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It gives me immense pleasure to write the Editorial for the Journal of Multidisciplinary Dental Research- Special issue of Quest 5.0, I have been informed by the Dean Coorg Institute of Dental Sciences, Virajpet- Dr Sunil Muddaiah, that they started this journey of encouraging Undergraduate research in the year 2017 and the event has since grown leaps and bounds in the last 5 years. Many International universities have also participated in all instalments of QUEST and that fosters a global research union among the young minds.

Research in India has been not a Core topic of importance since most times we are focussed on the teaching process in colleges. However, research remains a prominent stand point in the assessment and accreditation of institutions across India. Recognising this need the Dental Council of India has been focussing on building a research temperament amongst faculty and students of dental colleges by making research a necessary metric for Awarding degrees, qualifying to be teachers, promotions etc, which has gone a long way to improve research output in our dental colleges.

Encouraging a research mind-set amongst under-graduate students is a difficult proposition indeed as it is not part of their mandatory requirements, however it is heartening to note that a few colleges in the country have made initial strides in this regard.

I am very happy about this initiative taken by CIDS and am pleased by the number of undergraduate students attending this conference, I wish Sunil and his team all success in this endeavour. This issue of JMDR is a compilation of all academic presentations at QUEST 5.0 and I hope that this issue instils in the graduates a favour for more research and publication.



Dr Anil Kumar Chandna
Executive committee Member
Dental Council of India

Mr. K M KUSHALAPPA ORATION LECTURE

Mr. K. M. Kushalappa was a pious, generous and selfless soul.

He was a self-made person who gave up his rights on his family home and property and purchased the School Estate, Siddapur where he lived with his wife and family.

He had a modern approach to life and appreciated available technology and adapted himself to change during his time. He always had a ear for the grievances of people around him especially his neighbors and people of his clan. He was always there for people in difficulty and helped nurture and educate children of his community.

He was active in the politics of Coorg with his primary goal being to keep Coorg as an independent state under the Indian Union. He took active part in the co-operative movement in Coorg and helped in establishing co-operative institutions like 'Federation' in Coorg which are doing laudable service even today.

During the depression days in 1937 when Coffee was in the doldrums he took to the export business and succeeded in keeping himself afloat. He was a true Gandhian and followed the dictates of Gandhiji. He made the family follow the principles of the Mahatma.



The K M Kushalappa Oration for QUEST 2021 was delivered by Dr Venugopal R M. With a doctorate in statistics from Osmania University, Dr Venugopala Rao Manneni is an experienced data analyst who has over 15 years of work experience in a diverse area of verticals such as manufacturing, service, media, telecom, retail, pharma and education. Prior to Juxta-Smart Mandate, he has worked with reputed organizations like Juxt- smart Mandate, TNS India (Kantar, WPP) and NFO MBL and served clients across UK, France and Asia Pacific region.

Dr Venu's primary responsibility is architecting the solutions for the data driven problems using statistical methods, Machine Learning and Deep learning algorithms for both structured and unstructured data. His expertise lies in the understanding of mathematical and statistical theories, experimenting with new technologies and innovative use of theory in the field of analytics.

He has been successfully managing a sincere and dedicated team of analysts at Medeva Inc., New Delhi. Additionally, he conducts training sessions on predictive analysis / Data mining and Data Science concepts and technologies. The Coorg Institute of Dental Sciences, Virajpet has an MOU with MEDEVA inc., through which this talk was made possible.

Mrs. PONAMA KUSHALAPPA ORATION LECTURE

Mrs. Ponama Kushalappa was a quiet, generous and helpful person who stood by her husband in trial and triumph.

She always believed in service before self and kept the well-being of others in mind. In the course of her life time quietly and with dignity she provided solace to society at large by providing food, shelter and education at School Estate.

She made a welcome home and kept an open house for many a relative. She was inspired by Annie Beasents' message of self-rule and education.

She stood by her husband through the most tumultuous times in Coorg's economic and political crisis and was a source of inspiration and strength to her family and society.



The Ponama Kushalappa Oration for QUEST 2021 was delivered by Dr Balakrishnan Jayan, a graduate of Government Dental College who was commissioned in Army Dental Corps in April 1991. He did his MDS in Orthodontics from the Armed Forces Medical College; Pune in 1998 and is the first dental professional in India to be awarded Hon. Fellowship in Sleep Medicine by the Indian Sleep disorders society. He has completed a fellowship program in Clinical Research and has done a Senior Defence Management course from College of Defence Management, Secunderabad. He has many accolades to his name- IOS research award (2009), Chief of Army Staff commendation (2007, '14), Vice Chief of Army Staff commendation (2007 & '08) and Army Commanders commendation (2000, '08 & '11). He is a post graduate teacher of MUHS and Delhi University for Orthodontics. He has been associated with 12 Research projects, all pertaining to Upper airway and has numerous presentations in various National and international conferences. He is well published and has contributed to chapters in various popular international Orthodontic and sleep medicine books. He has held in the past, the position of Commandant "Air Force Institute of Dental sciences" and Dental Advisor (IAF) and currently serves as the Commandant of the Army Research & Referral- Dental Wing, at New Delhi.

THE HENRY GRAY ORATION LECTURE

Born in Belgravia in 1827, the Father of Modern Anatomy, Dr Henry Gray is the worlds most noted anatomist and surgeon who revolutionised the study and practice of the subject with his illustrated book, Anatomy- Descriptive and Surgical. His textbook- Grays Anatomy, has never gone out of print and till date serves as the cornerstone for the study of Anatomy as the quintessential 'Medical Bible'.

The study of Craniofacial Anatomy & Biology in the context of dental education in India has always been regarded as basic science curriculum. The Coorg Institute of Dental Sciences, Virajpet felt the need to highlight the importance of understanding Craniofacial Anatomy & Development and apply the same to clinical practice. The Henry Gray Oration was started to place particular emphasis on this very matter and form a link between the learning of Craniofacial development and clinical correlation.



The first Henry Gray Oration was delivered by eminent German Anatomist and orthodontist, Dr Ralf Radlanski. He studied Medicine and Dentistry at the Universities of Göttingen (Germany) and Minneapolis (MN, USA). He received his postgraduate education at the Institute of Anatomy, University of Göttingen and he underwent a residency in Orthodontics at the Medical faculty of Göttingen University. He has served as the Director of the Department of Craniofacial Developmental Biology at The Center for Dental and Craniofacial Sciences, University Medicine Berlin, Germany Since 1992. He is also a guest faculty at many notable institutions such as- University of California, University of Turku, University of Queensland and University of Basle. His work and contributions to the field of craniofacial biology and development are unparalleled and reflected in his textbook-. His expertise in the subject is echoed in The Radlanski Collection which is a curated collection of 50,000 Serial Sections of human embryos.



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ANTI PROLIFERATIVE ACTIVITY OF SOLANUM LYCOPERSICUM IN ORAL SQUAMOUS CELL CARCINOMA

Name : Esha Verma

Guide : Dr. Sharada T Rajan

Institution : Sri Ramachandra Institute of Higher Education and Research

Introduction:

Oral squamous cell carcinomas are among the 10 most common cancers and have a 50% lethality rate after 5 years. The search for anti-cancer properties of phytochemicals is ever expanding which is to battle the current mode of vigorous chemotherapy and surgical procedures. In this in-vitro study, two varieties of tomatoes have been studied for their anti-proliferative activity.

Objectives:

1. Detection of the antioxidant activity of the extracts from *Solanum lycopersicum*.
2. Assessment of cell toxicity using the MTT reduction assay.

