preauricular swelling and pain during mandibular movements in 16 year old female is reported here.

Summary and conclusion: Osteoma of the condyle is a rare, benign, bony growth that may cause painless restriction in mouth opening. It should be considered as one of the possible etiology in a patient with preauricular swelling and pain.

FC213

Bilateral Sagittal Split Osteotomy- Evolution of the Era

Mayuri Kamath
A B Shetty Memorial Institute of Dental Sciences

Aim and purpose: To highlight the evolution of the bilateral sagittal split technique and simplify the understanding of the same.

Result: The Bilateral Sagittal Split Osteotomy (BSSO) of mandible is one of the most commonly performed surgical techniques.

The evolution of the specialty of oral and maxillofacial surgery has paralleled the evolution of medical science in general. In reflecting on this process, an event that may have marked the beginning of this evolution for oral surgery was the introduction of the sagittal split osteotomy. This paper highlights the progression through the eras of modifications in the techniques of BSSO there by overcoming the many complications that the primitive conventional technique passed. This procedure evolved that could be accomplished intraorally, without facial scars and did not require inconvenience of prolonged intermaxillary fixation. The following review of literature is an attempt to isolate those modifications which marked significant advances in the technique.

Although path breaking in its own sense, the earliest technique of Obwegesser BSSO has been re looked time and time again over the years by -Del Pont, Mohnac, Hunsuck, Hinds and Kent, Bell-Schendel, Epker.

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Summary and conclusion: A thorough understanding and knowledge about this technical evolution of the BSSO helps us approach this Mandibular orthognathic procedure with more precision overcoming some of its major complications and improve the prognosis as a whole. This paper is an attempt to achieve the same.

FC214

Tens- Treatment Protocol in Oral and Maxillofacial Surgery

Sunil Sharma
Mahatma Gandhi Dental College & Hospital, Jaipur, India

Aim and purpose: To assess the effectiveness of Transcutaneous Electrical Nerve Stimulation for regional anesthesia in patients undergoing minor oral surgery.
Materials and method: A comparative two group clinical study with 40 patients in group A and 40 patients in group B was undertaken to study the efficacy of TENS, an alternative to local anesthesia for patients undergoing minor surgery.
Result: Patients of group a felt less pain during nerve block as compare to group Band this study also showed that combination of tens with local anesthesia increased the pain threshold and patients felt mild or no pain.
Summary and conclusion: One of the most distressing aspects of dentistry for the average dental patient is the fear and anxiety caused by the dental environment, particularly the dental injection referred as needle phobia. Reducing this fear may help to provide overall comfort and well being during the entire experience of dental treatment. To overcome this anxiety a method of pain control was developed which is known as Trans cutaneous Electrical Nerve Stimulation (TENS) or Electronic Dental Anesthesia (EDA). TENS offers the potential of treating patients with non-threatening non-invasive and non-pharmacological analgesic technique.

Room F15 | 2014-09-12 | 14:30–15:30

FC215

Functional Bone Imaging in Osteonecrosis- Early Diagnosis and Assessment Strategy

Gayathri Subramanian[1], Nasrin Ghesani[2], Samuel Y. P. Quek[2], Steven R. Singer[2], Mel Mupparapu[3]
[1]Rutgers School of Dental Medicine, NJ, USA, [2]Affiliation missing, [3]University of Pennsylvania School of Dental Medicine

Aim and purpose: To determine the value of Positron Emission Tomography/Cone Beam CT fusion technique in the early identification and assessment of osteonecrosis of the jaw.
Materials and method: Three 18-Fluorodeoxyglucose (FDG) PET/CT scans acquired during tumor surveillance and one NaF PET/CBCT scan, obtained between April 2012 and December 2013 were evaluated for early identification of Bisphosphonate-Related Osteonecrosis of the Jaw (BON) in a 41-year-old female patient with history of metastatic breast adenocarcinoma.
Result: (i) FDG-PET/CT from August 2012 demonstrated early BON lesion seven months ahead of symptoms. (ii) The pattern of changing uptake on serial FDG-PET/CTs obtained between May 2012 and December 2013 closely correlated with clinical progression.
Summary and conclusion: (i) Functional imaging of cancer patients receiving IV bisphosphonates should be routinely monitored for signs of early BON. Early BON may be evident ahead of clinical symptoms. (ii) Combination of NaF/CBCT and FDG-PET/CT accurately outlines the margins of the evolving BON lesion and may facilitate clinical assessment and pre-surgical planning by delineating vital remodeling bone from potentially necrotic bone.

FC216

Mandibular Canine Index and Gender Identity-Mangalore Student Based Study

Cynthia Nunes, Shishir Shetty
A B Shetty Memorial Institute of Dental Sciences

Aim and purpose: The aim of this study was to assess the validity of Mandibular canine index in establishing sexual dimorphism among the Mangalore student population.
Materials and method: The study comprised of 60 students in the age group of 18–26 years (30 males and females). Sixty dental casts with healthy, unworn and well aligned lower anteriors, obtained from these students were utilized for the evaluation of Mandibular canine index after obtaining clearance from the institutional ethical committee. The mesiodistally dimensions and inter canine arch width of Mandibular canines were measured using Vernier caliper, Mandibular canine index was determined using the above values. Standard Mandibular canine index was calculated based on the formula by Rao et al. The data obtained was statistically analysed using SPSS version 18.
Result: The results of the study showed that majority of the male students had values above the standard MCI whilst majority of females showed values below standard MCI.
Summary and conclusion: Among the various calcified structures of the human body, teeth are excellent materials to aid in forensic investigations. Mandibular canines particularly being resistant to postmortem destruction and generally the last teeth to be extracted are found to exhibit greatest sexual dimorphism. Therefore the purpose of this study was to assess the effectiveness of mandibular canines in discerning sex among student population. With the above results it can be calculated that mandibular canine index is a valuable tool for gender determination.

FC217

A Study of Lip Prints on Indian and Malay Students

Thara Rose Pius, Shishir Ram Shetty
A B Shetty Memorial Institute of Dental Sciences

Aim and purpose: To evaluate the predominant lip print pattern in Indian and Malaysian students studying in a university.
Materials and method: Lip prints were obtained from 100 students (50 Indians and 50 Malaysians). Each group of 50 students had 25 males and 25 females. A dark colored lipstick was applied with the single stroke using lipstick applicator evenly on the vermilion border. The subject was asked to rub both the lips, to spread the lipstick evenly. After 2 min, the lip impressions were made on a strip of cellophane tape on glued portion, which was then stuck to a white bond paper. This served as a permanent record. The impression was visualized using a magnifying lens. The lip prints

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were classified based on the criteria by Suzuki and Tsuchihashi's classification of lip prints.
Result: The study showed that type IV pattern was more common in Indian male students. Type I pattern was common in Indian female students. Type III pattern was common in Malaysian male students whereas Type I was the predominant pattern.
Summary and conclusion: The results of the study prove that lip patterns show alteration with reference to ethnicity and gender.

FC218
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Cynthia Nunes, Shishir Shetty
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POSTER SESSIONS

Poster Session 5 (P101–P122)

Theme: General Dentistry and Oral Health

P101
Continuing Professional Development (CPD)
Gayathri Sreenivasan, Junaid Ahmed, Nandita Shenoy, Khyati Narula
Manipal College of Dental Sciences, Manipal, India

Aim and purpose: To identify areas in clinical practice that would be favourable for continuing professional dental education among practicing dentists.
Materials and method: Participants of this study consisted of the practicing dental surgeons of Mangalore, a city in Dakshina Kannada, Karnataka.
Result: 95% of our practitioners felt that regular updating as one day program once in 3–6 months is required, to keep them abreast in clinical practice.
60% of subjects feel that CPD programs enrich their theoretical knowledge and helps in patient care.
27% of them felt that CPD program should be related to general dentistry.
Summary and conclusion: The acronym 'CPD should be seen in a broader view in which professionals continuously enhance not only their knowledge and skills, but also their thinking, understanding and maturity; they grow not only as professionals, but also as persons; their development is not restricted to their work roles, but may also extend to new roles and responsibilities.

P102
Organization of the Program for Prevention Dental Diseases in Azerbaijan
Gulshen Zeynalova
Affiliation missing

Aim and purpose: The relevance of studying the role and importance fluorid toothpaste in oral hygiene, prevention of the major dental diseases is beyond doubt. Azerbaijan had no personal experience of dental disease prevention based on commonly used educational programs and general use for the prevention of dental caries and periodontal diseases fluorid toothpastes.
Materials and method: In order to improve public health in the field of dentistry in accordance with the principles proclaimed by WHO and FDI, in our country since 1998, ASA conducted Secondary School Training Program for oral health. Developing a set of methods of health education School Education Program on oral care for the prevention
Of dental caries and periodontal disease; assessment of oral health of school children and the level of sanitary culture agents of socialization; determination of the effectiveness of toothpastes fluoridon the reduction of dental caries, periodontal disease and inflammatory processes in the remineralization of tooth enamel.
Result: Carried out within 3 years clinical studies have convincingly demonstrate that the use of fluoridon toothpaste in the school program to prevent dental disease very quickly affected the growth and development of dental caries and periodontal disease. Uncontrolled oral hygiene was good enough. Even positive developments were achieved after 18 months.
Summary and conclusion: Therefore, for the prevention and treatment of periodontal disease in school children with fluoridon toothpaste can be recommended only supervised oral hygiene. Consequently, the search becomes more urgent rather simple, affordable and effective method of controlled oral hygiene.

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P103

Tobacco Use by Adolescents: The Oral Health Professional in Evidence- Based Cessation Programs

Raminder Kaur Sekhon, Amandeep Kaur, Rhythm Sharma, Sandeep Kaur, Surabhi
Dasmesh Institute of Research and Dental Sciences

Aim and purpose: Tobacco use in children and adolescents is reaching pandemic levels. The World Bank has reported that nearly 82,000–99,000 children and adolescents all over the world begin smoking every day. Cause about 4.9 million deaths each year and every 6.5 s one tobacco user dies from a tobacco-related disease somewhere in the world. The total global prevalence in smoking is 29% (47.5% of men and 10.3% of women over 15 years of age smoke). Every day 80,000–100,000 youths become regular smokers.
Materials and method: Tobacco is used in a wide variety of ways in India including smoking and smokeless use. Cigarette smoking during adolescence reduces the rate of lung growth and the level of maximum lung function. Exposure to second hand smoke can also hinder the growth of the lungs and may increase the risk of developing lung cancer as an adult. Tobacco addiction has been described as a cycle, with progression from experimentation to regular use, dependency, cessation, and relapse. In most adolescent tobacco cessation activities have been implemented in schools and in the community.
Result: Behavioral and counseling techniques such as the social influence and life skills training methods have a short-term impact on smoking in youth.
Summary and conclusion: Therefore, alternative tobacco cessation intervention techniques should be considered when dealing with the adolescent population. Dental office is one alternative setting that should be considered for tobacco cessation program implementation.

P104

Obstructive Sleep Apnea

Dhawan Sapna
Genesis Institute of Dental Sciences & Research, Ferozpur, Punjab, India

Aim and purpose: A multidisciplinary approach to examination and diagnosis help to determine the most appropriate treatment plan for each individual. The thoracic physician and ENT surgeon work in close collaboration with their dental colleagues: an orthodontist, prosthodontist and maxillofacial surgeon.
Materials and method: Oral appliance like (moses appliance, tongue retaining device, snore guard) appliances and surgical procedures like (mandibular advancement and repositioning) and myerson EMA custom appliance use for non invasive treatment of snoring and OSA.
Result: These appliances and procedures are also most likely to be well tolerated by the patient.
Summary and conclusion: OSA is independently associated with an increase in the cardiovascular risk factors. This may help explain the increased cardiovascular morbidity and mortality associated with this condition.

P105

Dentoalveolar Anomalies in Children With Cerebral Palsy

Vasilii Aliamovskii, Anatoly Duzh, Natalia Tarasova, Vladislav Galonsky
Krasnoyarsk State Medical University, Russia

Aim and purpose: The prevalence and structure of dentoalveolar anomalies in children with cerebral palsy.
Materials and method: Cerebralpalsy is developing in both boys and girls of every race and social status. Dental examination of 86 children with cerebral palsy aged 6–16 was conducted.
Result: Prevalence of dentoalveolar anomalies in children with cerebral palsy was 96.7%, which is 58.9% higher than that of healthy children in Krasnoyarsk (37.8%). When analyzing the timing of teething in children with cerebral palsy it was found teething delay in both temporary and permanent teeth from 6 to 24 months. Regional data on the specifics of the timing of teething in healthy children show early formation of an interim (26–27 months) and permanent dentition (12–13 years).
Studying the structure of dentoalveolar anomalies in apparently healthy children revealed predominance prevalence of deep incisal occlusion i.e. 25.0% and rarely diagnosed anomaly of dentition at 23.0%. For children with cerebral palsy were characterised with vertical malocclusion: deep at 35.8%; open at 9.8%. Sick children in 12.0% of cases had the distal occlusion. The combination of various types of anomalies of the teeth, dentition and occlusion detected in 88.5% of the surveyed children with cerebral palsy, relatively healthy children, these indicators amounted to 14.5%.
Summary and conclusion: Disorders of the muscloskeletal system, the functions of breathing, chewing and swallowing, a long period of artificial feeding all these factors contributed to the development in patients with cerebral palsy dentoalveolar anomalies and deformations.

P106

MMP and Inflammatory Cytokines in Saliva Patients With Chronic Generalized Periodontitis

Evgeny Solovykh[1], Nikolay Kushlinskiy[2], Tatiana Karaoglanova[2]
[1]*I.M. Sechenov First Moscow State Medical University,*
[2]*Affiliation missing*

Aim and purpose: To observe a role of this cytokines in periodontal disease.
Materials and method: Saliva of the 116 patient was observed by immunoferment analisys. Concetration of matrix metalloproteinases (MMPs) 2, 8, 9, interleukin (IL) 1ß and 6, the tissue inhibitors of MMPs (TIMP -1, TIMP -2) and tumor necrosis factora (TNF -a) in the oral liquid of healthy people patients with chronic generalized periodontitis were registered.
Result: The results of the comparative study immunoferment content of matrix metalloproteinases (MMPs) 2, 8, 9, interleukin (IL) 1ß and 6, the tissue inhibitors of MMPs (TIMP -1, TIMP -2) and tumor necrosis factor a (TNF-a) in the oral liquid of healthy people patients with chronic generalized periodontitis. Revealed that MMP-9 in oral liquid can serve as a marker of chronic generalized periodontitis, regardless of the presence or absence of metal restorations. Level of MMP- 8 increased relative to the norm only in the oral fluid of

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patients with chronic generalized periodontitis with metal restorations. The correlations analysis in different groups of patients indicates the relative similarity of the regulation of the secretion of MMP and TIMP in oral liquid from patients with intact periodontium.
Summary and conclusion: Patients with inflammatory – destructive periodontal diseases, as with metal teeth restorations and dentition, and without them, identified the correlation coefficients indicates the emergence of a whole cascade of biochemical reactions involving the activation of cytokine production in response to the etiologic factors. More pronounced reaction is observed in patients with periodontitis.

P107
The Functional State of the Patients – Diagnostic Criteria in Dentistry
Evgeny Solovykh
I.M. Sechenov First Moscow State Medical University

Aim and purpose: The purpose of the study – based on the results of cluster analysis to develop classification of patients depending on the function of the state of dentition postural and autonomic nervous system
Materials and method: Performed cluster analysis results of the study of the functional state of the dentition, postural and autonomic nervous system in 251 Rights (129 men, 122 women) aged 20–60 years. Exclusion criteria included patients from the study were: the complete absence of teeth, acute somatic disease, exacerbation of chronic diseases, myocardial infarction up to 6 months, mental disorders, alcohol and drug addiction
Result: According to the results of cluster analysis, patients can be divided into two groups. Results of the comparison of functional parameters of patients exist testimony that the first group of patients can be defined as patients with sub compensated functional statement, the second group – patients with compensated you functional statement. These features of the functional state of the autonomic nervous system show a reduction of interval parameters of cardiac patients of the first group on the background sub compensated statement -consistent and functional state sub compensated dental, postural and autonomic nervous system.
Summary and conclusion: Integrated functional diagnostics reveals the level of compensation the state functional systems. Depending on the functional state of dentition in autonomic nervous system, patients can be divided into two groups: compensated sub compensated and functional state. Results of cluster analysis provide the theoretical background for the further development of detail obtained classification.