Methods:

KB cells were purchased from NCCS, Pune. Extracts of two varieties of *Solanum lycopersicum* were prepared. Anti-oxidant effects of the extracts were assessed using a three model system- Ferric reducing power assay. Phosphomolybdenum reduction assay and nitric oxide reduction assay. MTT assay was used to assess the anti-proliferative activity of the extracts and measure the cytotoxicity levels. The final outcomes were compared between two varieties.

Results:

The biochemical assays reveal the presence of anti-oxidant potential of the extracted MTT assays depicted a decreasing pattern in certain viability with the increasing dose of the extract. This study results concluded the presence of anti proliferative properties in the 2 extracts of *solanum lycopersicum*.

Discussion:

Studies on lycopene show its protective mechanism against highly damaging reactive oxygen species. Researchers have demonstrated lesser incidence of prostate cancer on high intake of tomato as well as in other cancers of the oral cavity and even leukoplakia. This study shows how two local varieties possess anti proliferative activity suggesting a potential therapeutic property in oral cancer.

ASSESSMENT OF KNOWLEDGE AMONG UNDERGRADUATE DENTAL STUDENTS ON OBSTRUCTIVE SLEEP APNEA AND ITS DENTAL MANAGEMENT-A SURVEY/QUESTIONNAIRE STUDY

Name : S. Keerthana and Shilpa K

Institution : Sri Ramachandra Institution of Higher Education & Research



INTRODUCTION

Obstructive sleep apnea (OSA) a condition which presents with reduced or absent breathing during sleep. It has been reported that untreated OSA can lead to other systemic complications. Management of OSA includes surgical correction or therapy using extra-oral or oral appliances. To treat mild or moderate obstructive sleep apnea, as well as snoring Oral appliances such as Mandibular advancement splints (MAS), Mandibular repositioning appliances (MRA) OR Tongue retaining devices (TRD) are frequently used.

The objective of this study is to analyze the knowledge and attitude among undergraduate dental students of a dental institution regarding OSA and its dental management using oral appliances in the view create awareness to ensure accurate diagnosis and proper treatment of patients with OSA.

METHOD

A 15-point self-made questionnaire was created and circulated among undergraduate students of a dental institution.

RESULTS

(Ongoing Research)

The data obtained in form of answers to the questionnaire will be statistically analysed to assess the knowledge on Oral management of Obstructive Sleep Apnea under various domains including Basic knowledge on the condition including demography of disease, diagnostic features and investigations, Treatment modalities and role of dentist.

DISCUSSION

(Ongoing Research)

Results obtained will be discussed under each domain to assess the knowledge and attitude among dental students on OSA. Results obtained will be compared with previous available literatures. The purpose of this research work is to find the key areas of lack of knowledge on the topic and improve awareness on the condition among dental students with an ultimate aim to facilitate proper diagnosis and early management of the condition which will be beneficial to patients.

COMPARATIVE EVALUATION OF CARIES RISK ASSESSMENT IN TWO DIFFERENT AGE GROUPS OF CHILDREN – A PILOT STUDY

Name : Kumari Akshara Gandikota And Laxman. V
Guide : Dr. G Felsy Premila
Institution : Faculty of Dental Sciences, Sri Ramachandra Institute of Higher Education and Research (Deemed to be University)



Dental caries is a biofilm-mediated, sugar driven, multifactorial, dynamic disease that results in the imbalance of demineralization and remineralization of dental hard tissues. Dental caries is determined by biological, behavioural and psychological factors linked to an individual's environment {International Association of Paediatric Dentistry (IAPD) Bangkok Declaration 2019}. Early Childhood Caries (ECC) is defined as the presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries), or filled surfaces, in any primary tooth of a child under age six. Caries Risk Assessment (CRA) is a diagnostic tool that helps to identify and prevent ECC at an incipient stage and determines the susceptibility of an individual to develop caries during a certain period of time. This paper focusses on assessing and comparing the caries risk in pre-schoolers and primary school children using the American Dental Association (ADA) caries risk assessment method.

FABRICATION AND EVALUATION OF ELECTRONIC TOOTH BRUSH FOR WHEEL CHAIR DISABLE PATIENT

Name : Nurfar'ain Binti Norpitri And Hamizah Binti Mohd Taridi
Institution : Faculty of Dentistry, Universiti Teknologi MARA (UiTM), Malaysia



Introduction:

To fabricate and attach electronic toothbrush to the wheelchair for physically disable patient and to evaluate the effectiveness of electronic toothbrush for wheelchair disable patient in removing dental biofilm.

Methodology:

The arm of the electronic toothbrush was designed. Two hydraulic motors (DC motor), timer, wheelchair and an electronic toothbrush were purchased. They were assembled, and attached to the lateral side of the wheelchair. Three set of extracted teeth were mounted to the phantom head smeared with a thin layer of saliva on the labial area and stained with disclosing solution. The duration of tooth brushing was set for 2 minutes. The effectiveness of biofilm removal was evaluated based on the difference's percentages of disclosing solution present before and after using the electronic toothbrush that attached to wheel chair. The effectiveness of the removal of dental biofilm was evaluated using ImageJ software analyzer. Result analyse by using SPSS statistics version 23 by paired T-test. P value was set <0.01.

Results:

The percentages of disclosing solution before using electronic toothbrush is 59.35% (± 15.13) meanwhile for percentages of disclosing solution after using electronic toothbrush is 38.48% (± 20.08). The staining removal of disclosing solution on the teeth using the electronic toothbrush that attached to the arm is significance (20.87%) as the P value <0.01.

Conclusion:

The electronic toothbrush that attached to the arms are able to remove dental biofilm on teeth. It can help disable patient to maintain their oral hygiene.

CONSIDERATIONS AND BELIEFS IN TOOTH DONATION TO RESEARCH IN MALAYSIA

Name : Nurnatasha Adira Mohd Rahidi and Nur Syafiqah Athirah Saleh
Guide : Hayati Ishak, Ghee Seong Lim and Arilatha Arimuthu
Institution : Faculty of Dentistry, Universiti Teknologi MARA (UiTM), Malaysia



Introduction:

The purpose of this study was to evaluate whether dental students were facing difficulties in obtaining extracted human teeth for preclinical training purposes and their beliefs and attitudes towards tooth donation to research.

Methods:

A total of 155 dental students from selected public dental universities in Kuala Lumpur and Selangor who were undergoing preclinical training participated in this research. A questionnaire that used a multiple-choice grid was developed using Google Forms and was distributed to students accordingly. The quantitative data were analyzed using SPSS (Cramer's V correlation analysis, $p < 0.05$).

Results:

The majority of respondents were willing to donate their teeth to research ($n=150, 96.8\%$) despite having the lack of knowledge on stem cells research ($n=110, 71\%$). 85.8% ($n=133$) would like to be informed on the type of research conducted on the extracted tooth and the results of the research. 62.2% students preferred to sign the consent at the consultation visit prior to extraction. There was no significant association between gender, ethnicity, religion and hometown and willingness to donate their teeth. 92.9% ($n=144$) had difficulty in obtaining extracted human teeth for preclinical training especially molar teeth ($n=110, 71\%$).

Discussions:

Most dental students were willing to donate their tooth towards research. Promoting tooth donation to the public to meet the demand for preclinical training and research in Malaysia through educational programs could be considered. In future, establishment of a tooth bank would be beneficial in storing teeth in a systematic manner.

GROWTH OUTCOME PREDICTION AND IT'S CORRELATED DENTAL AGE AMONG CLEFT LIP AND PALATE CHILDREN IN KLANG VALLEY

Name : Sharifah Sakinah Binti Syed Zain and Syasya Qistina Redzuan
Institution : Faculty of Dentistry, Universiti Teknologi MARA (UiTM), Malaysia



Introduction:

The purpose of this study was to evaluate dental arch development using Goslon Yardstick as a scoring tool for children in Klang Valley born with non-syndromic unilateral cleft lip and palate (NSUCLP). The other objective is to determine and compare the differences in dental age (DA) of Willems method in Malaysian children (8-15 years) born with NSUCLP with normal children.

Methods:

Thirty study models of patients with cleft (8-15 years) were selected, assessed and scored to five ranks using Goslon Yardstick Index. Twenty-six orthopantomograms of patients with cleft obtained from UiTM and University of Malaya with thirty orthopantomograms of age matched normal patients were examined using Willems method. The DA differences between patients with cleft and non-cleft were recorded. Descriptive statistics and paired t-test were used in this study.

Results:

The intra-correlation and inter-correlation reliability for Goslon scoring were both high (ICC=0.940, ICC=0.861). Group 4 and 5 observed to be the highest with scores of 40.0% and 26.7% respectively. DA estimation recorded high reading of the intra-(ICC=0.927) and inter-(ICC=0.992) correlations reliability. The overall mean difference in Willems method between the estimated DA and chronological age (CA) for NSUCLP was significantly different ($p=0.008$) whereas no significant difference was found for normal patients ($p=0.394$).

Discussion:

Malaysian children with NSUCLP were mostly categorized in Goslon group 4 and 5 which may require growth completion with orthognathic surgery. Willems method detected significant DA delayed in NSUCLP children compared to control group.

MUSICAL INTERVENTION IN GAGGING REFLEX CONDITION DURING IMPRESSION TAKING

Name : Nur Humaira Ishak and Nur Athirah Mohd Rosli
Guide : Dr. Nur Atikah Mustafa, Dr. Aiemeeza Rajali
Institution : Faculty of Dentistry, Universiti Teknologi MARA(UiTM), Malaysia



Objective:

The objective of this study was to determine the ability of musical intervention in reducing gagging reflex condition during impression making. Methods: A total number of twenty-five patients who attended the UiTM's Dental Clinic for impression making were randomly selected. Participants were asked to answer the Gagging Problem Assessment Short Form (GPA) prior to impression making. They were exposed two times for impression making; first without music and second with musical intervention throughout the procedure selected on their own. Physiological changes: pulse rate /minutes (BPM) and arterial oxygen saturation of haemoglobin (SpO2 %) were recorded. Psychometric assessment for their satisfaction's level and opinion of the approach was immediately evaluated through the Oral Health Impact Profile (OHIP-14), consisting of seven domains before and after the interventions.

Result:

Musical intervention had an overall significant effect on stress reduction in both physiological ($P<0.001$) and psychological ($P<0.001$) outcomes except for domains 6 and 7. This study revealed that patients displayed decreased heart rate and increased arterial oxygen saturation after experienced the auditory stimulus. The OHIP demonstrated that functional limitation and psychological disability were the most affected before the intervention.

Conclusion:

The usage of music during impression taking reduced the anxiety level physiologically and psychologically and is recommended in managing the gag reflex.

ACCURACY OF SUPERIMPOSED POLYGONAL APPROXIMATION ANALYSIS ON 2D PHOTOGRAPHS AND 3D SCANNED IMAGES IN EXPERIMENTAL BITE MARKS

Names : Ain Ashraf Rizwal and Nursyereen Azahar

Institution : Faculty of Dentistry, Universiti Teknologi MARA, Malaysia

Objective:

Preservation of bite marks evidence has always been a major problem in forensic odontology due to progressive loss of details as the time passes. 2D photograph is considered as gold standard to preserve bite marks however there are limitations to this method. This study aims to measure the accuracy of 3D scanned image in comparison to 2D photograph registration of experimental bite marks.

Methods:

Self-exertions of a bite mark on the respective forearm of subjects were performed by thirty volunteers. A 2D photograph and 3D scanned image were immediately registered following bite mark exercise using conventional camera and 3D handheld scanner SENSE™2 respectively. The outline of the most exterior points of bite mark were transformed into polygonal shape. Next, the polygonal approximation analysis was performed by arbitrary superimposition method. Difference between surface areas of both images was calculated. Paired t-test was used to measure significance with $\alpha=0.05$.

Results:

The mean surface area of 2D photographs and 3D scanned images is 31.535cm² and 31.822cm², respectively. No statistical difference was found between both mean surface areas ($p>0.05$). The mean error (ME) is 0.287cm² ± 3.424 and the mean absolute error (MAE) is 1.733cm² ± 1.149.

Conclusion:

Bite marks registered with 3D scanned image is comparable to the standard 2D photograph for bite mark evaluations. The use of 3D scan may be adopted as standard operating procedure in forensic application especially for evidence preservation.

LOOK INTO THE EYES!

Name : Divyashree.S And Anvitha.M
Guides : Dr. J. Naveen Kumar and Dr. Jawahar Babu
Institute : Faculty of Dental Sciences, Sri Ramachandra Institute of Higher Education and Research (SRIHER)



INTRODUCTION:

The word Zygoma is derived from a Greek word 'zygon' which means 'yoke'. As the name suggests, zygoma articulates the bones of the skull. Zygomatic-maxillary complex (ZMC) fractures account for 15-24% of the maxillofacial fractures. Fractures of the ZMC inevitably lead to orbital complications like diplopia, enophthalmos, blindness, decreased visual acuity, corneal exposure and ptosis.

AIM:

To evaluate the association between unilateral Zygomatic-maxillary complex fractures and Extraocular muscle involvement.

METHOD:

Patients who reported to our institution with isolated unilateral ZMC fractures between January 2018 to December 2020 were included in this retrospective cross-sectional study. The primary predictor variables of our study include: 1. Involvement of the muscles, with or without bony interferences, 2. Change in length of the muscle involved, 3. Compare the Hounsfield unit [HU] of the muscles on the affected side with the normal side.

RESULT:

The study is still ongoing and results will be published during the presentation.

CONCLUSION:

The change in extra ocular muscle morphology post trauma can have significant impact on the post-operative recovery of the patient. Thus, pre-operative evaluation of the extra ocular muscles can significantly improve the treatment rendered as we can anticipate the final outcome of the trauma.

USE OF C-ARM TO ACCESS REDUCTION OF ZYGOMATIC COMPLEX FRACTURES: A COMPARATIVE STUDY

Name : Raghavi. M and Swetha Rajasekaran

Guide : Dr. Deepak C

Institution : Sri Ramachandra Institute of Higher Education and Research.



INTRODUCTION:

The zygoma is a tetrapod complex which articulates with three sutures of the maxillofacial skeleton namely; frontozygomatic suture, zygomaticotemporal suture and the sphenozygomatic suture. The zygoma is highly accessible to the traumatic elements. It is the second most common mid-facial bone fractured after nasal bone fractures. The primary goal in treating a zygomatic complex fracture is to re-establish the anatomy of the zygoma by accurate reduction and to achieve an ideal aesthetic appearance. The use of computed tomography and C-ARM has increased the success rate to assess the reduction of fractures intra-operatively.

AIM:

The aim of this study was to analyze the use of C-arm and its significance in accurate reduction of zygomaticomaxillary complex (ZMC) fractures.

OBJECTIVES:

The study was to analyze the use of C-arm and its significance in accurate reduction of zygomaticomaxillary complex (ZMC) fractures. Orbital volume is used as parameter to compared pre- and postoperative volumes of injured orbit. Differences in orbital volume calculated in cases done with intraoperative imaging and in controls treated without the use of intraoperative imaging were evaluated using Student t-test. C-arm is definitively an effective tool in the armamentarium of oral and maxillofacial surgery in assessment of reduction of ZMC fracture.

MATERIALS AND METHODOLOGY:

Patients with isolated unilateral displaced ZMC fracture with orbital volume change are included in the study. Study was done for a time period of 1 year from March 2019 to March 2020 in Sri Ramachandra Institute of Higher Education and Research, Chennai.