P108
Stem Cell Therapy-Hype or Hope in Dentistry
Gummadi Gouthami
Kirishna Devraya College of Dental Sciences

Aim and purpose: Role of stem cells in the upcoming years of Regenerative Dentistry.
Materials and method: Stem cells are a unique, special kind of cells which has the ability to self replicate for prolonged period and renew it. Dental stem cells are derived from ectomesenchyme which can be obtained from either shed primary teeth or extracted permanent teeth. Cells present in the dental pulp have regenerative capacity which terminally differentiate into odontoblast like cells to form reparative dentin. Stem cells hold a strong promising factor for the improvement of periodontium regeneration. Regeneration of the dental tissues appears to be a great convergence between clinical dentistry and bio-engineering. Regeneration of a living and functional tooth is one of the most promising therapeutic strategies for replacement of diseased or damaged tooth.
Result: The clinical research on the stem cells is a budding controversial entity in the field of dentistry, primarily regenerative dentistry is in an infancy stage which is yet to be clinically applied. This poster elicits the unique features of Dental Stem cells, methods of collection, regeneration of the dental tissues and clinical applications in the field of dentistry.

P109
Associations Between Dental Fluorosis, Periodontal Status and Dental Caries in 15-Year Old School Children Residing in a High Fluoride Area in Sri Lanka
Manori Jayasinghe[1], S. L. Ekanayake[1], R. D. Jayasinghe[2], N. Abeygunawardhana[3]
[1]Teaching Hospital, Kurunegala, Sri Lanka, [2]Department of Oral Medicine and Periodontology, Faculty of Dental Sciences, University of Peradeniya, [3]Restorative Dental Unit, Teaching Hospital Karapitiya

Aim and purpose: The objectives of the present study were to determine the prevalenceof dental fluorosis, dental caries and periodontal diseases in 15-year-oldschool children living in a high fluoride area in Sri Lanka and to assess the associations between dental fluorosis, caries and periodontal status.
Materials and method: The sample consisted of 407 fifteen-year-oldsattending 8 randomly selected schools in Maho area in Kurunegala. They were life-long residents of the area and obtained their drinking water from a ground water source. Data was collected using a self-administered questionnaire and an oral examination. The Deans index was used to record dental fluorosis and periodontal status was assessed in terms of gingival bleeding on probing (BOP) which was recorded on 6 surfaces of all teeth present in the mouth. Dental caries was recorded ac
Result: Information was gathered from 407students. Of the sample, 53.3% were males and 71.7% were using water from deep dugwells for drinking purposes. According to the Deans index, 27% of the samplehad mild fluorosis (score 2) while only 5.2% had severe fluorosis (score 4). Theprevalence of BOP was 100% but the severity varied. Prevalence of dental carieswas 25.1%. There was no association between dental fluorosis and BOP but a significant association was observed between dental fluorosis and DMFT ($p < 0.05$).
Summary and conclusion: There was no association between dental fluorosis and periodontal health in the present study.

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P110
Special Care Dentistry
Stanley Mathew
Divya Jyoti College of Dental Science and Research, Modinagar, India

Aim and purpose: Are we really equipped to deliver quality oral health care to the patients with special needs?
Materials and method: Introduction of courses to the undergraduate curriculum that will enable dentists to better treat people with special needs. Setting up of departments in private as well as government dental colleges which cater exclusively to the people who require special care.
Result: Government agencies, educational institutions and non-governmental organizations are joining hands to create oral health initiatives and reduce irregularities in oral health care delivery system for that whore quire special care.
Summary and conclusion: Special needs patients can be present with systemic diseases, issues of aging, multiple medications and many other behavioral issues. These patients require dental care to be delivered in the ways that suit their unique circumstances. The need of the hour is trained, well qualified, dental professionals who can provide quality oral care services to patients with special needs. The dental curriculum has only a small section dealing with special care dentistry, hence the graduates are not usually sensitized or well equipped to handle such patients. However patients who require special care require a little extra than the ordinary. As far as private practices are concerned dentists should keep themselves updated about the latest advances in the field of special care dentistry, through interactive learning sessions online. This can be highly productive as dental professionals can share different techniques used by them to treat such patients in their practices.

P111
Digital Technology for Complete Dentures
Manu Rathee
PGIDS Rohtak, Haryana, India

Aim and purpose: Introduction of digital technology in the field of dentistry has led to digitization of restoration fabrication process. Application of computer aided designing and computer aided manufacturing in complete denture fabrication aims at speedy and convenient fabrication of prosthesis. It is directed towards simplification of processing and shortening of the lab timings.
Materials and method: Computer aided designing (CAD) and Computer aided manufacturing (CAM) of complete dentures makes use of materials those are compatible for scanning and milling. The optical impression is picked up and fed into the software unit. The designing is planned according to the available foundation and ridge relation. The final design is milled in the appropriately chosen denture material.
Result: With technological advancements, dentists are able to fabricate complete denture using optical impression, virtual articulators and computer aided designing and milling machines. This offers the advantages of reduced treatment time, reduced lab timing and convenience of fabrication for the dentist. Also patients do not have to undergo manual intraoral procedures of impression making; jaw relation recording and less number of visits are required by the patients making it a convenient procedure.
Summary and conclusion: The current clinical applicability of the computer aided designing and computer aided manufacturing of complete dentures is limited due to the technological and financial constraints. Currently it is the routine treatment modality for complete denture patients. However, the complete dentures fabrication using CAD-CAM is expected to be widespread in recent future as the technology is embracing the field of dentistry and this amalgamation is going to grow stronger.

P112
Knowledge, Attitude and Practices of Tobacco Use Among Dental Surgeons in Sri Lanka
Ruwan Jayasinghe[1], B. M. H. S. K. Banneheka[1], Mam Sitheeque[1], H. Amarasinghe[2]
[1]*Department of Oral Medicine and Periodontology, Faculty of Dental Sciences, University of Peradeniya,* [2]*National Cancer Control Programme, Ministry of Health Colombo*

Aim and purpose: Determine (i) the practices and attitudes regarding tobacco consumption and (ii) the level of knowledge regarding the effects of tobacco on oral and general health among the dental surgeons in Sri Lanka.
Materials and method: A pre tested questionnaire designed to obtain general information about the dental surgeon and specific information on knowledge, attitude and practices of tobacco use was used in the study. Ethical clearance for the study was obtained from the Ethics Review committee, Faculty of Dental Sciences.
Result: The dentists' role in anti-tobacco programmes in Sri Lanka was not satisfactory and 86% wanted the dental curriculum to include an area on tobacco cessation.
Summary and conclusion: The fact that only 36% of the subjects had participated in an anti-tobacco program highlighted the need for such programmes in a country with a high rate of oral cancer.

P113
Obstructive Sleep Apnea: The Silent Existence!
Reyza Ali[1], K. M. Raina[2]
[1]*Manipal College of Dental Sciences, Manipal, India,* [2]*Affiliation missing*

Aim and purpose: Understanding the diagnosis and treatment modalities of obstructive sleep apnea.
Materials and method: We conducted a literature review of the databases PubMed, Wiley, Cochrane, and Medline. We reviewed all prospective studies on diagnosis and treatment of obstructive sleep apnea.
Result: Obstructive sleep apnea is the most common type of sleep apnea which is caused by obstruction of upper airway. It is characterized by repetitive pauses in breathing during sleep and also excessive daytime sleepiness. Diagnosis is based on combined evaluation of objective sleep study reports and clinical manifestations. Polysomnography in the sleep laboratory is the gold standard for

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the confirmation of diagnosis and also guide the therapeutic choices. Various treatment approaches include general and behavioral measures, mechanical measures, oral appliance therapy, surgical modifications and pharmacological therapy. The selection of treatment is based on ease and convenience of the patient with a significant effect by lifestyle modification.
Summary and conclusion: Polysomnography is the definitive diagnosis for OSA. Others include split night study, ENT evaluation; CT. Positive Airway Pressure Devices are the most widely used treatment options. Weight loss, nasal decongestants, positional therapy, surgery, oral appliances are also used.

P114
A Sinister Swelling
Thamizh Chelvan, Malathi Narasimhan, Santhosh Kumar
Faculty of Dental Sciences, Sri Ramachandra University

Aim and purpose: The aim of presenting this case report is to emphasize the importance of early diagnosis and prompt treatment that can help or even cure deadly malignancy such as "malignant lymphoma."
Materials and method: Male patient 75 years old with extensive swelling over left maxilla for 10 days. Investigations included FNAC, biopsy and immunohistochemistry.
Result: Swelling was about was about 4 × 5 × 4 cm involving the nasolabial fold. On Intra-oral examination- Swelling was sessile with ulcerative surface. As a pathologist my quest with this case started with FNAC smear which showed cluster of typical cells. On further investigations what awaited us was "Dreadful Pathology" – Malignant Lymphoma. The case will be reviewed and discussed further.
Summary and conclusion: Any disease which could be trivial or dreaded when diagnosed early could yield good results and it goes without saying that patient is benefitted the most.

P115
Image Guided Local Anesthesia (IGLA) and Computer Controlled Local Anesthetic Delivery Techniques
Anjali P. Rana
Ahmedabad Dental College

Aim and purpose: Local anesthesia is a commonly practiced dental procedure, based on anatomical landmarks. Inaccuracy and inappropriate technique can lead to local and systemic complications such as needle breakage, insufficient anesthesia, hematoma formation, pain etc. So there is a need to devise a technique to increase accuracy and decrease complication rate of LA. Our aim was to explore the potential for a new technique for Image Guided Local Anesthesia.
Materials and method: Extensive literature search was done for assessing methods which can be used for IGLA. We evaluate all techniques which can serve as potential candidate for IGLA. We then use 150 point scales based on 7 criteria's, i.e. availability in India (25), cost (25), imaging potential (25), intraoperative feasibility (25), software techniques for image enhancement and computer controlled local anesthetic delivery techniques (20), complication detection rate (15), and adverse reaction (15). Scores were calculated based on the research articles and studies available on research databases like pubmed, Google scholar etc.
Result: We found out Magnetic resonance neuroimaging (MRN), 3dCT, CT, USG, high intensity focused ultrasound (HIFU), 3dUSG, RVG and continuous Intra-oral x-ray imaging methods. Out of all methods USG, HIFU and real time USG scored maximum of 125 points, followed by MRN (120), RVG (120), CT (115), 3dCT (115), continuous intraoral digital x-ray (100).
Summary and conclusion: USG can be a good choice for Image guided Local anesthesia, which can be combined with Computer controlled local anesthetic delivery techniques for accurate local anesthesia.
Keywords: CCLAD, IGLA, Image guided, local anesthesia.

P116
Predictability and Reliability of Scientific Palmistry: A Systematic Review Study on Over 5000 Dental Patients
Sarangi Brahmbhatt, Khusbhu Prajapati
Ahmedabad Dental College

Aim and purpose: Palmistry is the art of characterization and fore telling the future through the study of the palm. Dermatoglyphics (from ancient Greek derma = "skin," glyph = "carving") is the scientific study of dermal ridge configurations on palmar and plantar surfaces of hands and feet as defined by Sir Francis Galton and Dr. Harold Cummins.
Objective: To evaluate level and strength of evidence between dermal patterns and dental anomalies.
Materials and method: A thorough search was made in various scientific databases like pubmed and Google scholar to find studies done on dermal ridges and dental disorder. All studies were further analyzed for dermatoglyphics classification used, method for imprinting used, dental disease classification, dental radiographic method used. A causal association was further assessed using Pearson's correlation. Strength and level of evidence rating was further given based on studies. (A = high, B = medium, C = low)
Result: We evaluated more than 53 published studies, which enroll over 5000 patients; most common method used was ink method for imprinting. Whorl pattern was involved in class 1 and 2 malocclusion (Level A), S. mutans growth and caries (level A), oral cancer (level A), bruxism (level A), leukoplakia (level B) andhypodontia (level B). Ulnar loops were more associated with cleft lip and palate (level A), high arched palate (level A), periodontitis (level B) and class 3 malocclusion (level B). Others diseases associated were dental fluorosis, taurodontism and pseudohypoparathyroidism (level C).
Summary and conclusion: Dermatoglyphics is a reliable tool to unveil oral diseases. Its inclusion in history taking before dental oral examination can reveal dental anomalies to a large extent.
Keywords: Dermatoglyphics, Malocclusion, Predictability, Reliability, Systematic review.

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P117

Evaluation of Clinical and Radiographic Signs of Formocresol, Propolis, Turmeric Gel and Calcium Hydroxide on Pulpotomized Primary Molars

Pratibha Kukreja
K.L.E V.K Institue of Dental Sciences

Aim and purpose: Despite various advents in technology, the present era marks a shift to phytotherapeutics and alternative modalities to conventional endodontic treatments have been established. The present study was done to evaluate and compare the clinical pulp response and radiographic signs after pulpotomy in four groups of primary molar teeth treated with Formocresol (control), Propolis extract, Turmeric gel and Calcium hydroxide respectively.
Materials and method: Following ethical clearance, 90 primary molar teeth in 45 pediatric patients aged between 4 and 9 years were selected based on clinical and radiographic signs as candidates for pulpotomy. These were then randomly divided by split mouth technique into four groups and treated with Formocresol (control group), Propolis extract, Turmeric gel and Calcium hydroxide after amputation of coronal pulp. The patients were followed up for 12 weeks for clinical and radiographic signs and symptoms.
Result: A comparable clinical and radiographic success rate was seen with all experimental groups as compared to the control (Formocresol) group.
Summary and conclusion: With concerns about the safety of formocresol appearing in the dental and medical literature for more than 20 years, the modalities presented in this poster can be considered as promising alternatives for pediatric endodontic treatment.
Key words: Propolis, Pulpotomy, Formocresol.

P118

Psoralen Ultraviolet A (PUVA) Therapy for Autoimmune disorders

Dwijeshshitalgiri Goswami
Ahmedabad Dental College

Aim and purpose: To check the efficacy and efficiency of Psoralen Ultraviolet A (PUVA) Therapy for Autoimmune Disorders.
Result: Psoralen Ultraviolet A (PUVA) is a Photochemotherapy widely used by dermatologists to treat skin conditions. Ultraviolet-A (UVA) rays alone are not an effective form of treatment, so some medications which make skin more reactive to light, like Psoralen, are used. Psoralen is a natural chemical found in many plants and it is highly sensitive to ultraviolet light, particularly UVA. It affects the DNA strands in the skin cells. Psoralen is given by three methods: oral (by mouth), topical (directly on the affected skin) or bath. Recently, it has been tried in various oral autoimmune disorders like Oral lichen planus, Lichenoid reaction, Psoriasis, Graft-versus-Host Disease, Pemphigus; etc. The poster reviews the role of PUVA therapy in oral autoimmune disorders and its recent advances. It also attempts to evaluate the effectiveness of this regime vis-à-vis other treatment options.
Summary and conclusion: Thus we can conclude that despite of the side effects and long term hazards, PUVA could prove to be an effective alternative to conventional immunosuppressive therapy.