DISCUSSION AND RESULT:

We found that on comparing the percentage of orbital volume restored in each group gives a p-value, which is statistically not significant. Hence, null hypothesis is accepted, which indicates that there is no difference in restoration of orbital volume in ZMC fractures and there no significant use of c arm in intraoperative ZMC fracture reduction.

COMPARISON OF JOINT SPACE INDEX IN CLASS II DIV 1 AND CLASS II DIV 2 WITH CLASS I MALOCCLUSION USING CONE BEAM COMPUTED TOMOGRAPHY

Name : Nadha Shakir and Nanthini. P

Guide : Dr. R. Pamila Rachel and Dr. Vignesh Kailasam

Institution : Faculty of Dental Sciences, Sri Ramachandra Institute of Higher Education and Research



Introduction:

The aim of this study is to evaluate and compare the joint space index of Class II Div 1 and Class II Div 2 malocclusions with Class I malocclusion. It is used as a marker to assess condylar positioning in the glenoid fossa.

Materials and Methods:

The joint space index in 30 cases, 10 in each malocclusion was assessed using the three-dimensional imaging technique, Cone Beam Computed Tomography (CBCT). Group 1 is the control group comprising of Class I malocclusion cases. Group 2 is the study group comprising of Class II Div 1, and Group 3 comprises Class II Div 2 cases. The joint space index is calculated based on the formula developed by Pullinger and Hollenbach.

Result:

Based on the preliminary data, the joint space in Class I was in the range of 7.8-8.6mm. In Class II Div 1 it was in the range of 2.7-4.2mm and on in Class II Div 2 it was found to be in the range of 6.3-8.8mm. A variation between the left and right sides was also noted.

Discussion and Conclusion:

The clinical significance of joint space is of great value. The presence of normal joint space is needed for free movement of the condyle along with the articular disc. Thus, it can be inferred that a lower joint space is seen in Class II malocclusions.

EVALUATION OF DISTANCE BETWEEN THE FIRST PALATAL RUGAE TO THE PERMANENT TEETH IN ANGLE'S CLASS I, II, III MALOCCLUSIONS.

Name : S. Janani and Ishwarya. S

Guide : Dr. Pamila Rachel and Dr. Vignesh Kailasam

Institution : Sri Ramachandra Institute of Higher Education and Research



INTRODUCTION:

Palatal rugae is considered significant in Orthodontics because of their usefulness as a reference landmark in various treatment modalities. The objective of this study is to evaluate the distance between first palatal rugae to the permanent teeth in Angle's Class I, II, III malocclusions.

METHODOLOGY:

In this retrospective study, dental casts of 90 patient were taken before treatment. The age group of study sample is 13-30 years. The sample was divided based upon Angle's classification on malocclusion. Changes in the linear distances from the medial point of palatal rugae to the maxilla measuring points is being identified during preoperative therapy.

RESULTS:

The distance between medial point of first palatal rugae to the canine were measured. The mean value was found to be 18.83 ± 1.9 and 15.64 ± 1.7 in class I and II respectively. This showed a reduction of distance in class II malocclusion. Data of the remaining teeth will be measured.

DISCUSSION:

Many studies have reported on the stability of palatal rugae as reference points for pre and post treatment dental cast comparison. Characteristics of palatal rugae are unique to each individual. The medial aspects of the palatal rugae can be used as reference marks to assess tooth movement after orthodontic treatment. The length and orientation of rugae were different between malocclusion groups.

CONCLUSIONS:

The results suggests the association of palatal rugae with measuring points can serve to depict the changes occurring in the palate during various stages of growth and treatment.

EFFECTIVENESS OF MICROWAVE DISINFECTION ON GUTTA PERCHA CONES AGAINST STAPHYLOCOCCUS AUREUS AND ENTEROCOCCUS FAECALIS – AN INVITRO STUDY

Names : Shreenijha Ramkumar and Swetha Venkatakrishnan
Guide : Dr. G. Lokhasudhan and Dr. Arathi.G
Institution : Sri Ramachandra Institute of Higher Education and Research

Introduction:

Gutta percha cones are widely used material for the obturation of root canals and it is usually distributed by the manufacturers in sealed boxes. Once when exposed to dental environment or by handling and storage, there are more chances for getting contaminated by various microorganisms. In order to maintain an aseptic condition during root canal treatment, chairside disinfection of gutta percha cones is more important. Also the disinfection method should be more effective and lesser time consuming.

Aim:

The aim of the study is to evaluate rapid and effective method of disinfection of gutta percha cones using microwave against test organisms.

Materials and methods:

A total of 60 GP cones of size 80 were used and contaminated with Enterococcus faecalis and Staphylococcus aureus respectively. Further it was disinfected with Group A- 5% sodium hypochlorite, Group B- 5% sodium hypochlorite under microwave, and Group C- Distilled water under microwave for 1 min. The disinfection was further evaluated by subculture in a culture medium and quantification of the colonies formed.

Results :

The efficiency of microwave disinfection is determined by examining the test group and the research is under progress.

“WIDE VS NARROW”, THE EFFECT OF BUR DIAMETER ON OSTEOTOMIES - A HISTOPATHOLOGICAL ANALYSIS

Names : Ms. Kirthiga B and Vaishnavi J

Guides : Dr. G. V. V. Giri and Dr. Pearlcid Siroraj. A

Institute : Faculty of Dental Sciences, Sri Ramachandra Institute of Higher Education and Research

Introduction:

The commonly performed procedures in Oral and Maxillofacial surgery range from dento alveolar surgeries to reconstruction of dentofacial deformities. The above-mentioned procedures require bone incision in the form of osteotomies.

Rotary instruments are the most common bone cutting instruments. The various parameters that alter the efficacy of these rotary instruments include diameter of the bur, torque of the handpiece and speed of the bur. In this clinical study, the effect of drill diameter and drill angulation and their effect on surrounding bone was analysed histologically. The criteria analysed were the margins of the osteotomy, the quantity of debris and the carbonisation at the margins of the osteotomy.

Material and method:

Eighteen healthy individuals with mesioangular class 2 position A impacted mandibular 3. molar were included in this study. The participants were divided into three groups based on the surgical bur used. The speed was standardised at 40,000 RPM. Bone sample was obtained using a 2 mm trephine. The obtained specimen was analysed histologically for margin of osteotomy, debris present and carbonisation.

Result:

In our study we found that the difference in the parameters analysed among the different surgical burs was statistically not significant.

Discussion:

Based on our clinical study we would like to conclude that the dimension and angulation of the bur has no significant role to play in precision of the osteotomy.

RACIAL PREDICTION

Name : Ms Divya A and Ms Alfina VK
Guide : Dr. Archana VK
Institution : Coorg Institute of Dental Sciences, Virajpet



Racial differentiation is of utmost important in victim identification, cases of mass disasters etc. The methods primarily focus on craniofacial skeletal patterns making use of parameters such as frontal bone anatomy, prominence of Malar skeleton etc. Even dental features such as shovel shaped incisors and cusp of Carebelli have been used in racial differentiation. In our study we hope to utilize parameters collected from simple dental radiographs: Panoramic and lateral cephalogram, to help identify features that can differentiate between the populations of Kerala and Karnataka. Any positive correlation could yield features that define either of the two population and could in the future be used as an anthropological tool in race identification.

HPV AWARENESS AND ITS RELATION TO ORAL AND OROPHARYNGEAL CANCER

Name : Pooja.K.N and Pooja Shree S
Institution : Sri Ramachandra Institute of Higher Education and Research



Abstract:

The recently developed HPV vaccine is highly effective against the HPV virus. It has met a widespread acceptance amongst healthcare and public health professional. However, there are still social barriers to vaccination that hampers the effects of preventing the disease caused by HPV. The primary goal of this study is to evaluate the survey responses regarding the knowledge, awareness and vaccination status among dental professionals and students in a local population and to emphasize the relationship between HPV and the increasing incidence of oral and oropharyngeal cancers in the current scenario. The study is a prospective analysis of a questionnaire collected from the dentist and dental students regarding their knowledge, awareness and vaccination status.

“MASKS TO MASK SMILES OR BRACES?”

Name : Parnika Misra
Institution : Coorg Institute of Dental Sciences, Virajpet
Guide : Dr. Goutham Reddy



Background & Objectives:

With COVID-19 declared as a worldwide pandemic, a nationwide lockdown was implemented overnight in India on March 24, 2020. This posed many challenges to the orthodontic practice that requires periodical and regular appointments to ensure appropriate results.

Since orthodontic treatment often takes long period of time ranging from 12 to 18 months or even longer patients undergoing Orthodontic treatment were affected as institutions and clinics were indefinitely closed. But is the pandemic really a cause of concern to orthodontic treatment in the future? Will the insistence to wear masks actually encourage individuals to accept orthodontic treatment better? This is the focus of our study-

Materials & methods:

SOURCE OF THE DATA: 100 under and post graduate students of dentistry 20 non teaching faculty of dental colleges

The participants were asked to fill out an online questionnaire using google forms and the responses they submitted were analysed to note the changes in the perception of orthodontic treatment since the start of the pandemic and implementation of compulsory face covers.

Result:

The study conducted was purely perspective based wherein the popular opinion was taken and conclusions were drawn on the basis of the same. The results indicated that masks seemed to reduce the consciousness of the patients and they seemed to have become more inclined to undergo orthodontic treatment with metallic brackets now being a popular choice.

Discussion:

It has been observed that the study has brought forth two extremities of opinion wherein one way of looking at it is the popular opinion that the mask, masks one's braces, while the other end of the spectrum presents to us another opinion of postponement of treatment whereby owing to the presence of a mask one may temporarily not be inclined aesthetically towards their smile.

“THE NASAL MOSAIC” AN ANTHROPOMETRIC ANALYSIS OF SOUTH INDIAN NOSE

Name : Namira Fateen K and Nidadavolu Lakshmi Neha
Guides : Dr. Emmanuel Azariah and Dr. A. PearlcidSiroraj
Institute : Faculty of Dental Sciences, Sri Ramachandra Institute of Higher Education and Research

**Introduction:**

The nose, not only is a beauty defining feature of the face but is also considered a principal element of one's physiognomy.

In the present-day scenario, nasal bone fractures are the most common fracture of the maxillofacial region. These nasal bone fractures have a direct effect on the individual's appearance. In India, the number of children born with congenital anomalies altering the facial morphology are comparatively high. There is a requirement for correction of the deformity to achieve a near normal nasal anatomy.

All the above-mentioned procedures are performed based on the values obtained from studies conducted on Caucasian populations. But in a country like India, surgeons require dimensions obtained from the anthropology specific to Indian population.

In this study, we aim at analysing the nasal architecture of the South Indian population and give values of aesthetically pleasing dimensions of the nose.

Materials and methods:

50 female and 50 male volunteers who fulfil the inclusion criteria were included in this study. Frontal, lateral and submental view photographs were obtained for the study participants. Anthropometric analysis of the nose was done including the nasolabial angle, supra-nasal tip angle and fronto-nasal angle.

Results:

The study is yet to be completed.

Discussion:

The findings of this study will be unique as we are calculating the angles in the study population as well. These values can be applied to all aesthetic procedures involving the nose of south Indian population.

PREVALENCE AND RISK FACTORS OF ORAL CANCER AND POTENTIALLY MALIGNANT DISORDERS IN KODAVA POPULATION: DENTAL HOSPITAL BASED RETROSPECTIVE STUDY

Names : Chethan Kumar. S and Sushma. M
Guide : Dr Veena S Narayanan and Dr Sahithi. P
Institute : Coorg Institute of Dental Sciences, Virajpet



The Kodavas are considered a patrilineal ethno-lingual tribe from the region of Kodagu in Karnataka state of Southern India situated in the Western Ghats who natively speak the Kodava language. The aim of the paper is to consider whether there is evidence of marked ethnic variations in the prevalence and risk factors of oral cancer and PMDs. There isn't any literature regarding prevalence in Kodava community. Therefore this retrospective study was conducted to determine the prevalence of Oral PMDs and Oral Cancer and their associated risk factors among out – patients of different ethnic groups visiting a dental hospital in Kodagu district.

ASSESSMENT OF EXTENT OF LESION PROGRESSION IN AN ARTIFICIALLY DEVELOPED CARIES LESION

Names : Nawar Jabeen PTP and Mohammed Jadeer CJ
Guide : Dr Shanthala BM, Dr Shashidara R, Dr Malavika
Institution : Coorg Institute of Dental Sciences, Virajpet



Inspite of knowledge explosion in cariology science, dental caries remains a misunderstood phenomenon by the clinician. Standardizing caries lesion for experimental studies is quite difficult. Hence, creation of artificial caries in vitro paves way for standardization. The aims and objectives of this study is to assess the extent of induced caries lesion. To compare effectiveness of different excavation methods in the induced caries lesion. The entire surface of each specimen was painted with nail paint. The specimens were transferred into artificial caries solution. The solution contain brain heart infusion broth, sucrose, glucose and strain of Streptococcus mutans.

Results:

The changes observed in enamel surface after its exposure to artificial caries model will be examined by stereomicroscope / polarized microscope / excavation and the images will be interpreted.

HERBAL BONDING - GOING NATURAL

Name : Shabnam Shirin
Guide : Dr. Vikram Sunil and Dr. Gautham Reddy
Institution : Coorg Institute of Dental Sciences, Virajpet



INTRODUCTION:

With the advent of direct bonding agents a new era has dawned thereby opening new horizons in the specialty of orthodontics both in clinical and research field. The future of bonding is promising as new avenues are opening up but there is still remarkable lack of consensus regarding shear bond strength. Through this scientific paper we would like to highlight the effects of natural herbal products on the shear bond strength and their effect on enamel surface.

OBJECTIVES:

- ♦ To determine the effect of natural herbal products on enamel surface after etching, de-bonding and clean up through scanning electron microscope
- ♦ To compare the efficacy of a naturally occurring antioxidant Amla (Indian Gooseberry), Lemon and Aloe Vera in adjunction with carboxymethylcellulose (CMC) in normalizing the shear bond strength of enamel.

BACKGROUND:

In this in-vitro study we will evaluate the effect of Amla (Phyllanthus Embilica, Indian Gooseberry), Lemon and Aloe Vera extract in adjunction with carboxymethylcellulose (CMC) on the shear bond strength of composite resin to etched enamel.

METHOD:

Four extracted premolars from the same patient were divided into 4 equal groups; 1st group-control group, bonded directly; 2nd group-etched followed by using amla extract adjunct as bonding agent, then bonded; 3rd group-etched followed by using aloe vera extract adjunct as bonding agent, then bonded and 4th group- etched followed by using lemon extract adjunct as bonding agent, then bonded. Shear Bond strength was checked using Universal Testing Machine and bonded layer evaluation using Scanning Electron Microscope.

RESULTS:

Test results are to be obtained.

UTILITY OF AI IN AMELOBLASTOMA

Name : Ms Pratheeksha N Kalappa
Guide : Dr Shashidara R and Dr Archana V Krishnan
Institution : Coorg Institute of Dental Sciences, Virajpet

**INTRODUCTION :**

In the recent years there has been an amplified focus on the use of artificial intelligence in various domains to resolve complex issues. Likewise the adoption of artificial intelligence in healthcare is growing while gradually changing the face of healthcare delivery.