P119

Comparative Evaluation of Apexogenesis Induced by Revascularization, With and Without Platelet-Rich Fibrin (PRF) in Non-Vital, Immature Teeth

Ankit Gaur
College of Dental Sciences and Research Center, Davangere, India

Aim and purpose: To evaluate and compare the outcome of revascularization with and without platelet-rich fibrin (PRF) to induce apexogenesis in non-vital, immature teeth.
Materials and method: Twenty young patients, each with an immature permanent tooth with chronic or acute apical periodontitis were recruited. A triple antibiotic mix (ciprofloxacin, metronidazole, and minocycline) was used to disinfect the pulp for 3 weeks.
Revascularization with blood clot as scaffold and Revascularization with introduction of platelet-rich fibrin as scaffold was done. Cases were divided into two groups of 10 patients each: Group I-Revascularization induced with blood clot as scaffold. Group II-Revascularization supplemented with platelet-rich fibrin carried into the root canal as scaffold. Follow up at intervals of 3, 6, and 12 months.
Result: No statistically significant difference in revascularization induced with and without PRF. Most of the patients showed root canal wall thickening and elongation. Complete resolution of clinical signs and symptoms in teeth treated in both groups.
Summary and conclusion: Repair of the pulp by vital tissue is better than replacement of pulp with biomaterials, gutta percha in an immature permanent tooth with pulp necrosis. Revascularization can be a promising and an effective method for inducing apexogenesis in non vital immature teeth.

P120

Enamel Hypomineralization: Prevalence, Defect Characteristics in Primary Dentition in India

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Aim and purpose: To report on prevalence, phenotypes and clinical presentation of enamel hypomineralization in primary dentition in Indian children as no data on this condition (in primary dentition) is available globally.
Materials and method: A cross-sectional observational study recruiting a stratified random sample of 948, 4–6 year old school children of Gautam Budh Nagar, Uttar Pradesh was conducted. European Academy of Pediatric Dentistry (2003) criteria were employed to detect and score enamel hypomineralization. All primary teeth were examined. Surfaces examined included occlusal, buccal and lingual/palatal. A single, experienced, well trained and calibrated examiner conducted entire clinical examination of study population. Statistical analyses were conducted to express the prevalence; type, extension and distribution of defects as mean ± SD and/or number (%age). Further intra-group analyses were conducted to compare the prevalence and distribution of different type of lesions in affected subjects using paired *t*-test.

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Result: An overall prevalence of 7.51% (71/948) was reported. A total of 2.75 ± 1.735 teeth/subject and 4.75 ± 4.136 surfaces/subject were reported to be affected. Commonest lesion was creamy white opacity ($p = 0.002$) while post-eruptive breakdown was observed in 40.85% (29/71) of affected subjects.
Summary and conclusion: The prevalence of enamel hypomineralization in primary dentition was 7.51% in study population. Further studies mapping the prevalence as well as possible links with molar incisor hypomineralization in other geographical locations of world are required.

P121
Debut in Dental Materials: Ribbond
Zeal Gandhi, Deepak Patil
K. M. Shah Dental College and Hospital, Sumandeep Vidyapeeth

Aim and purpose: As new advances are occurring in cosmetic dentistry, the development of fiber-reinforced composite (FRC) technology has brought a new material into the realm of metal-free, adhesive aesthetic dentistry i.e. RIBBOND.
Materials and method: Ribbond is a bondable, bio compatible, aesthetic, translucent and easy to use ribbon made from high molecular weight polyethylene woven reinforced fiber.
Result: After reviewing and its practical uses ribbon has much good strength, good aesthetics, and high bondable material with composite for posterior restoration also.
Summary and conclusion: It is an excellent material used in cosmetic dentistry mainly for stabilizing or rebuilding the lost tooth structure.

P122
Alzheimer's Disease Linked to Poor Dental Health
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Aim and purpose: A study has found that people with poor oral hygiene or gum disease could be at higher risk of developing Alzheimer's compared with those who have healthy teeth.
Researchers from a targeted University discovered the presence of a bacterium called *Porphyromonas gingivalis* in the brains of patients who had dementia when they were alive. The bug is usually associated with chronic periodontal (gum) disease. This bacterium is usually found in oral cavities, and enters the blood stream through a variety of daily activities, such as chewing, eating and brushing teeth. However, it is more likely to enter the blood stream after invasive dental treatment, where it is possible that the bacteria can enter the brain regularly, the researchers say.
Materials and method: The research included *Treponema denticola*, *Tannerella forsythia*, and *Porphyromonas gingivalis*, all associated with poor oral hygiene and gum disease.
Result: The team observed signs of the bacteria *Porphyromonas gingivalis* in four of the 10 brains of those with Alzheimers compared to none of those without the disease. They were unable to observe either of the other two periodontal bacteria in the samples they examined.
Summary and conclusion: The researchers hope that continued donation of brain tissue will enable examination of more samples from people with and without Alzheimer's disease who have relevant dental records. They add that future research will involve determining whether the *Porphyromonas gingivalis* could be used as a marker for a blood test that predicts the development of Alzheimer's disease in patients who are at higher risk.

Poster Session 6 (P123–P145)

Theme: Preventive Dentistry

P123
Impact of Dental Treatment on Employment Outcomes Among Social-Assistance Recipients
Sonica Singhal[1], Carlos Quinonez[1], Howard Tenenbaum[1], Andrew Mitchell[2], Muhammad Mamdani[3]
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Aim and purpose: This study was conducted to provide policy makers with better information about the effects of dental treatment on employment outcomes among social-assistance recipients.
Materials and method: A retrospective cohort study was designed using dental treatment and social services databases from five municipalities in Ontario, Canada. Employment outcomes of no-treatment and treatment groups were observed at 3, 6 and 12 months, from baseline. Multi variable logistic regression and-longitudinal analyses were performed.
Result: Data for 8742 people (2742 treatment, 6000 no-treatment) were received. At 3, 6, and 12 months, a lower proportion of the treatment group left social assistance (13%, 20%, and 29%, respectively), as compared to the no-treatment group (18%, 28%, and 33%, respectively). After adjusting for potential co-founders, the difference became insignificant only at 12 months. Among those who left, approximately 25% left due to employment or training, which was similar for both groups.
Summary and conclusion: At 3 and 6 months, the treatment group had significantly lower assistance outcomes than the no-treatment group; however, the difference did not remain significant at 1 year. It seems that dental treatment may address employment barriers to some extent, such that employment outcomes of treatment recipients potentially levelled up over time.

P124
Knowledge, Attitude and Practice of Dental Practitioners Regarding Oral Cancer
Afsheen Dhanani
Dow University of Health Sciences

Aim and purpose: Oral cancer is usually detected at last stages when treating it becomes more crucial, dentists play important role in diagnosing it at early stage. The aim is to assess the knowledge, attitude and practices of dentists regarding oral cancer.
Materials and method: The cross-sectional study conducted in 2013, Pakistan. 25 item questionnaire encompassed: clinicians

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demographic. clinicians knowledge about site, signs, symptoms and risk factors clinicians practices with regard to performing oral cancer screening and examination and clinicians attitude regarding their ability and importance to detect oral cancer.
Result: 70% of the dentists had knowledge about common risk factors, when low consumption of fruits and vegetable were asked as a risk factor only 58% knew, only 64.3% dentists agreed that squamous cells are most common cancer causing cell, when question regarding early sign and symptoms were asked only 68.3% agreed that Erythroplakia is among most common early sign &symptom when questions regarding attitude were asked 77% dentists agreed that oral screening leads to early diagnosis while 75.4% dentists believe they are trained to perform oral examination to detect oral cancer, when dentists were asked if they update their knowledge from scientific researches only 69% dentists said yes regarding practice 84.9% dentists said they perform screening on every patient, majority of dentists that were surveyed refer to a specialist when detect non-healing ulcers rather performing biopsies themselves.
Summary and conclusion: From this study is the call for interventions to increase awareness and update their knowledge through new researches and scientific programs and need for standardized oral screening procedure worldwide which leads to early detection of oral cancer to decrease associated mortality rates.

P125
Propolis- The Natural Contender of Caries
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Dasmesh Institute of Research and Dental Sciences

Aim and purpose: To compare the efficacy of Propolis and Chlorhexidine in reducing the *Streptococcus mutans* counts in saliva.
Materials and method: 5% Propolis solution (Propolis Platinum Children in the age group of 8–12 years with DMFT <2 were selected. A routine salivary sample of 1–2 ml was collected from the subject and cultured taking colony counts as baseline reference counts. Thereafter, the subject was asked to rinse the mouth with 0.2% Chlorhexidine and 5% Propolis solution. The counts of second and third samples were compared in reference to the baseline colony counts of the subject.
Result: The study revealed that 5% Propolis possesses high antimicrobial activity against *Streptococcus mutans* as compared to CHX. There was a significant reduction in *S. mutans* counts henceforth, Propolis can be the natural contender against caries.
Summary and conclusion: Dental caries is one of the common oral infections and inflicts a huge burden on the population. CHX is widely used as mouthwash but Propolis being natural and non-toxic can have medicinal scope in prevention of dental caries.

P126
Why Parents Prefer University for Pedodontic Treatment? Effect of Education and Media
Mehmet Bani, Didem Atabek, Nagehan Duygu, Nurhan Oztas
Gazi University Faculty of Dentistry

Aim and purpose: The aim of this study is to determine why parents prefer university clinics for pedodontic treatment, as well as describe caries, orthodontic treatment, trauma, education, and the media effect.
Materials and method: A 5-item, questionnaire-based, cross-sectional interview study was administered face-to-face to a nationally representative sample in Turkey in 2013 by the Gazi University Faculty of Dentistry, Department of Pediatric Dentistry. The researchers recorded the parent's educational status, reasons for referral, and the childrens age and sex. A Chi-square test was used for the categorical variables. The continuous variables were compared using a Mann–Whitney *U*-test and a Kruskal–Wallis test.
Result: A total of 572 parents (393 mothers, 157 fathers, and 22 others) agreed to participate in this study. In this study, 51.2% of the patients were admitted to the pedodontic clinic due to caries, 21.9% for orthodontic treatment, and 6.3% for trauma. Question-1: Statistically significant difference was found between parents educational status. Question-2: Increased education status led to increased confidence in academic facilities ($p < 0.05$). Question-3: Just for over the 16 years education status has found significantly a low concern ($p < 0.05$). Question-4: Only for over the 16 years education status was found significant information via media sources ($p < 0.05$). Question-5: 56.6% said dentists should provide more information.
Summary and conclusion: Although dentists are still the major information source for pedodontic treatment, media sources are gaining importance and status for educating the public. There was a significant difference in confidence in academic facilities among patients who were referred with trauma of all causes. The increasing status of education showed a significant difference for confidence in academic facilities.

P127
Self-Reported Racism and Oral Health Outcomes Among Prenatal Aboriginal Canadians
Herenia Lawrence
University of Toronto

Aim and purpose: Stressors related to ethnicity, including racial discrimination and stigmatization have been associated with negative physical and mental health outcomes among Canadian Aboriginals. We hypothesized that self-reported racism also affects the oral health of this population.
Materials and method: Data were nested in a community-based trial of 544 pregnant Aboriginal women and infants to assess the effectiveness of behavioral and preventive interventions against early childhood caries. Interviews were at enrollment (second trimester) or soon after. Outcomes included self-rated oral health, dental care utilization and practices, symptoms and unmet needs. Logistic regression, controlling for confounding, examined associations between self-reported racism, measured by the "Measure of Indigenous Racism Experiences" (MIRE), and oral health outcomes.
Result: One-third (32.5%) of participants reported experiencing racism in the year prior to the survey and 30.3% of those felt that they had been treated unfairly by doctors, dentists or clinical staff. Only 5% were edentulous. Adjusted odds ratios (AORs) revealed

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high levels of self-reported racism as a risk indicator for edentulousness (AOR 5.7; 95% CI 1.3–24.8) and wearing "false" teeth (3.3; 1.5–7.3). Racism was also associated with perceived need for fluoride treatment, complaints of chronic dry mouth and bad breath, and missing work/school because of dental problems. No other oral health measure was associated with racism.
Summary and conclusion: High levels of self-reported racism were associated with edentulousness and wearing dentures among prenatal Aboriginal women. Future research should continue to investigate links between ethnic background and poor oral health to eliminate racial disparities in oral health care.

P128
Is There a Role for Community Pharmacists in Oral Health Promotion?
Ravdeep Mann, David Gillam, Wagner Marcenes
Queen Mary University of London

Aim and purpose: To investigate the role currently employed by Pharmacists in oral health promotion.
Materials and method: The present study is a quantitative cross sectional survey conducted using a structured questionnaire. A total of 750 pharmacies were randomly selected from a list of 2563 pharmacies registered with National Health Services (NHS) and practicing in London and Greater London area. Invitation letters were sent to the selected pharmacies and one pharmacist (in each pharmacy) was invited to participate. Following this an email with a web link was sent to the pharmacists in order to facilitate the completion of the questionnaire. Postal questionnaires were also sent to those who requested a hard copy. The questionnaire included a cover letter and 17 multiple choice or open ended questions. The collected data was analysed for descriptive statistics and data analysis was completed using the Statistical Package for Social Science (SPSS v. 21). Ethical approval for the study was obtained from Queen Mary University Research Ethics Committee.
Result: 583 pharmacists responded to the initial invitation, with 354 agreeing to complete the questionnaire. 229 pharmacists declining the offer complete the questionnaire but did acknowledge a role for pharmacists in oral health promotion. Out of those agreeing to complete the questionnaire, 99.4% (n = 352) pharmacists perceived a role in oral health promotion. 91.5% (n = 324) of pharmacists reported a fairly high level of knowledge for most of the common oral conditions, 336 (94.9%) of the pharmacists were interested in receiving further training on oral conditions.
Summary and conclusion: It was evident that the community pharmacists strongly perceived a role in oral health promotion.

P129
Dental Caries and Body Mass Index in Brushing Teeth Students
Yudha Rahina
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Aim and purpose: Based on Indonesia Basic Health Research (2013) 25.9% Indonesian community had dental problems, 68.9% people had active caries (DMF-T: 4.5). Toothache is the main reason for work and school absenteeism, with an average of 3.86 day/year. Only 91.1% people brushing teeth, 90.7% brushing teeth not in the right time (after breakfast and before sleep at night) and it found 13.6% children under 5 years old were thin. Children with caries will have eating disorders that cause malnutrition. The aim of this research is to determine the correlation between dental caries with Body Mass Index (BMI) in kindergarten with brushing teeth at school.
Materials and method: Longitudinal study was conducted on 300 kindergarten children, aged 4–6 years, consisting of 150 children with brushing teeth at school everyday and 150 children were not, observed in a year. DMF-T Index was used as dental caries instrument. Body Mass Index measurement was done also. Data were analyzed with Independent *t*- test and Pearson correlation
Result: The average of dental caries and BMI of children with brushing teeth and none are DMF-T 2.89:4.13 dan BMI 17.47:15.74 (kg/m^2). There are significant differences of dental caries and BMI between two groups ($p < 0.05$). There are significant correlation between dental caries and BMI ($r = 0.841$)
Summary and conclusion: The Children with brushing teeth everyday at school have lower dental caries and better BMI than none. The more the caries, the lower BMI. Brushing teeth everyday at school can impact on the growth and development of kindergarten children to be better.

P130
Brushing With Chocolate
Tenzin Pelki Dekeva, Anusha Parasher, Tohina Mujoo
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Aim and purpose: To review the effect of theobromine on oral health in comparison with fluoride substances.
Materials and method: Literature reviews from various journals were assessed beginning from 2002 to 2013 revealing extensive researches done on the positive effects of the bromine on dental decay. Dental caries is a disease that affects millions of people across the world. Consumption of cariogenic substances like chocolate acts asa factor in development of caries. However, theobromine, an organic substance found in high concentrations in cocoa is said to enhance remineralization of the tooth. It increases the size of the hydroxyapaptite rystals in enamel which makes the tooth less vulnerable to cavitations.
Result: Through current researches, application of theobromine has proven to help strengthen teeth more effectively and has consistently outperformed fluoride in clinical tests. This suggests that enamel surfaces subjected to theobromine have greater integrity and are more resistant to bacterial attack. It is a cost effective alternative to fluoride without the adverse effects of fluorosis.
Summary and conclusion: To summarize, theobromine has been shown to increase the micro-hardness of enamel which aids in caries control. Due to its minimal side effects, it can also be used for pediatric patients.