MATERIALS AND METHODS :

In the following research the demographic data, clinical data, imaging data and histopathological data of ameloblastoma cases reported at CIDS since 2005 were collected and fed into the MEDEVA software. This paper will focus on the AI interpretation and outputs obtained from this data.

SUMMARY :

This study will focus on the utility of Artificial Intelligence in the diagnosis and treatment of ameloblastoma.

TO ASSESS THE ANTIOXIDANT PROPERTY OF THE HUSK OF COCOA BERRY

Name : Shreya. S. C
Guide : Dr. Shanthala. B.M and Dr. Malvika
Institute : Coorg Institute of Dental Sciences, Virajpet



BACKGROUND:

Antioxidants are compounds that inhibit oxidation. Oxidation is a chemical reaction that can produce free radicals, thereby leading to chain reactions that may damage the cells of organisms.

ROLE OF ANTIOXIDANTS IN GENERAL HEALTH

Antioxidants are substances that may protect your cells against free radicals, which may play a role in heart disease, cancer and other diseases. Free radicals are molecules produced when your body breaks down food or when you're exposed to tobacco smoke or radiation.

ROLE OF ANTIOXIDANTS IN ORAL HEALTH

Imbalance in levels of free radicals and antioxidants in saliva can cause dental caries. They are also important allies that fight against common dental issues like periodontal disease and gum disease.

AIM:

To assess the antioxidant property of the husk of coca berry

METHODOLOGY:

Collection of cocoa berry from the cocoa plant was done. The outer husk was separated from the berry. The husk was sun dried for 3 days and ground into powder. 5 gm of the ground powder was mixed with 100ml of distilled water & boiled for 15 minutes, following which the filtrate was extracted. The extract was kept in the hot air oven for 3 consecutive days. This cocoa husk extract was then used to perform antioxidant property.

RESULT:

Husk is found to have.....???

CRAFTING A STRUCTURED PORTFOLIO FOR APPRAISING DENTAL UNDERGRADUATE COMPETENCE

Name : Payal Mishra
Guide : Dr. Deepti Vadavi, Dr. Harikiran AG
Institution : D A P M RV Dental College, Bangalore



Introduction:

BDS curriculum aims at producing a competent dental graduate. However to ensure that the progress of the student is recorded and measurable, portfolio may work better than the present logbook. Portfolio is an extension of the log book that incorporates all the log book components along with additional components like reflection, feedback from faculty/peer and longitudinal learning.

Aim:

To design and obtain feedback on a sample portfolio for final year Dental Undergraduate students.

Methods:

After a thorough review of literature, a qualitative study design was adopted for the study. The portfolio was designed incorporating all the components of the present logbook for final year and incorporating components that would ensure achievement of the required competencies. Once the portfolio was completed, the draft was shared with selected final year students and interns and feedback on the same was obtained through one on one in depth interviews.

Results:

Manual transcription of the collected feedback data was done and analyzed for generating themes. A total of 7 themes were generated – Students' perception of present log book, Log book versus portfolio, Students view on our portfolio, Learning in portfolio, extracurricular activities, Challenges in implementation and suggestions for improvement.

Discussion:

Overall the students liked the concept of the portfolio as it provides a holistic approach to learning. However, they were a bit worried about its implementation because of the challenges involved. We believe that the portfolio will promote greater competency of the students through improved communication skills and behavior leading to better practice management.

CASE STUDY OF LICHEN PLANUS USING ARTIFICIAL INTELLIGENCE

Names : Parthayadav KP and Abdul Kadhar Qureshi

Guide : Dr. Shashidhara and Dr. Archana

Institute : Coorg Institute of Dental Sciences, Virajpet



Lichen planus is one of the most common muco-cutaneous diseases encountered in the oral cavity. Though various treatment modalities are utilized in the treatment of these diseases the possibility of malignant transformation and recalcitrant behaviour remain concerns. This study is a pilot project to examine the output from deep data analytics and machine learning obtained from the clinical and histological data of lichen planus cases in our institution in the time period 2005 to 2020.

CASE STUDY OF RADICULAR CYST USING ARTIFICIAL INTELLIGENCE

Names : Uzmafathima and Bharath.G

Guide : Dr Shashidara and Dr Archana

Institute : Coorg Institute of Dental Sciences, Virajpet



Odontogenic cysts and tumors are rather uncommon lesions in the context of pathology. Traditionally these have been diagnosed on the basis of their clinic pathological features but have demonstrated intralesional variability.

Artificial intelligence is a developed on machine learning technology and used to assist clinician in making a more accurate diagnosis.

In the following research the demographic data, clinical data, imaging data, histopathological data etc .. Radicular cysts (the most common odontogenic cysts) at CIDS since 2005 were collected and fed into the MEDEVA software. The results obtained were compared and evaluated to arrive at predictive parameters for the behaviour of these cysts.

ADVANCEMENT OF ARTIFICIAL INTELLIGENCE IN THE STUDY OF SQUAMOUS CELL CARCINOMA

Names : Ananya K.Y. and Sanjana.S
Guide : Dr Shashidara and Dr Archana
Institute : Coorg Institute of Dental Sciences, Virajpet



It is essential for each of us to have a thorough knowledge about demographics and other relevant features of any pathology to understand the behaviour of pathology and to arrive at a predictive diagnosis and prognosis based on the same.

Artificial intelligence is a developed onmachine learning technology and used to assist clinician in making a more accurate diagnosis.

In the following research the demographic data, clinical data, imaging data, histopathological data etc .. of squamous cell carcinoma cases reported at CIDS since 2005 were collected and fed into the MEDEVA software. The results obtained were compared and evaluated to arrive at correlations between data and diagnosis.

COMPARATIVE EVALUATION OF OXYGEN SATURATION AMONG DENTAL SURGEONS USING N95 FFR MASKS AND 3M HALF FACEPIECE ELASTOMERIC RESPIRATORS:ACLINICALSTUDY

Names : Monica R and Sitara Subbiah
Guide : Dr. Amit K Walvekar
Institute : Coorg Institute of Dental Sciences, Virajpet



Need for the study:

The usage and importance of face masks have exponentially increased during the recent pandemic outbreak as mandated by the Government but the physiological impact of N95 FFR and 3M elastomeric respirators masks on long term use are yet to be fully understood. The aim of this study is to evaluate the effect of these two types of masks on the oxygen saturation levels of the dental surgeons on long standing procedures.

Introduction:

Filtering facepiece respirators (FFR) are the most commonly used with the N95 FFR being the most popular overall. The number 95 signifying that it is at least 95% efficient in filtering particles. Elastomeric respirators are available as alternatives to disposable half mask filtering facepiece respirators (FFRs), such as N95 FFRs, comparatively elastomeric respirators have been found to have 60% higher filtration performance. Previous reports highlighted that difficulty in breathing resulted in limited tolerability when the N95 face mask was used for a prolonged period.

Therefore, this study aims to clinically evaluate and compare the physiological effect of N95 FFR and 3M elastomeric respirators on dental surgeons.

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PERIODONTITIS - ANEGLECTED COVID 19 RISK FACTOR?

Names : Vasudha K K A and Kanishtha Riyaa

Guide : Dr Nizar Ahmed

Institute : Sri Ramachandra Faculty of Dental Sciences, Sri Ramachandra Institute of Higher Education and Research

Introduction :

Around 80% of COVID 19 patients recovered without serious complications . However, a sizeable proportion of seemingly healthy individuals suffered severe complications. Researchers were quick to notice that certain risk factors and co morbidities associated with periodontal disease overlap with severe covid 19 infections.