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P131

Modern Technological Prevention of Dental Caries

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Aim and purpose: This poster highlights many advance technology to prevent caries like blue tooth device for pH detection, gene therapy for modifying the bacterial genetic pattern that are under research and can provide a glittering future to dentistry.
Materials and method: One of the major diseases affecting mankind is caries. Dental caries is one which remains a puzzle for the present generation. Prevention of dental caries remains an enigma to researchers and dentists. The combination of genetics, engineering and biotechnology combined with dentistry resulted in a new era of modern dentistry with answer to these mysterious questions. Few researchers in their early stages have provided that many latest methods with superior technology are more effective in prevention with minimal intervention in treatment of caries.
The latest method in caries prevention are: Bluetooth device which sends signal to mobile while pH is <5.5, gene therapy modifying the bacterial genetic pattern probiotecs overgrowing the pathogens. Nanobiotics fighting the pathogen and the use of antibacterial composites.
Result: The promising answer is that if dental practitioners adapt themselves to future techniques, "dental caries" the hidden engima can be shrunken in the bud stage.
Summary and conclusion: Exploring these various future technologies by continued research and bringing them into dental practice shows great promise to dental caries.

P132

To Evaluate the Effect of Various Chewing Gums on Salivary pH

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Aim and purpose: To evaluate the effect of various chewing gums on salivary pH.
Materials and method: The study was done on 30 children 6–12 years of age.
Subjects were being divided equally into two groups-the experimental group and the control group. The experimental group will be further divided into two –the one group chewing the sugar free gum and the one group chewing the sugar containing gum. The subjects would be asked to chew gums and pH of the saliva will be noted with the help of pH meter before chewing, and subsequently after chewing at intervals of 5, 10 and 15 min after chewing gum respectively.
Result: The results showed that the there was significant difference in the normal oral pH compared with that of the experimental group.
Summary and conclusion: Sugar free gum is a food of choice in promoting salivary flow thereby reducing the acidogenicity of oral cavity and resulting in reduction of caries.

P133

Impact of Smoking on Periodontal Health – A Clinicobiochemical Correlation

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Aim and purpose: To study the impact of smoking on periodontal health through biochemical estimation of total antioxidant activity in the Gingival crevicular fluid (GCF) and saliva of smokers and non smokers and correlating it with the clinical periodontal parameters.
Materials and method: 50 male subjects, 30 smokers (smoking = 10 cigarettes/day) and 20 non smokers, aged 35–60 years were evaluated after the approval from the institutional ethical committee. Clinical parameters recorded were plaque Index (Silness and Loe), probing pocket depth and attachment loss. Both the smokers and non-smokers were subdivided into three subgroups based on loss of attachment as no, mild and moderate periodontitis. Their GCF and saliva samples were analysed for total antioxidant activity using spectrophotometric assay.
Result: Two way ANOVA analysis of the smoking group showed that smoking produced a highly significant effect on probing depth and attachment loss ($p = 0.000$). Intergroup comparison of the total antioxidant activity of smokers and non smokers using Mann Whitney test revealed a significant suppression in the levels in both GCF and saliva ($p < 0.05$). Furthermore, within the smokers a significant suppression of the antioxidant levels was observed when the three subgroups (no, mild and moderate periodontitis) were compared with each other ($p < 0.05$). A similar comparison within the non-smoking did not produce statistically significant results ($p > 0.05$). This shows that there is a significant correlation between the periodontal parameters and antioxidant levels in smokers.
Summary and conclusion: Smoking produces oxidative stress in the body which promotes the progression of chronic periodontitis.

P134

Effect of Cinnamon Extract on Periodontal Health – Randomized Control Trial

Ankita Jain
Teerthanker Mahaveer Dental College & Research Centre

Aim and purpose: To compare the effect of Cinnamon extract, chlorhexidine mouthwash and placebo on the dental plaque level and gingivitis.
Materials and method: The subjects of 21–25 years age group, of both sexes were randomly divided into three groups, i.e., the Cinnamon group, the chlorhexidine gluconate mouthwash group and the Placebo (distilled water) group. Ethical Clearance was obtained from Institutional Review Board of Teerthanker Mahaveer University. The data was collected at the baseline, 15th day and 30th day; the plaque was disclosed using erythrosine disclosing agent and their scores were recorded using the Quigley and Hein plaque index modified by Turesky-Gilmore-Glickman and the gingival scoring was done by Gingival Index of Loe and

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Silness. ANOVA followed by post-hoc LSD were used for analysis. p-value of 0.05 was taken to be significant.
Result: Our result showed that the chlorhexidine group shows maximum decrease in both plaque and gingival score followed by Cinnamon extract but the result was statistically insignificant. The Plaque and gingival scores remains almost same in Saline group.
Summary and conclusion: The results of the present study indicate that Cinnamon may prove to be an effective agent in improving periodontal health.

P135
Effect of Diabetes Mellitus on Periodontal Diseases
Kshitij Joshi
Tatyasaheb Kore Dental College and Research Centre

Aim and purpose: Diabetes Mellitus is a systemic metabolic disease posing threat to human health and requires more attention due to the long standing complications it delivers to the body. So, no escape lays even for the dental tissues specially, the periodontium leading to a disease process. The study purpose involves establishment of a relationship between diabetes mellitus and periodontitis.
Materials and method: This study involves conducting a systematic review of literature of the researches published on humans that describe variations associated with diabetes and periodontitis. Cross-sectional, longitudinal, cohort, case–control and other studies would be evaluated under this study and a thorough analysis of the same would be done.
Result: The majority of literature evident demonstrates an increase in the prevalence and severity of periodontal diseases in people with diabetes mellitus. Interpretation of published results are attributed to a number of factors: small sample sizes; faulty reporting standards of the type of diabetes; the presence of diabetic complications; the lack of longitudinal studies and control groups; and inadequate control of factors such as duration and level of control of diabetes.
Summary and conclusion: A large evidence base suggests that diabetes is associated with an increased prevalence, extent and severity of gingivitis and periodontitis. Diabetes is a complex disease characterized by numerous variables that can influence the development of complications, including periodontitis. Periodontitis is said to be the sixth complication of Diabetes Mellitus. Also, poor metabolic control, as well as extended duration of the hyperglycemic state, is risk factors for periodontitis.

P136
Biochemical Correlations Between Capillar and Sulcular Blood Glucose Values of the Metabolic Status and Periodontitis
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Aim and purpose: The main objective of this study was to evaluate in a safe, fast and non invasive manner the patient's diabetic status by assessing sulcular blood glucose level during periodontal examination.
Materials and method: Laboratory investigations examining the blood glucose level within the capillaries (CBGL) and gingival sulcus (SBGL) were performed upon 30 non-diabetic patients and 30 diabetics, both with moderate to severe periodontitis, randomly selected from the patients undergoing routine periodontal clinical examinations. Statistical analysis was performed using Pearson correlation coefficient and *t*- student test.
Result: Our study allowed comparative evaluation of the blood glucose level in the capillaries and sulcus, in order to find out whether SBGL determination in the dental office, would be an accurate and fast meaning of glycemic status preliminary investigation. The results in mg/dl recorded mean capillary (MCBG) and sulcus (MSBG) blood glucose values from all samples of 190.57 and 168.6 respectively. MCBG level was 269.73 in the diabetic group and 111.4 in the systemically healthy group, while 240.27 MSBG in diabetics and 97.03 in non diabetics were registered. Moreover, there was a high correlation between MCBG and MSBG level in patients with various degrees of periodontal impairment.
Summary and conclusion: Considering the good correlation between CBGL and SBGL and the evidences that almost half of the diabetics remain undiagnosed, sulcular blood test may become an appropriate, fast, cheap and reliable method for potential diabetic patients identification during routine dental visits.

P137
Persistence of Positional Identity May Affect Bone Regenerative Capacity
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Aim and purpose: Previous studies suggest that genes associated with mineral density and bone mass are deferentially expressed in distinct skeletal sites. The aim of the study here was to investigate the stability of positional identity markers, Hoxa gene expression and transcription factors, in isolated adult rat osteoblasts derived from different sites in vitro.
Materials and method: Rat osteoblastic cells from femurs and calvariae were harvested as matched pairs of cultures from 4 male rats. Cells were expanded extensively in medium supplemented with FGF-2, and were shown to maintain their osteoblastic phenotype as characterized by alkaline phosphatase (ALP) staining, osteopontin (OPN), osteocalcin (OCN) expression and osteoblast-associated gene expression. The cells were collected and assessed for Hoxa gene expression (Hoxa1, Hoxa2, Hoxa4, Hoxa5, Hoxa7, Hoxa10 and Hoxa13) and transcription factors (Msx2, Irx5 and Tbx3) using quantitative RT-PCR.
Result: Differences in Hoxa gene expression were maintained for up to at least 10 passages, with calvarial cells remaining Hoxa-ve throughout. The transcription factors Msx2 and Irx5 were consistently more highly expressed in calvarial cells, whereas Tbx3 expression was elevated in femoral cells. In addition, the more

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mature the calvarial osteoblastic cells were, the greater the difference in Msx2 and Irx5 expression was observed.
Summary and conclusion: The results demonstrate persistence of expression of positional identity gene markers for prolonged periods in culture. This may suggest that the positional memory during embryonic body patterning is retained in adult organisms and may affect tissue plasticity and may also affect bone regenerative capacity and regeneration.

P138
The Effect of Omega-3 Fatty Acids on Chronic Periodontitis
Basma Mostafa Zaki
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Aim and purpose: The aim of the present study is to assess the effect of Omega-3 fatty acids, as an adjunct therapy in management of chronic periodontitis in postmenopausal osteoporotic females.
Materials and method: Twenty-four postmenopausal females having osteopenia or osteoporosis and chronic periodontitis were included in this study. These patients were divided into two groups: The first group (the Omega-3 group) included 13 subjects. They were given 1 g Omega-3 daily, plus Rutin and Vitamin C (50 mg Rutin + 100 mg vitamin-C) once daily. The second group (the control group) consisted of 11 subjects and was only given Rutin and vitamin C once daily. These medications were given for 9 months. Scaling and root planing were done to all patients before starting the medical treatment. Periodontal Indices measured at 6 and 9 months were: Plaque Index (PI), Papillary Bleeding Index (BPI), Pocket depth (PD) and Clinical Attachment Loss (CAL). Radiographic evaluation was also done.
Result: The results showed that all the periodontal indices and radiographic measurements were improved in both groups after 6 and 9 months intervals, some were significant favoring omega-3 group (PI after 9 months), others were significant favoring control group (PBI after 6 and 9 months, and pocket depth after 9 months), meanwhile, others were non-significant for the two groups (CAL after 6 and 9 months, plaque index and pocket depth after 6 months).
Summary and conclusion: It can be concluded that the use of Omega-3 is a beneficial nutritional supplementation in management of chronic periodontitis.

P139
Technological Advancements in Bone Graft Materials Used in Periodontics
Anusha Parasher, K. Meena Anand, Tenzin Pelki Dekeva
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Aim and purpose: To review the technological advancements in bone graft materials used in periodontics.
Materials and method: Literature reviews from various journals were assessed beginning from 1992 to 2012. Bone grafts are any implanted material that alone or in combination with other material promotes a bone healing response by providing osteogenic, osteoinductive or osteoconductive properties. Using bonegrafts for reconstructing periodontal bony defects dates back to Hegedus (1). Therationale of using bone grafts is to promote wound healing, decrease clinical bone defect, periodontal regeneration and to preserve and augment bone for future implant placement.
Bone grafts of different types such as autologous (bone from the iliac crest, mandibular symphysis), allografts (freeze dried bone allograft, Demineralized FDBA) or alloplasts (polymer based, growth factor containing, ceramic based bone, porous titanium granules), xenografts (bovine bone grafts) are found to be commonly used for augmentation of the bone (2).
Result: Bone auto graft alone or together with other bone substitutes has been the biomaterial of choice for clinicians worldwide. However different xenogenic, allogenic and alloplasts have shown promising results in many bone augmentation procedures.
Summary and conclusion: There is no doubt about the clinical benefits of bone grafts, but at the same time there has been a need to explore advanced bone graft materials which has been led by a prevalent increase in the number of surgical procedures that require bone grafts with consistent biological performance. The present study is focused on exploring the evidence based material from the available literature of various sources.

P140
Non Surgical Management of Self Inflicted Gingival Injury in a Schizophrenic Patient- A Case Report
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Aim and purpose: Schizophreniais a brain disorder that affects the way a person acts and sees the world. People with schizophrenia have an altered perception of reality, often a significant loss of contact with the reality. Some of the most common early warning signs of schizophrenia includes extreme reaction to criticism, deterioration of personal hygiene, depression, odd or irrelevant statement etc.
Materials and method: A 24-year old female patient with similar features came to the department with the chief complaint of bleeding and receding gums; upon examination it was found that gingival mucosa in relation to maxillary right canine to first molar was lacerated. Detailed history of the patient showed that she was suffering from schizophrenia and was undergoing treatment for the same; she deliberately brushed hard on the respective region causing recession and laceration.
Result: Following diagnosis, non surgical management of the lesion was done including scaling and root planning. Four weeks after treatment, the patient was reviewed and in the follow up it was observed that the gingival lesion had resolved.

P141
Effect of Periodontal Therapy on Lactoferrin Levels in Gingival Crevicular Fluid
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Aim and purpose: Evaluation of Lactoferrin quantification as a sensitive and objective method of detecting degree of periodontal inflammation, oxidative stress and monitoring the effects of periodontal therapy.

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Materials and method: Fifty subjects were divided into two groups based on gingival index, probing pocket depth, clinical attachment loss and alveolar bone loss: Healthy group and periodontitis group with generalised chronic periodontitis. Non surgical periodontal therapy was rendered and crevicular fluid samples collected at baseline and 4 weeks after therapy for Lactoferrin quantification using enzyme-linked immunosorbent assay. Correlation between clinical parameters and lactoferrin levels was drawn and analyzed for both groups.

Result: The mean level of crevicular Lactoferrin in periodontitis group was 1857.21 ng/ml. The mean level decreased to 1415.03 ng/ml after treatment. The lowest Lactoferrin concentration was seen in healthy group (75.34 ng/ml). All clinical parameters correlated positively with Lactoferrin levels

Summary and conclusion: Lactoferrin level was higher in periodontitis group as compared to healthy subjects and reduced with periodontal therapy. Higher levels were associated with higher values of clinical parameters, both before and after therapy. The data indicates that Lactoferrin plays an important role in periodontal disease and crevicular Lactoferrin quantification can be marker for detecting periodontal inflammation, oxidative stress and monitoring periodontal therapy.

P142

Dental Neglect and Oral Health of Preschool Children

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Aim and purpose: Dental neglect is a major public health issue now-a- days which needs a foremost attention of health care professionals. The lack of parents care regarding child's oral health, which characterizes neglect, may lead to a high prevalence of caries. Therefore, the objective of this study was to analyze the relation between dental caries and dental neglect by mothers in preschool children.

Materials and method: Across-sectional survey was conducted on 825 mothers and preschool children attending Anganwadi and day care centers in Udupi Taluk. Dental caries was assessed using WHO Oral Health Assessment Form, 1997. Dental neglect score of the mothers was assessed using "Dental Neglect Scale." Data was analyzed using SPSS 16.0 and independent *t*-test was applied considering level of significance at p-value < 0.05.