Results :

Since mid-April 2020 researchers hinted at a potential connection between the severity of covid 19 infections and periodontal disease. A study published in the British dental journal stated that an altered oral micro biome, especially in patients with co morbidity, predispose them to bacterial super infections resulting in pneumonia, sepsis and SARS. Furthermore, periodontopathic bacteria presents in severely infected COVID patients provides evidence of super infection. Other studies also highlighted increase levels of inflammatory markers like TNF and Interleukins, which are also associated with periodontitis. Periodontitis has long been linked with the risk factors of Diabetes, Hypertension and Cardio vascular disease (which in turn aggravate COVID 19) Hence it is possible that periodontal disease is a neglected risk factor for COVID 19 illness.

Discussion :

The role of poor oral hygiene in the progression of systemic disease is well established among the medical community but is often neglected by the public. This negligence may stem from a lack of awareness, so it is our responsibilities as a health care workers to explain that “ The puzzle of systemic health is incomplete without the essential piece of oral health”. In this current climate, it is of utmost importance to reduce the chances and severity of COVID 19 infections.

A NEW HOROSCOPE IN DENTISTRY - ARTIFICIAL INTELLIGENCE (AI)**Name : Sritej Jagtap****Guide : Dr. Rashmi Hosalkar****Institution : MGM Dental College and Hospital, Navi Mumbai, Maharashtra****Introduction :**

Artificial intelligence (AI) sometimes also called as machine intelligence is defined as 'a field of science and engineering concerned with the computational understanding of what is commonly called intelligent behaviour, and with the creation of artifacts that exhibit such behaviour.

The use of AI includes wide range of activities like medical diagnosis, electronic trading platforms, robot control, and remote sensing. It also has been used to develop and advance numerous fields and industries, including finance, healthcare, education, transportation, and more.

In healthcare it have been developed and applied to practices such as diagnosis processes, treatment protocol development, drug development, personalized medicine, and patient monitoring and care. It also has shown its application in dentistry and its branches.

Aim and objective :

To study the future and scope of AI in various branches of dentistry.

Methodology :

Original Pubmed listed studies and reviewed articles on uses of AI in dentistry were considered.

Result :

Studies reveal that AI is used in various branches of dentistry for occlusal correction, caries prevention, stem cell regeneration, post therapeutic diagnosis, radiological and histopathological diagnosis, etc.

Conclusion :

Artificial Intelligence is the near future not just a myth in dentistry. Use of AI is growing rapidly in various branches of dentistry. AI can help in diagnosis of disease, which could also include correlation with various clinico-radiological findings and provision of suitable treatment option to the patient. Nevertheless, a clear understanding of the techniques and concepts of AI surely have an advantage in the coming future.

ANTIPLATELET THERAPY IN PATIENTS UNDERGOING ORAL SURGERY.**Name : Hepci Ramya.V****Guide : Prof Dr M.S. Senthil Kumar****Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore**

Haemostasis is essential for the success of Oral surgical treatment. The risk of Bleeding has become a major complication of Oral surgical procedures. Antiplatelet agents play an important role in primary and secondary prevention of Arthrothrombotic events. The Bleeding tendencies can be minimized by Oral antiplatelet drugs. Maintaining a balance between the risk of bleeding and ischemic conditions remains a significant factor in managing patients on Antiplatelet therapy. New Antiplatelet therapies have been developed and each new therapy has specific benefits. Nevertheless, there is a risk for thrombotic complications after interruption of Antiplatelet therapy for dental procedures. So there is a dilemma of either Cessation or Continuation of Antiplatelet agents in patients undergoing Dental Procedures. The aim of this paper is to present the importance of Antiplatelet therapy in the management of Postoperative Bleeding during dental extraction. To Conclude, it is noted that for the patients with Antiplatelet therapy, the fear of Postoperative Bleeding during Oral surgical procedures is comparatively lower than for patients who were not under Antiplatelet Medications.

LET'S DESIGN SMILES - DIGITALLY!**Name : Suprasna Sharan****Guide : Dr. R. Shakir Ahmed****Institution : Sri Ramachandra Dental College, SRIHER, Chennai****ABSTRACT:**

A beautiful smile and harmonic facial esthetics are attributes that contribute to the well-being of any patient. An important objective of an esthetic treatment is that the final result should be as close as possible to the patient's expectations, improving his/her facial esthetics and smile. Dental Smile Design is a technical tool which is used to design and modify the smile of patients digitally and help them to visualize it beforehand by creating and presenting a digital mockup of their new smile design before the treatment physically starts. It helps in visual communication and involvement of the patients in their own smile design process, thus ensuring predictable treatment outcome and increasing case acceptance. An attempt has been made to throw light in a paper on comparative analysis on efficacy and outcome of various Digital Smiles Design technologies.

“COVID VACCINE – A THUNDERBOLT TRANSFORMATION”**Names : Mehul Bagmar R and Manasa S****Guide : Dr. Akila Ganesh****Institute : Sri Ramachandra Institute of Higher Education & Research**

Corona Virus Disease-19(COVID 19) is a highly contagious respiratory disease caused by the SARS-CoV-2 virus. SARS-CoV-2 is thought to spread from person to person through droplets released when an infected person coughs, sneezes, or talks. It may also spread from a contaminated surface with the SARS COV-2 in it. COVID-19 has rapidly spread globally, progressing into a pandemic situation. This situation has urgently impelled many companies and public research institutes to concentrate their efforts on research for effective therapeutics. Here, we outline the strategies and targets currently adopted in developing a vaccine against SARS-CoV-2. Despite the success of vaccination to greatly mitigate or eliminate threat of diseases caused by pathogens, there are still known diseases and emerging pathogens for which the development of successful vaccines against them is inherently difficult. Besides the traditional inactivated or live attenuated and subunit vaccines, emerging non-viral vaccine technologies, such as DNA/RNA vaccines, and rational vaccine design, offer innovative approaches to address existing challenges of vaccine development. They have also significantly advanced our understanding of vaccine immunology and can guide future vaccine development for many diseases, including rapidly emerging infectious diseases, such as COVID-19. This review also provides an integrative discussion of the various vaccine development and their comparisons in use to address the most fundamental and ongoing challenges of the COVID-19 vaccine development.

“COVID TONGUE” – A UNIQUE ORAL TRAIT**Name : Nandhini M and Janani P****Guide : Dr. Malarkodi T****Institution : Sri Ramachandra Institute of Higher Education & Research**

Coronavirus disease 2019 (COVID-19) is a contagious disease caused by SARS-CoV-2. The first case was identified in Wuhan, China in December 2019. It has since spread worldwide, leading to an ongoing pandemic. The virus spreads mainly through small droplets and aerosol from an infected person's nose and mouth as they breathe, cough, sneeze or speak. Since the outbreak of the deadly virus, number of COVID-19 symptoms have expanded and continued to increase. While the bid to contain the spread of the virus continues to rage on, new and unusual symptoms have come to the surface and wreak havoc in the public domain. Although, fever, fatigue and dry cough are some of the most predominant signs of SARS-CoV-2, oral manifestation also plays a major role, first reported one was dysgeusia, followed by xerostomia and candidiasis and now in the recent past a rare and 'strange symptom' has been established amongst COVID-19 patients. Now, researchers are investigating it and named it as “COVID Tongue.” In the past few day's an epidemiologist from King's College, London claimed that there is an increase in number of patients reporting uncomfortable symptoms in mouth. The symptom, appears as tongue discoloration, swelling, ulcers and other mouth issues. This paper highlights the pathogenesis, epidemiology, treatment modalities about this rare oral presentation of COVID 19.

SONODYNAMIC THERAPY – A PROMISING PRODIGYIN TREATMENT OF ORAL CANCER

Name : Annie Shirly and Priyanka G

Guide : Dr. Ann Tryphena

Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore.