Result: Mothers of anganwadi children (13.17 ± 3.9) had significantly higher dental neglect score than mothers of day care centre (11.98 ± 3.7). The mean deft score was significantly higher among anganwadi children (3.74 ± 3.58) as compared to day care children (3.26 ± 3.32). Children of mothers with "high dental neglect score" (more than 12) had significantly higher decayed teeth, and caries experience as compared to children of mothers with "low dental neglect score" (<12).

Summary and conclusion: The results of this study show that there is a relation between caries experience and children's oral health perception by mothers. The dental neglect scale may be useful in determining the parents with poor perceptions and designing and targeting the dental health promotion strategies accordingly.

P143

Public Health and Association's Membership: Desires/Duties of Oral Health Professionals

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Aim and purpose: The Dutch Dental Hygienists Association (NVM) is a non-profit organization in the public health sector and its members are respectful partners in oral health care (Jongbloed-Zoet et al., 2012). Moreover, NVM-dental hygienists reported a very high level of work engagement (Buunk-Werkhoven et al., 2014). To gather information and to get more insight in the dynamics of the profession and the NVM, desires and duties of the members are investigated.

Materials and method: In the autumn of 2013 a digital questionnaire was administrated to 2215 NVM members. Student members, extraordinary members and members without email address were excluded. The questionnaire consisted of 62 questions and included demographic questions.

Result: The response rate was 40% and out of 845 NVM dental hygienists, only 2.6% were male, and age was divided into: young (under 36 years), medium (36–45 years) and old (over 45 years). The majority works more than three days per week (>25 h/week), and 68.3% is registered in the KRM. 86% believed that a NVM-membership strengthens their position and contribution to oral health care.

Summary and conclusion: NVM-dental hygienists are young and highly engaged to their work: they highly value quality. NVM priorities concerning public health issues and oral health care by dental hygienists are according to the members all equally important. An association's membership strengthens their position besides the fact that dental hygienists as oral health professionals contribute to public health care. The desires of NVM-dental hygienists could provide guidance for the future of oral health care nationally.

P144

Early Childhood Caries and Oral Health-Related Quality of Life

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Aim and purpose: To study the impact of Early Childhood Caries (ECC) on the Oral Health-Related Quality of Life (OHRQoL) of preschool children in Mysore city, India.

Materials and method: A stratified random sample of 329 preschool children (2–5 years) underwent an oral examination to assess Early Childhood Caries (ECC). Ethical approval was obtained from Institutional Ethical Committee. Dmft was categorized according to the severity of ECC (0 = caries free, 1–5 = low severity, ≥6 – high severity). Their mothers answered a pretested questionnaire on Oral Health-Related Quality of Life (OHRQoL) using Early Childhood Oral Health Impact Scale (ECOHIS). Descriptive analysis, chi-square test and spearman rank correlation test were used.

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Result: There was a significant difference between categories of ECC and all the domains of OHRQoL ($p < 0.05$). Mean ECOHIS scores were significantly higher for the low and high severity group than for the caries free group ($p < 0.001$). A strong correlation ($r = 0.568$; $p < 0.01$) was found between caries status and ECOHIS scores.
Summary and conclusion: An increase in the severity of ECC resulted in an increased negative impact on quality of life of the child.

P145
Icd-10-ca Coding Accuracy for Dental Problems in Hospital Emergency Department
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Aim and purpose: Emergency department (ED) visits for dental problems not associated with trauma may be a sign of unmet need for dental care. The objective of this study was to determine the accuracy of the International Classification of Diseases codes (ICD-10-CA) for EDvisits for dental problems not associated with trauma.
Materials and method: ED visits in 2008–2009 at one hospital in Toronto were identified if the discharge diagnosis in the hospitals administrative database system was an ICD-10-CA code for a non-traumatic
Dental problem (K00-K14). A random sample of 100 visits was selected and the medical records for these visits were reviewed by a dentist. The description of the clinical signs and symptoms was evaluated by the dentist and a diagnosis was assigned. This diagnosis was compared with the diagnosis assigned by the ED physician and the ICD-10-CA code assigned to the ED visit.
Result: The 100 ED visits reviewed were associated with 16 different ICD-10-CA codes for non-traumatic dental problems. Only 2% of these ED visits were clearly caused by trauma. The ICD code K0887 (toothache) was the most frequent diagnostic code (31%). We found a 43.3% disagreement between the discharge diagnosis reported by the ED physician and the diagnosis identified by the dentist reviewing the chart, and 58.0% disagreement.
Summary and conclusion: There are substantial discrepancies between the ICD-10-CM diagnosis assigned in administrative databases and the diagnosis assigned by a dentist reviewing the chart retrospectively.

Poster Session 7 (P146–P175)

Theme: Dental Treatment and Restorative Dentistry

P146
Mandibular 1st Molar With Radix – An Endodontic Challenge
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Aim and purpose: To study variations of Mandibular molar includes an additional root either placed distolingually called as radix entomolaris (RE) or in very rare cases located mesiobuccally called radix paramolaris (RP). It reports the diagnosis and successful endodontic management of Mandibular first molar with radix with the help of 5 case reports.
Materials and method: The tooth was anesthetized and isolated under rubber dam. Caries were excavated and a standardized trapezoidal access cavity was made using endo access burs. Two distal (one of which was located lingually) and two mesial canal orifices were located using an endodontic explorer. The canal lengths were determined using radiograph and an apex locator. Initial glide path was prepared till 15# k-files in all the canals which were followed by use of Sx for opening orifice and final cleaning and shaping was performed using single wave one (red) primary reciprocating single file system. Irrigation between each instrument was done using 5.25% sodium hypochlorite and RC-Help was used as a lubricant for each file. A final rinse was done using sodium hypochlorite followed by 17% EDTA. After the master cone selection canals were obturated with laterally condensed gutta-percha and AH Plus sealer.
Result: The initial diagnosis of radix before root canal treatment is important to facilitate the endodontic procedure and to avoid missed canals. Pre-operative periapical radiographs exposed at two different horizontal angles are required to identify these additional roots.
Summary and Conclusion: In cases of radix, a careful observation of radiograph, viewing the access cavity floor under magnification and performing the various steps of endodontic procedure helps in achieving success.

P147
Reattachment of Complicated Crown Fracture
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Aim and purpose: To restore the function and aesthetics of fractured tooth conservatively.
Materials and method: An 11 year old boy was reported 3 days after trauma to the left maxillary central incisor due to fall while playing. The boy reported with a tooth fragment which was then kept in 0.12% Chlorhexidine till the further procedures were undertaken. X-Ray of the involved tooth showed pulp involvement with fracture line not extending subgingivally. Single sitting root canal treatment was done followed by sectional obturation and post placement and replacement of the fractured coronal fragment using composite adhesive system.
Result: Follow-up after 1, 3 and 6 months of the tooth showed stability with no mobility and tenderness on percussion with acceptable functional and aesthetic performance.
Summary and conclusion: The fracture of a tooth is one of the most traumatic incidents for a young patient. It has been found that there is a positive emotional and social response from the patient to the preservation of natural tooth structure. Hence, reattachment of the intact fractured segment can be considered as an ultraconservative, simple and immediate method for aesthetic rehabilitation.

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P148

Children's Psychological Health on Dental Visits

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Aim and purpose: Dental anxiety is a common problem which appears mostly in childhood. Children fear and anxiety is the most important blocker on oral care and treatment delivery. The main goal is to offer suitable method with psychological base to establish children tranquility and calmness on dental visits. Also to consider the prevalence, development and implication of children's dental anxiety.
Result: Going slowly and taking baby steps, help many dentists, to make giant strides and gain confidence quit rapidly. The physical environment plays an important role in easing fears and anxiety. Like the dental team wearing non clinical cloths instead of white coat, getting rid of dentist malodor, playing music in background can help by removing and replacing frightening stimuli.
Summary and conclusion: The techniques of using non –threatening language being interactive, having direct interaction, taking frequent breaks, showing interest, making positive comments, telling stories to children; made them to be more familiar and cooperative: more confident and comfortable, prevented children stress and fear in dental visit, not decreased the psychological health and increased their cheerfulness.

P149

Reattachment of Tooth Fragment- A Report of Two Cases

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Aim and purpose: Coronal fractures of the anterior teeth are a common form of dental trauma that mainly affects children and adolescents. One of the options for managing coronal tooth fractures, when the tooth fragment is available, is reattachment of the dental fragment. Reattachment of fractured fragment can provide good and long lasting aesthetics.
Materials and method: This paper presents two cases of crown-fracture managed by fragment reattachment. Fracture of a tooth be a most traumatic incident for a young patient, but it has been found that there is a positive emotional and social response from the patient to the preservation of natural tooth structure. Tooth fracture reattachment allows restoration of the tooth with minimal sacrifice of the remaining tooth structure. This technique is less time consuming and provides a more predictable long-term outcome than when direct composite is used.
Summary and conclusion: With the material available today in conjunction with an appropriate technique, aesthetic results can be achieved with predictable outcomes. Thus, the reattachment of a tooth fragment is a viable technique that restores function and aesthetics with a very conservative approach.

P150

Knowledge of Rubber Dam Use Among Undergraduate Students in Fiji

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Aim and purpose: To determine the level of knowledge of undergraduate dental students on the acceptable time taken for rubber dam placement and to compare rubber dam usage among different ethnic groups and genders.
Materials and method: Appropriate approvals were obtained from the Department of Oral Health Research Committee and the College Research Committee of Fiji National University. A cross-sectional study was done using a questionnaire. 48 item structured questionnaires were distributed among 3rd year students (n = 23), 4th year (n = 11) and 5th year dental students (n = 13) at FNU. The questionnaires for each level was distributed and collected within a week. All data was analyzed using epi-info (3.5.1).
Result: Among the third year dental students, majority (71%) stated that the acceptable time for rubber dam placement was between 2 and 5 min, 64% of the fourth years also stated this time frame and 92% of the fifth years stated 2–5 min as an acceptable period as well. 78% of males and 77% of females stated that a higher standard of restoration is achieved with rubber dam use. 77% of i-taukei, 91% Fijians of Indian origin and 74% Pacific Islanders and Others indicated that a higher standard of restoration was achieved with the use of rubber dam.
Summary and conclusion: Majority of the undergraduate students stated 2–5 min as an acceptable time taken for rubber dam placement. There was no significant difference in rubber dam use among the males and females. A higher percentage favoured the use of rubber dam among the Fijians of Indian origin.

P151

Oral Health Quality of Life Relation With Dental Implants Knowledge

Josip Kranjcic, Denis Vojvodic, Ivana Juros, Jasmina Stipeticovcaricek, Sanja Persic
Affiliation missing

Aim and purpose: The aim of this study was to examine the correlation between the oral health related quality of life (OHRQoL) and knowledge of dental implants (DI) among elderly patients (candidates for DI supported dentures) wearing complete removable dental prosthesis (CRDP).
Materials and method: Total of 301 participants (average age of 74 years) wearing CRDP were included in this questionnaire-based study. The questionnaire consisted of three sections; general information, Croatian version of Oral Health Impact Profile (OHIP)-49 questionnaire, and 12 questions evaluating patients knowledge of DIs. The results obtained were statistically analyzed using SPSS statistical software at significance level of 0.05.
Result: The mean OHIP summary score value obtained in this study was 26.52 (minimal value 0.0, and maximal value 175.0).

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Pearson's coefficient of correlation between the OHIP summary score (SC) and the answers about the knowledge of DIs revealed weak correlation (SC with participants understanding of the implant insertion procedure, $r = -0.134$; SC with knowledge about required type of anesthesia $r = -0.133$, about DI therapy costs $r = -0.126$, about participants decision on DI treatment $r = -0.206$, $p < 0.05$) or no correlation among variables.

Summary and conclusion: According to weak correlation or no correlation between OHRQoL and knowledge of DIs it could be concluded that more dissatisfied participants (wearing poorly fitting removable prostheses) are also poorly informed about DIs and DIs treatment options. That leads to the conclusion that dissatisfied participants are disappointed with previous prosthetic treatments and therefore not interested and not looking for other treatment options to improve their oral health.

Keywords: oral health, quality of life, dental implants, dental prosthesis.

P152

Comparing the Efficiency of Using Crowns With Temporary Or Permanent Cementing

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Aim and purpose: The primary objective is to make a distinction between the efficiency of using crowns that are temporary and crowns that are permanently cemented in the mouth of the patient by measuring the mastication force with the help of individually constructed electronic gnathodynamometer.

Materials and method: The investigation was conducted on 250 patients from our everyday clinical practice, in which the crowns were applied provisionally at the beginning with the appropriate temporary dental cement. The measurement of the masticatory force was done after 24 h. After 8 days the crown was cemented with permanent dental cement, and the masticatory force was measured after 24 h, taking into account the adjustment period after the use of the cement and the plausible resulting pain. We devised a questionnaire for each patient, in which we noted the subjective answers for their convenience during each phase of the treatment and compared it to the masticatory force in that specific period.

Result: The results of the subjective answers from the patients showed that all of the patients (100%) felt that the efficiency of the permanently cemented crown was much better. The measurements of the masticatory force in average values gave us corresponding results and showed lower masticatory force for the temporary cemented crown ($x = 175.72$N) in comparison with the permanently cemented crown ($x = 238.25$N).

Summary and conclusion: We concluded that whenever we are sure of the well-being of the crown carrier, permanently cementing the crown, especially if it is a porcelain crown, should be a choice for every therapist.

P153

Evaluation of Different Treatment Modalities On Sleep Bruxism-An In-Vivo Study

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Aim and purpose: In sleep Bruxism patients: A randomized controlled trial study.

Result: Both MOS and MAD significantly reduced PSQI score and EMG activity of masseter in sleep bruxism subjects after 3 months ($p < 0.05$). The MAD showed greater reduction in sleep bruxism episodes per hour (78.3%) after 3 months as compared to MOS (50.4%).

Summary and conclusion: MOS and MAD showed an improvement but long term improvment is better with MAD.

P154

Nanodiamonds in Dentistry

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Aim and purpose: When it comes to diamonds, size may not matter. A material that is safe, commonly found or widely made, and versatile is Nanodiamonds, which are about 20,000 times smaller than a strand of hair which help deliver bone growth-promoting proteins more effectively than conventional approach.

Materials and method: Nanodiamonds can be used as a way to deliver solutions that include proteins for bone growth. Surface properties (including topography and chemistry) of diamond coatings can be controlled to either promote or inhibit an osteoblast function, which implies that various forms of diamond coatings can be used to either support or inhibit bone growth.

Result: NanoCrystalline Diamond (NCD) coatings combine a very low surface roughness with the outstanding diamond properties, such as superlative.

P155

Single Visit Natural Tooth Pontic With Fiber Reinforced Composite

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Aim and purpose: The immediate replacement of a natural anterior tooth has great psychological value for most patients. Natural tooth pontics can be placed as interim restorations until an extraction site heals if conditions require a conventional bridge or an implant.

Materials and method: A 33 year old man with advanced periodontitis referred from Periodontology department to Restorative department of Tehran University. After phase 1 therapy, due to active pus secretion and mobility grade 3, maxillary and Mandibular central incisors were extracted the day before. After cleaning

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extracted teeth and cutting the roots, they were sealed with composite resin and connected to adjacent teeth with fiber resin. Since Mandibular teeth had mobility of grade 2, splinting was done.
Result: The technique of using a patient's own natural tooth as pontic in a resin composite –reinforced glass-fiber framework is a conservative, esthetic, cost effective and practical treatment.
Summary and conclusion: It also protects the extraction socket and forms an ovate pontic contact surface.

P156
Fabrication of Functional Palatal Salivary Reservoir in Xerostomic Patient
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Manubhai Patel Dental College

Aim and purpose: In the modern world of today, Can the life of Edentulous Xerostomic patient be improved.
Materials and method: This report describes a novel technique for fabrication of functional palatal salivary reservoir in the edentulous Xerostomic patient who may suffer from dry mouth, painful burning oral mucosa, furrowed atrophic tongue with candidiasis, dry lips, difficulty in swallowing and speaking, loss of taste sensation and burning of eyes. Dental management aims at treating oral candidiasis, enhancing salivary output, saliva substitution, hydration and providing rehabilitation which may adversely affect the individual 's personal and social life quality. This technique uses acrylic resin based heat polymerizing resilient liner. It also lowers the incidence of Candida albican's infection which is more common with silicone based resilient liners.
Statistics: Volume of reservoir is around 5 ml. This mean number of swallowing cycle is approximately 600 cycles/day or approximately 25 cycles/h, amount of substitute released per functional cycle was calculated to be about 0.19 ml which is comparable to normal saliva flow. The liner loses it resiliency in 12–18 months, and the entire floor of reservoir may require replacement which can be done in single appointment.
Result: The use of salivary substitutes can improve lubrication, provide irrigation for dry mucosa improves retention of removable prosthesis and also provide significant relief from symptoms.
Summary and conclusion: The purpose of the technique is to fabricate a prosthesis that makes swallowing a control mechanism for the flow of saliva substitute and thus can help significantly in improving the quality of the Xerostomic patients. Further improvement can be made to overcome the various problems and make it more acceptable by the patient.

P157
Retention of Complete Cast Crown With Different Auxiliary Retentive Features
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Aim and purpose: To evaluate retention of complete cast crown teeth with different auxiliary retentive features with two different crown heights.
Materials and method: Study was done on freshly extracted teeth which were divided into two main groups for two different crown heights which were further divided into subgroups depending on the incorporated retentive features.
Result: Results showed there was statistically significant difference between adequate and inadequate crown height and different auxiliary retentive features.
Summary and conclusion: Complete cast crown with adequate crown height exhibited greater retention compared with inadequate crown height.

P158
Accuracy of Virtual Models in the Assessment of Maxillary Defects: Effects of Scan Parameters
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Aim and purpose: The aim of the present research was to assess the reliability of measurements performed on three-dimensional virtual models of maxillary defects obtained from CBCT and 3d optical scanner.
Materials and method: Mechanical cavities simulating maxillary defects were prepared on the hard palate of 9 cadavers. Images of the cadavers were obtained using a CBCT unit at 3 different FOVs and voxel sizes: (i) 60 × 60 mm FOV, 0.125 mm^3 (FOV60); (ii) 80 × 80 mm FOV, 0.160 mm^3 (FOV80), and; (iii) 100 × 100 mm FOV, 0.250 mm^3 (FOV100)
Result: p-values were found to be smaller than 0.05 on the basis of methods and observers suggesting that measurement variations were effected from both methods and observers along with different cadaver specimens' used. 3d scanner measurements were closer to Gold Standard measurements when compared to CBCT measurements.
Summary and conclusion: For the assessment of artificially created maxillary defects we found no difference between various CBCT FOV's used, however; 3d scanner measurements were more accurate than those of CBCT.

P159
Presurgical Nasoalveolar Moulding
Padmakar Baviskar, Sandeep Gurav
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Aim and purpose: To discuss the appliance design, clinical management and biomechanical principles and application of Presurgical Nasoalveolar moulding (PNAM) in neonates with cleft lip and cleft palate.
Materials and method: Presurgical Nasoalveolar moulding has been employed as an adjunctive neonatal therapy for the correction of cleft lip and palate. It consists of active moulding of the alveolar segments as well as the adjacent soft tissues and reduces the severity of the initial cleft, alveolar and nasal deformity.
Result: It offers the surgeon and the patients, benefits associated with repair of a cleft deformity with minimal post surgical severity. Long term studies on PNAM therapy indicate better lip

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Summary and conclusion: A Maxillofacial defect, congenital or acquired, leads to a marked loss of both, functional efficiency and esthetic profile of the affected individual. Cleft Lip and palate is a congenital defect of the palate and the middle restoration of these defects is important for function.

P160

Prevalence of Gingival Recession at Adult Population

Yuliya Chumakova

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Aim and purpose: One of the most common aesthetic concerns associated with the periodontal tissues is gingival recession. Gingival recession is characterized by displacement of gingival margin apically from cemento-enamel junction and exposure of root surface. The aim of study was to investigate the prevalence and severity of gingival recession at adult.

Materials and method: The participants in the study were 238 patients, 20–68 years of age (mean age of 41.6 ± 0.7 years) that sought dental treatment in the department of Periodontics in an institute of Ukraine, Odessa. All periodontal clinical examinations were assessed using the Florida Probe System, a dental chair and one examiner.

Result: Statistical analysis showed that 230 participants (96.6%) had periodontal disease. Mean number of teeth examined per subject was 27.76 ± 0.23. The mean number of teeth with gingival recession per subject was 12.47 ± 0.49 (or 45.33 ± 1.78%). The prevalence of recession was 89.9%; only 24 subjects presented no sites with recession. The mean number of teeth with recession on the mandible (6.87 ± 0.29) was higher, than on the maxilla (5.66 ± 0.27, $p < 0.005$). 24.7% participants had localized gingival recession and 75.3% – generalized recession. The prevalence of 1–3 mm recession was 99.0%, 3–6 mm – 43.3% and 6+ mm – 2.6%.

Summary and conclusion: The high prevalence of gingival recession is established that, first of all, is connected with existence of periodontal diseases. Progressive increase in frequency and extent of recession is observed with increase in age. The people who smoke have more gingival recession than nonsmokers.

P161

Biomaterials: A Step Further in Bone Regeneration

Hiba Hamid

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Aim and purpose: To discuss recent development related to bone grafting in order to clarify its role in regeneration.

Materials and method: (i) Objectives of bone grafting, (ii) different types of bone grafts, (iii) surgical procedures, (iv) recent advancements and its limitations.

Result: Regeneration of the alveolar bone destroyed by periodontitis till date remains the biggest challenge in the field of dentistry. In order to achieve its regeneration great attempts have been made using bone grafting and other regeneration procedures. Technique of bone grafting has advanced with the availability of improved methods for root detoxification, a better understanding of wound healing, application of the principles of guided tissue regeneration, and use of growth factors to enhance healing. However, combination of these requires further investigation, and it still needs to be determined whether complete regeneration can be practically achieved.

Summary and conclusion: Through several studies periodontal bone grafts have shown the potential to regenerate the periodontium damaged by periodontitis. However, complete regeneration has not been achieved till date. Human studies averaged together have shown only 60% bone regeneration of the original defect.
This poster aims to review the recent development in the field of bone grafting and its possible limitations.

P162

Comparative Study Between Conventional Orthodontics and Paoo

Anirban Chatterjee, Astha Agarwal

The Oxford Dental College, Hospital and Research Centre

Aim and purpose: The aim of this paper is to study the rapid orthodontic treatment of class 2, type 1 malocclusion with PAOO technique as compared to conventional orthodontic treatment and the main objectives were retraction of the maxillary anterior teeth to reduce upper and lower-lip protrusion, correction of over jet and overbite and correction of proclined upper incisors in remarkably reduced treatment time.

Materials and method: A controlled, comparative study was designed with 20 subjects. The study comprised of 10 subjects who acted as experimental group and 10 as control groups. All the subjects in the study complained of protruded teeth in upper front tooth region. Their intraoral examination revealed Angles class II div 1 malocclusion with increased overjet and requiring extraction of all four first premolars. Subjects with periodontal disease or root resorption are excluded from the study. The subjects who desires faster orthodontic treatment were assigned in the experimental group and rest in (control group) were treated by conventional orthodontics.

Result: Post operative healing was uneventful as orthodontic treatment progressed. Favorable changes were observed. No root resorption or significant crestal bone loss was seen on the radiographs after completion of the treatment in the experimental group. Neither relapse was seen after the complete treatment. The total active treatment time for the experimental group was 4–6 months as compared to the control group of 9–11 months, which is statistically significant.

Summary and conclusion: PAOO is an effective and efficient procedure that not only markedly reduces the treatment time but also increases the alveolar bone thickness and no relapse of the orthodontic treatment is seen.

P163

Bioengineered Teeth (Bioteeth)

Shehlanoor Saiyed

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Aim and purpose: Fully functional bio-engineered tooth replacement, as an organ replacement therapy.

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Materials and method: Transplantation. The upper 1st molars of 5-week-old mice were extracted and mice were maintained for 3 weeks to allow or natural repair of the tooth cavity. Following repair, an incision of approximately 1.5 mm in length was made at the extraction site to access the alveolar bone. A bony hole of about 0.5–1.0 mm in diameter was created in which explants of tooth germ were then transplanted. Incised oral mucosa was then sutured and the mice containing the transplants were fed a powdered diet and skim milk until the regenerated tooth had erupted. Following steps were taken during analysis:

(1) Oral photographs of a bio-engineered tooth were done.

(2) Histological analysis during the eruption processes was taken.

Result: (i) Eruption and Occlusion of a Bio-engineered Tooth. (ii) The bio-engineered tooth, which was erupted and reached occlusion in the oral environment, had the correct tooth structure, hardness of mineralized tissues for mastication, and responsiveness to experimental orthodontic treatment. (iii) Results thus demonstrate the potential of bio-engineered organ replacement for use in future regenerative therapies.

Summary and conclusion: This study provides evidence of a successful replacement of an entire and fully functioning organ in an adult body through the transplantation of bio-engineered organ germ, reconstituted by single cell manipulation in-vitro. The study therefore makes a substantial contribution to the development of bio-engineering technology for future organ replacement therapy. Such studies will help to achieve the realization of tooth regenerative therapy for missing teeth.

P164

Periodontopathogens in Coronary Atheroma; A Perio Systemic Link

Col S. K. Rath

Armed Forces Medical College, Pune, India

Aim and purpose: There has been increasing attention paid in recent years to the possibility that oral bacterial infection, particularly periodontal disease may influence the initiation and or progression of systemic diseases. These studies confirm the observation that heart disease is the most commonly found systemic condition in patients with periodontal disease. The present study intends to investigate the possible association between periodontal health and coronary artery disease by evaluating periodontal status, association between the periodontal plaque andcoronary atheromatous plaques for presence of micro organisms such as, *A. actinomycetemcomitans*, *P. gingivalis*, *P. intermedia* and *T. forsythia*.

Materials and method: A case–control study was designed with 07 patients who had underwent coronary endarterectomy for CVD and 28 controls. The periodontal examination for cases was performed 1 day before vascular surgery and the controls were clinically examined. The atheromatous plaque sample collected during endarterectomy and the intraoral plaque samples were subjected to PCR for identification of *A. actinomycetemcomitans*, *P. gingivalis*, *P. intermedia* and *T. forsythia*.

Result: The presence of periodontal bacteria DNA in coronary atheromatous plaques and sub gingival plaque samples of the same patients was confirmed by this study.

Summary and conclusion: A correlation was established between putative bacteria contributing to atheromatous plaques and species associated with periodontal disease. One particularly important study to be carried out is the investigation of a possible clinically meaningful reduction in coronary heart disease resulting from the prevention or treatment of periodontal disease.

P165

Immunomodulation: Changing the Paradigm in Management of Periodontal Diseases

Parul Lohra

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Aim and purpose: To establish soluble doxycycline as an effective agent in submicrobial doses for Improvement in outcome in patients with aggressive periodontitis.

Materials and method: A sample of 30 patients was selected to evaluate the efficacy of adjunctive soluble Doxycycline in submicrobial doses to conventional surgical and non surgical therapy in the treatment outcome of aggressive periodontitis with matched controls. A full mouth periodontal examination was performed and probing pocket depth, clinical attachment level, Bleeding on probing, Oral Hygiene Index (simplified), Periodontal Index and Gingival index were recorded.

Result: Adjunctive treatment with SDD 20 mg twice daily was shown to augment the attachment gains achieved with conventional therapy for management of aggressive periodontitis, with statistically significant improvements observed in CAL and PD with decreased BOP and better Sustenance of achieved results in cases than controls.

Summary and conclusion: Modification of host response by various systemically administered agents as well as locally administered agents have been conclusively proven to have long term stable effects in minimizing the destructive effects of exaggerated host response to bacterial challenge. Especially, Aggressive periodontitis encompasses distinct types of periodontitis that affect people who, in most cases, otherwise appear healthy. In a susceptible host, microbial virulence factors trigger the release of host-derived enzymes which can lead to periodontal tissue destruction. Conclusion modulating the exaggerated host response so as to cause minimal destruction and/or augmenting a diminished host response to counter the bacterial challenge positively improves the prognosis and decreases the morbidity caused by destructive periodontal disease.

P166

Anti-Gingipain Egg Yolk Antibody (IGY): Novel Supportive Immunotherapy for Periodontitis

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Aim and purpose: Our objective was to evaluate the effect of Anti-*Porphyromonas gingivalis* gingipain egg yolk antibody (IgY-GP) as

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an adjunct to scaling and root planning (SRP) in periodontitis patients.
Materials and method: IgY-GP was prepared by immunizing layer chickens with gingipain from *P. gingivalis* strain ATCC 33277. Two human volunteer trials were conducted to evaluate the effect of IgY-GP. The first trial was randomized, double-blind, placebo-controlled one, where 42 patients were randomly assigned to receive either a full-mouth SRP along with oral administration of IgY-GP or SRP with placebo. Clinical measurements including BOP and PD were recorded at baseline, 4 and 12 weeks post therapy. The second trial was conducted on 5 periodontitis patients who had high level of *P. gingivalis* in their sub gingival flora, where IgY-GP containing ointment was administered directly into the periodontal pockets. Clinical parameters (BOP, PD) and bacterial measurements were recorded at baseline and 4 weeks post therapy.
Result: Both human studies show a significant improvement in mean PD, BOP in the IgY-GP group at 4 and 12 weeks after therapy. Parallel to the clinical changes, IgY-GP administration significantly reduced the number of *P. gingivalis* in the sub gingival plaque from deepest pocket.
Summary and conclusion: IgY-GP administration in conjunction with SRP in periodontitis patients resulted in significantly better improvement in both clinical and bacterial parameters compared to placebo group. IgY-GP may be an effective supportive immuno therapeutic therapy for periodontitis patients.

P167
Nano Zirconia Coating Effect on Shear Bond Strength of Resin Zirconia
Alhavaz Abdolhamid
Affiliation missing

Aim and purpose: Zirconia ceramics do not respond well to surface treatments. Surface coating with nanoparticles may be able to increase the bond strength of resin cement to Zirconia substrate. The present study sought to assess the bond strength of resin cement to Zirconia surface following coating with alumina and Zirconia nanoparticles under in-vitro conditions.
Materials and method: Cercon zirconia discs were fabricated and sintered. Specimens were assigned to a sintered control group and three test groups coated with alumina, Zirconia and alumina/Zirconia nanoparticles using the sol-gel technique. Composite discs were bonded to Zirconia discs with Panavia F2.0 cement and half the specimens underwent thermocycling. The coated surfaces were assessed under scanning electron microscopy (SEM) and the bond strength of cement to Zirconia was measured. The bond strength values were compared using ANOVA, LSD and Student *t*-test.
Result: Among the non-thermocycled specimens, nano-zirconia ($p = 0.01$) and nano-alumina ($p = 0.05$) coated groups showed higher bond strength than the control group. The situation was the same in the thermocycled specimens. Only the control group (AS) showed a significant reduction in bond strength after thermocycling ($p = 0.037$).
Summary and conclusion: Considering the increased bond strength of cement to coated Zirconia substrate and the easy application of this technique, nanoparticle coating can be done to increase the bond strength and success rate of prosthodontic treatments.

P168
Introducing Fatigue Tracking System for Monitoring Usage of Rotary Files
Abdulkarim Temsah, A. M. R. Saleh, Ahmad Temsah, Basel Abozor
Affiliation missing

Aim and purpose: The purpose of this study is to evaluate fatigue tracking system (FTS) used to control the usage of re-sterilized nickel-titanium (NiTi) endodontic rotary files with regards to canal curvature in a routine endodontic practice.
Materials and method: Files consumption tables (FCTs) were used to track 99 Revo-S files arranged in 33 sets. Each set has 3 files (SC1, SC2 and SU). These sets were used in 2 endodontic clinics. After each case, marks were written on FCT. One mark was given for each simple canal preparation, two marks were given for curved or calcified canals and "S" mark was given for non used files in the set. If any file showed over forcing signs, fractured or reached more than 7 marks of FCT, the whole set was collected. After that all un-fractured files underwent fatigue test.
Result: 26 files showed over force signs and only 3 of the collected files showed fracture. There was moderate correlation between NCF and file consumption of total tested SU files ($r = -0.453$, $p = 0.009$). But no relationship was found for SC1 and SC2 files.
Summary and conclusion: Implementation of FCT facilitates safe usage of rotary files and saves materials by ensuring proper discarding time of the file allowing the dentist to order certain files refill.

P169
SEM Evaluation of Different Irrigation Activation System on Smear Layer Removal From Root Canal- An In-Vitro Study
Nishi Singh, Anil Chandra, Assem Prakash, Promila
Affiliation missing

Aim and purpose: Comparative evaluation of different irrigation activation system- F-File, Canal Brush and Endo Activator in removing smear layer from root canal.
Materials and method: Root canals of eighty single rooted de-coronated Premolar teeth were instrumented using crown-down technique and then equally divided into four groups on basis of irrigation activation methods used: without irrigation- control group, irrigation with F-File-Group I, Canal Brush- Group II, Endo Activator- Group III. Samples were then longitudinally sectioned and examined under SEM. Examination was done by three qualified observers using score from 1 to 4. Data was analyzed using Statistical Package for Social Sciences (SPSS) Version 15.0 at significance level of $p = 0.05$.
Result: Minimum means score was observed in Group II at coronal, apical locations and overall assessment. Group III had minimum score at middle third. Groups difference in score were found to be significant statistically for all three locations as well as for overall assessment ($p < 0.001$). Intra group comparisons showed

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that except for control group significant difference ($p < 0.001$) in scores was observed at different locations in all groups.
Summary and conclusion: Canal Brush remove smear layer more efficiently from the root canal than F-File and Endo Activator in coronal and apical region.

P170
Esthetic and Functional Rehabilitation of a Case of Amelogenesis Imperfecta
Neha Aggarwal
MM College of Dental Sciences and Research

Aim and purpose: To presents Aesthetic and Functional Rehabilitation of a 12 year old patient with Amelogenesis Imperfecta.
Materials and method: Amelogenesis Imperfecta represents a group of developmental conditions, genomic in origin, which exhibits quantitative or qualitative tooth enamel defects in the absence of systemic manifestations. Various studies showed that oral complaints associated with AI are unaesthetic appearance, extensive loss of tooth structure, dental sensitivity, and loss of vertical dimension.
Result: In the present report, direct composite veneers for anterior teeth and interim stainless steel crowns were placed on the posterior teeth.
Summary and conclusion: Treatment objectives include the relief of pain and improvement of facial aesthetics and function. Complete coverage restorations are often recommended.

P171
Microleakage Evaluation of Four Restorative Materials in Retrieved Pulpotomized Primary Molars
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Aim and purpose: This study aimed to evaluate Microleakage in retrieved Pulpotomized primary molars restored with four different restorative materials that functioned in the oral cavity for at least 36 months.
Materials and method: In this in vitro study, 80 Pulpotomized second primary Mandibular molars divided into four equal groups. Molars were restored with four restorative materials group (1) Amalgam, group (2) amalgam with adhesive, group (3) Compomer (Dyract) and group (4) Ormocer (Definite). Molars served in the oral cavity for at least 36 months were collected at their shedding date. Molars were sealed at root apices and immersed in methylene blue dye for 24 h at 37°C. Specimens were sectioned mesiodistally and evaluated for Microleakage by means of dye penetration scoring under stereomicroscope. Data were analyzed using Kruskal–Walis and Mann–Whitney statistical tests.
Result: Microleakage at the gingival margin in all groups was statistically significantly higher than at the occlusal surfaces. Amalgam and Compomer showed the least Microleakage scores in Pulpotomized primary molars. Ormocer showed the highest Microleakage scores of all the groups.
Summary and conclusion: When aesthetics is of prime importance, Compomer serves as an advocated adhesive restorative material in Pulpotomized teeth.

P172
Clinical Success of Fiber-Reinforced Composite Resin as a Space Maintainer
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Aim and purpose: The objective of this study was to assess long-term clinical success and survival rates of glass fiber-reinforced composite resin (GFRCR) as a space maintainer clinically.
Materials and method: 43 children who had premature loss of primary first or second molars. Space maintainers were prepared on stone models of patients and applied directly to the abutment teeth. Patients were recalled once every 3 months. Survival rate and whether damage to the abutment teeth occurred were evaluated clinically and radiographically, and prevention of the space was evaluated on stone models for 24 months or until failure. Mann–Whitney *U*-test was used for the statistical analyses.
Result: 16, 2% of space maintainers were dislodged and determined to be unsuccessful at the end of 12 months. At the 24 month follow-up, 52, 2% success was observed with the GFRCR space maintainer. The mean survival time of space maintainers was determined to be 14.8 ± 3.48 month (min = 3, max = 24 month). No significant relationship was found between survival time and gender, tooth number, localization and space measure at 6 month intervals ($p > 0.05$).
Summary and conclusion: At the end of the 24 months follow-up, in addition to aesthetic properties of GFRCR space maintainer, their applicability in a single visit and resistance against the forces are determined to be successful. This situation suggests that, GFRCR space maintainers would be an alternative to metal space maintainers.

P173
Surgical Repositioning of Intruded Permanent Incisors: Case Reports
Paras Angrish, Kashika Arora
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Aim and purpose: Intrusive luxation is one of the most severe forms of traumatic injuries in which the affected tooth is forced to displace deeper into the alveolus. As a consequence of this type of injury, maximum damage occurs to the pulp and all the supporting structures. This report presents two cases of intrusive injury in first a 13 year old male pediatric patient with both maxillary central incisors intruded and seconds a 12 year old male patient with left maxillary central incisor intrusion. In both cases intrusions were more than 7 mm.
Materials and method: Calcium hydroxide dressing was given followed by obturation with gutta percha.
Result: Clinical and radiographic examination 1, 3, 6 and 12 months after the surgical extrusion revealed satisfactory progressive apical and periodontal healing.
Summary and conclusion: Pulp tissue and periodontal structures require constant attention in intrusive injuries. The treatment has to be adaptable according to complications. Further surgical repositioning in the presented cases with 1-year follow up proved to be

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reliable treatment method for intruded teeth without any additional risk of resorption. The occurrence of such complications seems to be related to the degree of severity of the original injury. Further interpretation of results requires continued long-term follow up of the cases.

P174

Effect of Incorporation of Chlorhexidine in Various Restorative Materials

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MM College of Dental Sciences and Research

Aim and purpose: To evaluate the influence of Chlorhexidine incorporation in various restorative materials Restorative materials in the new era should be "bio-active" and the antibacterial effects should be highlighted as one of the important properties, as the bacteria and their products are considered to be the primary etiologic agents of pulp necrosis and peri-radicular lesions.
Materials and method: Glass ionomer cement (GIC), resin-modified glass ionomer cement (RMGIC), light-cured composite resin, MTA and CEM were evaluated for change in physical properties after adding Chlorhexidine.
Result: Hardness values and setting time of each material added with Chlorhexidine didn't present significant differences. The incorporation of CHX dihydrochloride and CHX diacetate into various restorative materials can increase antimicrobial effect without compromising physical properties of the original material.
Summary and conclusion: The incorporation of CHX dihydrochloride and CHX diacetate into various restorative materials can increase antimicrobial effect without compromising physical properties of the original material.

P175

Replantation of Avulsed Tooth: Case Reports

Kashika Arora, Paras Angrish
Dr. R Ahmed Dental College and Hospital, Kolkata, India

Aim and purpose: Avulsion is a grievous injury characterized by complete displacement of tooth from its socket following trauma severing the periodontal ligament and neurovascular bundle. These report present cases of a Replantation after avulsion injury of right maxillary central incisor in 11 year old pediatric patient 24 h following trauma and Replantation in 12 year old patient with avulsion of maxillary right central incisor 2 h following trauma.
Materials and method: After Replantation to normal occlusion, teeth were stabilized and splinted with a 0.6 mm stainless steel wire and light cure composite resin with adjacent teeth. In one case calcium hydroxide dressing was given followed by obturation with gutta percha whereas in second case obturation was done extra orally before Replantation.
Result: Clinical and radiographic examinations were done at 1 week, 1, 3, 6 and 12 months after Replantation and successful outcome of the treatment was obtained along with restoration of esthetics and function.
Summary and conclusion: The prognosis of Replantation of an avulsed tooth is significantly related to the time interval between injury and treatment, the conditions of storage of the tooth, the stage of development. Depending on these factors, different adverse reactions like surface, inflammatory, and replacement resorption are common complications in replanted teeth. In the presented cases with 1 year follow up Replantation was the treatment of choice to relieve the patients from psychological, cosmetic and functional trauma. However a continuous and a long term follow-up is required for further interpretation of results and evaluation of long term prognosis.

Poster Session 8 (P176–P193)

Theme: Oral Surgery and Oral Medicine

P176

Fiction to Reality, Pulpal Stem Cells and Tooth Regeneration

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Aim and purpose: To develop a method for tooth regeneration by implantation of scaffold of pulpal stem cells in extraction socket.
Materials and method: As human trials were not allowed because of its risk of complications, a laboratory trial was done under certain atmosphere for 4 months from Pulpal stem cells of extracted 3rd molars and deciduous tooth. Pulpal stem cell regeneration was studied in a total of 7 teeth.
Result: Tooth regeneration was seen in 9 weeks.
Summary and conclusion: This if tried and succeeded in vivo, and then it will be the new face of regenerative medicine. In just 5 words, it can be concluded as "THIS WILL BE THE FUTURE…"

P177

Metastatic Tumors of the Mandible

Samia Ayachi[1], Aicha Zaghbani[1], Habib Khochtali[1], Ramzi Moatemri[1], Zouha Mziou[1], Samah Sioud[2]
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Aim and purpose: Metastatic tumors of the mandible are rare and can be the first evidence of dissemination of a primary cancer and therefore presents a diagnostic challenge. The authors propose to analyse the clinical presentation, the radiographic appearance and the features of management of these tumors.
Materials and method: It is a retrospective review of medical records of 9 patients with metastic tumors of the mandible. The patients were treated in the department of oral and maxillofacial surgery, in the targeted hospital, Sousse, Tunisia, between January 1993 and December 2011.
Result: Patients included 6 men and 3 women, whose ages ranged between 12 and 92 years (mean age: 47 years). Four cases manifest before the detection of the primary tumor. In the remaining cases, the primary site was known. The primary tumor was a ductal breast carcinoma, a seminoma, a neuroblastoma, afibular osteosarcoma, a lung small cell carcinoma, a femoral Ewing's sarcoma, a synovialosarcomes and two adenocarcinoma (lung and kidney). Only 3 patients had a surgical resection of mandible

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tumor (1 case of synovilosarcoma, 1 case of adenocarcinoma and 1 case of osteosarcoma). The other patients received palliative treatment.

Summary and conclusion: Metastatic tumors to the mandible represent 1% of malignant tumors. Their radiographic appearance varies according to the histological type of primary tumor. The prognosis of these metastatic tumors remains poor.

P178

Extensive Nasopalatine Cyst – Case Report

Helena Salgado
Faculty of Dental Medicine, University of Oporto, Portugal

Aim and purpose: Nasopalatine duct cyst Nasopalatine cyst is a developmental, epithelial, non-neoplastic cyst. That is considered to be the most common non Odontogenic cyst in the maxillofacial region. It is one of the many pathologic processes that may occur within jaw bones, but it is unique in that it develops in only a single location -the midline anterior maxilla. Nasopalatine cysts are usually asymptomatic and may be discovered during routine clinical and/or radiologic examination. A correct diagnosis can only be made after proper clinical, radiographic, and histopathologic examination. A case of a Nasopalatine duct cyst in a 45-year-old male is presented by the authors. The patient was referred, reporting a pressure over the anterior maxilla. There were no other symptoms and no recent history of pain. Clinical examination revealed a palatal expansion on the anterior hard palatal. There was no history of previous trauma. The patient was asked to take a computerized axial tomography which showed a well-defined radiolucency in the anterior maxilla in the region of the incisive canal.

Loss of cortical bone was seen along the palatal aspect of the lesion in the sagittal sections. Also resorption of nasal cavity floor bone could be seen in those sections. The lesion was surgically removed under general anaesthesia. The histopathological diagnosis confirmed a Nasopalatine duct cyst. The patient showed no clinical or radiographic signs of recurrence one year after surgical excision.

P179

Comparison of Palatal Rugae Patterns in Following Orthodontic Treatment

Saurav Kumar, Devicharan Shetty, Saurabh Juneja
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Aim and purpose: To compare the palatal rugae pattern in 20 subjects who have undergone orthodontic treatment and to evaluate the stability of these patterns in pre-treatment and post-treatment orthodontic cases.

Materials and method: 20 patients were selected for this study who had undergone orthodontic treatment and their pre- and post-treatment models were retrieved for sex determination analysis and stability of rugae patterns.

Result: Changes occurred in bony structures during fixed orthodontic treatment but rugae pattern remained stable thus indicating that palatal rugae forms remain stable and unchanged even after the underlying palatal bone has remodelled.

Summary and conclusion: Palatal rugae are unique to every individual and can be used as a possible tool in person identification in forensic Odontology.

P180

Atypical Unicystic Ameloblastoma With Verruco-Papillary Proliferation

Navneet Kaur, Devi Charan Shetty, Nidhi Narwal
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Aim and purpose: Ameloblastoma is a benign Odontogenic neoplasm which frequently affects the mandible. The term Ameloblastoma includes several clinicoradiological and histological types. Apart from the most commonly encountered clinicopathologic models, there are few variants, whose biological profile is unknown or not elicited. Among these types, Unicystic Ameloblastoma is the least encountered variant of the Ameloblastoma. Unicystic Ameloblastoma refers to those cystic lesions that show clinical, radiographic, or gross features of a jaw cyst but on histologic examination show a typical ameloblastomatous epithelium lining the cyst cavity, with or without luminal and/or mural tumor proliferation.

Materials and method: A patient reported to the department of oral pathology and microbiology, its CDSR muradnagar, with the provisional diagnosis of Ameloblastoma, Odontogenic keratocyst and appeared to be a simple Unicystic Ameloblastoma after incisional biopsy. Excisional biopsy was also done for this case.

Result: Adding onto the diagnostic dilemma it showed a atypical histological features of an Unicystic Ameloblastoma with Verrucopapillary proliferation on an Excisional biopsy.

Summary and conclusion: Currently histologic examination is the most sensitive tool for differentiating Unicystic Ameloblastoma from Odontogenic cysts. Careful examination of the whole specimen is essential with multiple sectioning.

P181

Cytomorphometric Study of Clinically Apparent Normal Mucosa in Tobacco Users

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Aim and purpose: To access the quantitative and qualitative effect of tobacco, in clinically apparent normal buccal mucosa by exfoliative cytology.

Materials and method: A total of 270 subjects visiting the Hospital for dental treatment were recruited after obtaining informed consent approved by the institutional ethical board. 135 subjects who were tobacco users with clinically apparent normal buccal mucosa and no systemic disease were included in the study as Case Group. 135 subjects who were not tobacco users with clinically apparent normal mucosa were included in Control Group. Exfoliative cytology examination was done and cell morphology, nuclear size and cytoplasmic–nuclear ratio was assessed.

Result: Qualitative changes were observed microscopically in the form of increased inflammatory infiltrate, presence of micronuclei, dyskeratosis and formation of anucleated squames which are

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usually not expressed in normal buccal mucosa. Quantitative changes though statistically insignificant show minor changes in Nuclear as well as Cytoplasmic diameter in tobacco users when compared to the non users.
Summary and conclusion: Tobacco irrespective of its form and frequency of usage causes genetic and epigenetic changes by DNA adduct formation which can be detected in exfoliative cytology smears. Early carcinogenesis can be detected at nascent stage in clinically apparent normal mucosa by exfoliative cytology.

P182
Oro Facial Granulomatosis: An Uncommon Clinicopathological Entity
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Aim and purpose: Aim of this case report is to raise awareness about this rare entity in a systematic approach.
Materials and method: A 26 year old male patient presented with swelling of lower lip and gingiva.
Result: Orofacial granulomatosis is a very distressing rare condition characterized by chronic disfiguring oral and facial inflammation. They are a group of diseases showing non caseating granulomatosis inflammation affecting the soft tissues of the oral and maxillofacial regions. Clinically presenting as a persistent swelling chiefly in the lip region, oral ulcers and a variety of other Orofacial features.
Summary and conclusion: It is important to establish the diagnosis accurately because this condition is sometimes a manifestation of Crohns disease, sarcoidosis or even tuberculosis and hence the diagnosis totally relies on exclusions. Hence the dental professionals should be aware of this rare entity.

P183
Nasolabial Flaps for Advanced Oral Sub Mucous Fibrosis Cases: Case Report
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Aim and purpose: To evaluate the effect of bilaterally inferiorly based Nasolabial flap for advanced oral sub mucous fibrosis.
Materials and method: A 35 years old male reported with a chief complaint of burning sensation and limitation of mouth opening (13 mm) since 3 years. He had been a 'gutkha chewer for the past 11 years. Fibrous bands were palpable bilaterally on the buccal mucosa and retro molar region, blanched and leathery floor of the mouth, the palate was involved and the uvula was shrunken. Given the nature of presentation and the advanced nature of the disease, it was decided to proceed with inferiorly based Nasolabial flaps for management. After carrying out routine blood and radiographic investigations, surgery was planned under G.A. After release of fibrotic bands, bilateral inferiorly based Nasolabial flap were taken. The intraoral flap was sutured by placing interrupted sutures using 3-0 vicryl. Donor site was closed primarily in layers. Success of the flap was determined 7 days after pedicle division by re-assessment of vascularity. On sixth month post operative, Intra oral mouth opening was found to be maintained to 38 mm and intraoral flaps were found to be successful.
Result: Bilateral inferiorly based Nasolabial flaps are effective for treating advanced cases of OSMF.
Summary and conclusion: Oral submucous fibrosis presents with a severe degree of trismus is a great surgical challenge. The surgical procedures include excision of fibrous bands with or without coverage of the surgically created defect. The use of vascularised flaps such as the palatal pedicled flap, tongue flaps, use of buccal fat pad and Nasolabial flaps are becoming increasingly popular.

P184
Internal Derangement of TMJ- Diagnosis and Brief Note on its Management
Krupa Lakshmi
Affiliation missing

Aim and purpose: Aim of this presentation is to provide review on anatomy of Temporomandibular Joint (TMJ) and surrounding vital structures, special focus on diagnosis of internal derangement of Temporomandibular Joint and a brief note on its management.
Materials and method: The common diagnostic criteria and various protocols followed for management of internal derangement of Temporomandibular Joint are reviewed from different books and articles written by various authors and the inference is drawn regarding common management.
Result: Results were better in diagnosing cases using MRI and CT scan. Majority of articles described that treatment protocols as non surgical, supportive under conservative methods of treating these cases, surgical methods are preferred only when conservative methods fails.
Summary and conclusion: For accurate diagnosis of internal derangement, in addition to history, clinical examination, radiography, advanced diagnostic aids like arthroscopy, CT scan and MRI are quite useful as these help in identifying the soft tissue changes of the joint clinically and radio-graphically, it could be divided into different stages which are important to discerned as diagnostic techniques. Management of Temporomandibular Joint internal derangement is carried out in different stages, depending upon the response of the patient to the given treatments.

P185
Removal of a Maxillary Third Molar Accidentally Displaced into the Infratemporal Fossa
Mehmetemin Toprak, Meryem Toraman Alkurt, Mustafa Gumusok, Mustafa Sancar, Sleyman Bozkaya
Gazi University Faculty of Dentistry

Result: A rare case report: The surgical removal of impacted maxillary third molars is a procedure routinely carried out by oral and maxillofacial surgeons and it is usually associated with low rates of complications. Iatrogenic displacement into the Infratemporal Fossa is rarely reported. This anatomical Fossa includes important

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structures such as the internal maxillary artery, the venous pterygoid plexus, the sphenopalatine nerve and the pterygoid muscles.
A healthy 16-year-old girl was referred to our clinic by her orthodontist to removal of third molars for the stability of treatment. After explanation of the surgical procedure, the patient's parents signed the informed consent and patient underwent surgical removal of the upper right third molar under local anesthesia. It was approached with a typical incision over the tuberosity that extended into the buccal gingival margin of the second molar until the crown of the tooth could be visualized. A straight elevator was then used to remove the tooth. During luxation, the tooth inadvertently slid distally. Immediately, the incision was extended distally to allow exposure of the posterolateral aspect of the maxillary wall but buccal fat pad prolapsed. Then, a 3D CT -scan was performed and showed the third molar to be located into the Infratemporal Fossa, just between zygomatic arch and tuber. It was decided to remove the tooth via the previously intraoral incision and the tooth was found in buccal fat pad. The tooth was removed uneventfully and the patient was discharged. One month after surgery, the patient remained asymptomatic and was definitively discharged from the consultation.

P186

Sweet Injection to TMJ!!Dextrose Prolotherapy in Dentistry

Trishnika Chakraborty, Keerthika Asaithambi
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Aim and purpose: The rehabitalation of an incompetent structure such as ligament or tendon by the induced proliferation of cells.
Materials and method: Principle – Body needs inflammation to heal. Injection of dextrose into the affected TMJ region leads to local inflammation which triggers the deposition of new collagen thereby healing the affected joints and nerves.
Result: The poster brings out the concept of Prolotherapy is terms of palliation and curative purpose in orofacial pain. We reviewed 30 articles to summarize the concept, technique and methodology of Prolotherapy.
Summary and conclusion: It is the safe, cost effective treatment that can eliminate chronic facial pain among 80–90% of sufferers approximately.

P187

Stem Cells Used in Repair of Craniofacial Defects

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Aim and purpose: To discuss the potential applications of stem cells on craniofacial defects.
Materials and method: Literature reviews from the year 2000 and above from various journals were assessed. Virtually all craniofacial structures are derivatives of mesenchymal cells. These cells are the offspring of mesenchymal cells. Cells with characteristics of adult stem cells have been isolated from the pulp, the deciduous tooth, and the periodontium. Several craniofacial structures–such as the Mandibular condyle, calvarium bone, and cranial suture have been engineered from stem cells, growth factor, and or gene therapy approaches.
Result: Potential applications of stem cells and tissues can we used as an innovative approach in treating diseases like periodontitis, dental caries. These cells are multipotent stromal cells that can differentiate into cell variants from repairing cardiac tissues to bone.
Summary and conclusion: In conclusion, as a departure from the reliance of current clinical practice on durable materials such as amalgam, composite, or alloys, biological therapies utilize mesenchymal stem cells, delivered or internally recruited, to generate craniofacial structures in temporary scaffolding biomaterial. Craniofacial tissue engineering is likely to be realized in the foreseeable future, and represents an opportunity that dentistry cannot afford to miss.

P188

The Correlation of Oral Surgery Patients' Anxiety Levels and Patient Satisfaction, Based on the Sensations They Felt During Treatment

Negar Mirzai, Bilal Ahmed, Kirsty Hill, Thomas Dietrich
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Aim and purpose: To assess patients anxiety levels and patient satisfaction, based on the sensations they felt during treatment.
Materials and method: This study was based on 103 consecutive adult patients having tooth extractions, of which 59 were male and 44 female. The Questionnaire was distributed to patients in July 2013. Each patient Moderate Dental Anxiety Score (MDAS) was established prior to having treatment. After treatment, patients were asked to specify any discomfort they had felt and finally the dental staff were asked to complete the clinical information about the treatment. Statistical significance of the data was measured.
Result: 38 patients felt a sensation during their treatment of which 57.89% of these were anxious; these results had a p-value of 0.001. From the 36.89% of patient who had moderate to severe dental anxiety, 68% would have liked some type of therapy before treatment. 16.5% of all patients felt discomfort from the injection needle, 11.65% of patients felt a pushing and pulling sensation, whilst 10.68% patients felt some type of pain during their extraction.
Summary and conclusion: Patient satisfaction, based on the discomfort felt during extraction treatment, was generally positive since most patients felt no discomfort. However, a significant number of patients still felt unpleasant sensations during their treatment and high percentage of these patients had moderate to severe dental anxiety. Simple ways to alleviate the unpleasant sensations from injection needles is with the use of topical anesthesia. Most patients in the study that were anxious would have also considered therapy to help relieve their anxiety.

P189

The Effectiveness of Tranexamic Acid Mouthwash in the Prevention of Post-Operative Hemorrhage in Patients on Oral Anticoagulants

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Aim and purpose: When preparing for oral surgery patients taking anticoagulants usually should not discontinue their medica-

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tion due to the risk of a thromboembolic event which usually outweighs the concerns of controlling postoperative hemorrhage. Different local haemostatic agents are used to control the postoperative bleeding such as resorbable dressing and antifibrinolytic (Tranexamic acid). The aim of this study is to evaluate the Tranexamic acid mouthwash efficiency in the prevention of post-operative hemorrhage in patients on oral anticoagulants.

Materials and method: We conducted a prospective comparative study of 30 patients treated long-term with the Sintrom ®, whose INR (the same day) ≤3, and who require at least one extraction or scaling and root planning. These patients were divided into 2 groups: group 1 = 15 patients in whom we used Surgicel + BB Tranexamic acid (1BBX4/day for 7 days) after tooth extraction, and group 2 = 15 patients in whom we used only the Surgicel and sutures.

Result: 56 extractions were performed in these 30 patients. The average number of teeth extracted was 1–2 with a maximum of three teeth per session and were simple extractions. The average INR was 2.7, with a range of 2.2–3. For both groups, there was no immediate or delayed hemorrhage.

Summary and conclusion: Dentoalveolar surgery is safe in patients being treated with anticoagulants with the use of local haemostatic, such as Tranexamic acid, aremet.

P190

Minor Oral Surgery of Patients on Anticoagulant Therapy

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Aim and purpose: Minor oral surgery of patients on anticoagulant therapy.

Materials and method: In the present day scenario, cardiovascular accidents are becoming so common, that one family or the other has a patient who suffered such an incident. After any surgical management that might have been done, these patients are put on regular anti-platelet and anticoagulant therapy to prevent any further arterial or venous thrombosis. Any oral surgery when becomes a mandatory treatment for any problem, such patients become a dilemma for the oral surgeon, whether to stop the drug or not. Stoppage of the drug increases the potential for significant risks of morbidity of such a patient, and situations are there of death in such a case.

Result: Several evolving clinical practices in the last years have been detected: anticoagulant use is generally not discontinued. Oral surgery can be performed despite laboratory values showing significant bleeding tendency. New effective local methods can be used to prevent bleeding.

Summary and conclusion: In this study efforts has been made whether to stop or not to stop such drugs and if not to stop then the possible measures and precautions to be taken to combat any unwanted crisis that can arise.

P191

The Effect of Ice-Compression on the Reduction of Swelling and Pain of Impacted Maxillary Canine (A Single Blind Randomized Controlled Trial)

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Aim and purpose: This study evaluates the efficacy of ice pack compression on impacted maxillary canine after surgical extraction in comparison with the control group which received no therapy.

Materials and method: Fifty patients participated in this study. Pain and facial swellings were evaluated after 12, 24, 36 and 48 h after surgical extraction. The surgical procedure, the anesthetic technique and the medication used were similar in both groups. Patients were asked to use an ice pack immediately after surgical extraction for two periods of times lasting 12 h, 24 h. The control group received no therapy after surgical extraction. Post operational pain and face swelling were compared among patients for both groups.

Result: There was no significant difference in facial swelling between the ice pack group and the control group in 12, 24, 36, 48 h after surgery. Moreover, there was no considerable difference in the experienced pain by patients from both groups.

Summary and conclusion: According to the acquired data, post operational application of ice pack was not statistically significant and only resulted in minor reduction of pain and facial swelling in patients.

P192

CAD/CAM in Forensic Odontology

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Aim and purpose: One aspect of Forensic Dentistry is the confirmation of an individual's unique identity, whether as confirmation of a crime or death. CAD/CAM (computer-aided design and computer-aided manufacturing) digitizes dental hard and soft structures and the oral cavity for a virtual design of simple and complex dental restorations, dental prostheses and orthodontic appliances. These digital records are extremely helpful in forensic dentistry, which deals with age estimation, bite-mark analysis, and, ante mortem and postmortem identification. Forensic science has also employed CAD/CAM technology to assist in 3-dimensional reconstruction of crime scene investigations.

Materials and method: Impression of an oral quadrant is taken.

(1) It is poured in stone, separated and repeated.
(2) Two identical casts are made (ante mortem and postmortem).
(3) The postmortem cast is hammered representing trauma.
(4) In-office E4D CAD/CAM unit employed to digitize the cast.

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(5) Margins of the damaged dental structures were delineated and morphogenesis was executed.
(6) Morphogenesis produced 3D computer generated model in which missing portions were reconstructed using the software.
(7) Projected portions of the tooth that was lost were milled in composite resin blocks and adhered to the postmortem cast using epoxy cement.
(8) Ante mortem and postmortem were measured with digital calipers in 3D.
(9) Monochromatic infrared digital photography (720 nm) were taken and reduced to 50% opacity and superimposed.
Result: The results represented an average of both ante and postmortem casts. The view represented a very close approximation to the ante mortem record.
Summary and conclusion: The technology offers enormous insight and evidence to the forensic field. This presentation aims to highlight the vital role that CAD/CAM play in Forensic Odontology.

P193

The Prevalence of Inflammatory Developmental Odontogenic Cysts in a Libyan Population

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Aim and purpose: To determine the prevalence of Odontogenic jaw cysts in a Libyan population and to compare the data with previously published reports from other countries
Materials and method: We retrieved and analyzed 2190 case notes and biopsy records of the Department of Oral and Maxillofacial Surgery and the Department of Oral Pathology and Microbiology, Target University, Benghazi, Libya, dating from January 1990 to December 2005. There were 326 cases (14.8%) of diagnosed Odontogenic cysts among the 2190 Biopsies performed during this period. The cases were analyzed for age and sex distribution, site of Presentation, association with impacted teeth, and the method of treatment
Result: The male to female ratio of patients was 1.3:1 Radicular cysts accounted for 222 cases (68.1%), followed by dentigerous cysts (n = 49, 15%) and Odontogenic keratocysts (n = 43, 14.1%). Mean ages of the patients were, respectively, 31.7, 22.7 and 36.1 years. The maxilla was more commonly involved than the mandible (1.3:1). The anterior maxilla was the commonest site (n = 132, 37.4%) followed by the posterior mandible (n = 96, 29.4%). Fifty three cases were associated with impacted teeth, and the highest frequency was for dentigerous cysts (n = 37). Enucleation and curettage was performed on 300Patients, marsupialization on 14, and marginal/segmental resection on 12.
Summary and conclusion: To our knowledge, this is the first such study on a Libyan population. Our results are comparable to studies from other countries. Knowledge of the relative frequencies and sites of presentation of Odontogenic cysts in different ethno-geographic backgrounds is essential for the early diagnosis and management of these benign yet potentially destructive lesions.

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