Cancer has become the first killer of human health among which Oral Squamous Cell Carcinoma accounts for more than 90%. The anti-cancer therapy has attracted more and more researchers all over the world. Currently, radiotherapy, chemotherapy and surgery are main methods involved in anti-cancer therapy. However, each has its own limitations. So recently, Sonodynamic Therapy has been developed as a promising non-invasive approach derived from Photodynamic Therapy. Sonodynamic Therapy (SDT) is an emerging treatment that involves synergetic interaction between ultrasound and specialized chemical agents known as Sonosensitizers, that generate the Reactive Oxygen Species (ROS) when exposed to ultrasound. Protoporphyrin IX (PpIX), a hematoporphyrin derivative is one of the sonosensitizers which is target specific for cancer cells, while metabolize quickly in normal cells. Studies were done in which two Oral Squamous Cell Carcinoma derived cell lines were managed with Protoporphyrin IX. It was found that PpIX based SDT effectively suppressed the proliferation and growth of cancer cells through cell cycle arrest and cell apoptosis. So, in vitro and in vivo data has been generated demonstrating the therapeutic effectiveness of SDT in the treatment of cancer. A greater understanding of the mechanism underlying ROS generation in SDT will surely enable the design of more effective sensitizers and help improve the understanding of ultrasound dosimetry and therapeutic response.

A SIGHT INTO THE ASSOCIATION BETWEEN CONGENITAL CARDIAC DISEASES WITH CLEFT LIP AND CLEFT PALATE PATIENTS-LITERATURE REVIEW

Name : Jaswanth Kumar.B and S. Pranesh

Guide : Dr. S. Karthikeyani

Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore



Cleft lip and Cleft Palate (CLCP) is one of the most common congenital craniofacial deformities seen in children. Lots of congenital anomalies are associated with CLCP. This paper throws light on the association of Congenital Cardiac Disease (CCD) with CLCP. Cardiac anomalies are one of the most common congenital disorders associated in CLCP patients. It includes Cyanotic and Acyanotic cardiac diseases like Fallot's Tetralogy, Transposition of greater vessels, Atresia of tricuspid, Total Anomalous Pulmonary Venous Return (TAPVR), Truncus arteriosus, Ebstein's anomaly, Atrial septal defect. Similarly children with syndromes like Pierre Robin Syndrome, Stickler Syndrome, Treacher-collins Syndrome, Velocardiofacial Syndrome have recorded a high incidence of CCDs in association with CLCP. A complete clinical examination supplemented with echocardiogram could be implemented among patients with CLCP to rule out CCD. Insight on the importance of cardiac sufficiency in oral and facial cleft plastic surgeries as well as in leading a normal healthy lifestyle made us to review the literature on the association of CCD in CLCP Patients.

DIGITAL TRENDS IN PROSTHODONTICS

Name : Shalini C and Sofiya.B

Guide : Dr. Anjana Kurien

Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore

Digitalization is one of the most important parts of modern dentistry. It combines the efficiency of machines with the creative skills of human beings to provide better results. In dentistry, digitalisation enables patients to receive modern solutions of conventional dental problems. Digital technologies that are available for Prosthetic dentistry such as Digital radiography, Optical impression, 3D Printing, Computer-aided design/computer-aided manufacturing (CAD/CAM), Digital dental implants, Shade matching, Digital smile designing, Virtual articulators, Occlusion and temporomandibular joint (TMJ) analysis, Photography are discussed in the paper. These technologies will not only increase oral health at a fraction of the current conventional cost, but also ignite participatory in personalized oral health care. If digitalization is implemented in clinical dentistry with proper knowledge, then it can increase the joy of practicing dentistry and better care for patients.

SALIVA AS AN EARLY INDICATOR IN THE DETECTION OF PSYCHOLOGICALLY DEPRESSED INDIVIDUALS

Name : Akshita.A

Guide : Dr. Sidra Banu

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Depression is a common mental disorder, that presents with depressed mood, loss of interest, decreased energy, feelings of guilt, disturbed sleep or appetite, and poor concentration. It is often intertwined and interwoven with psychosomatic illness since it can be the trigger that precipitates a somatic illness. This ailment stands 2nd worldwide and its prevalence is about 14.3% i.e. among males it is 14.2% and among females 14.4%. In these patients, a compromised oral hygiene may result in altered salivary composition, as the autonomic nervous system is affected. Salivary diagnostics is a dynamic and emerging field that helps in the detection of depression at early stage. This paper mainly throws light on how the sialo chemical profile, serves as a pathway in the early diagnosis and prevention of major affective disorder.

ARTIFICIAL INTELLIGENCE - THE FUTURE OF ORAL CANCER DIAGNOSTICS

Name : Melvyn John R

Guide : Dr. Ann Tryphena

Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore



Globally, oral cancer is the sixth most common type of cancer with India contributing to almost one-third of the total burden and the second country having the highest number of oral cancer cases. Early diagnosis is the most important determinant of oropharyngeal squamous cell carcinoma outcomes, yet most of these cancers are detected late, when outcomes are poor. Over the decades, new equipment has emerged in dental field, and we have witnessed the importance of imaging such as computed tomography, magnetic resonance imaging, ultrasound and X-ray in successful diagnosis and treatment of various cancer. Now, we are in an era of artificial intelligence (AI), where machines are modeled after human brain's ability to take inputs and produce outputs from given data. AI has a wide range of uses and applications in health services industry. Factors such as increase in workload, complexity of work and potential fatigue of doctors may compromise diagnostic ability and outcome. AI components in imaging machines would reduce this workload and drive greater efficiency. They can detect cancer with more accuracy than humans with no subjectivity. Some studies demonstrate that artificial intelligence approaches combined with imaging can have considerable impact on oral cancer outcomes, with applications ranging from low-cost screening with smartphone-based probes to algorithm-guided detection of oral lesion heterogeneity and margins using optical coherence tomography. Combined imaging and artificial intelligence approaches can improve oral cancer outcomes through improved detection and diagnosis.

BLINDNESS ASSOCIATED WITH MIDFACIAL FRACTURE

Name : Indhumathi S

Guide : Dr R. Kannan

Institution : Sri Ramakrishna Dental College and Hospital



Blindness in patients suffering maxillofacial trauma is usually caused by optic nerve or optic canal injuries. It is, however, an uncommon complication of facial trauma. Loss of vision associated with severe midface trauma is most likely to occur with road traffic accidents and gunshot injuries. High impact from such incidents often causes extensive damage to the eyeball resulting in immediate and irreversible blindness. Injuries to the face can potentially lead to destruction of vital structures, with devastating sequelae to the patient. Facial fractures, especially of the midface, are often complicated by ocular injuries. Blindness may also follow surgical repair of facial fractures. Many mechanisms, such as *traumatic optic nerve injury*, intraoperative direct nerve injury, retinal arteriolar occlusion associated with orbital edema, or delayed presentation of indirect optic nerve injury sustained at the time of the initial trauma, have been implicated in causing this blindness. Postoperative ophthalmic complications seem to be primarily mediated by indirect injury to the optic nerve and its surrounding structures. The most frequent cause of postoperative visual loss is an increase in intraorbital pressure in the optic canal. Blindness is also attributable to intraorbital hemorrhage and in addition to unspecified mechanisms of increased intraorbital pressure. The characteristics of the eye injuries sustained are related to the aetiology of the fracture, the type of fracture, and the sex and age of each patient. The clinician needs to be aware of these complications and its management. In this presentation we discuss the causes for blindness associated with midfacial fracture and methods of intervention.

COVID TONGUE

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Coronavirus disease 2019 (COVID-19) has been rampaging all over the world, since December 2019. Until February 13, 2021, close to 108 Million people have been infected worldwide, and the mortality rate has reached close to 4.4%.

There has been more than 10 Million confirmed cases in India. Through syndrome differentiation, the etiology and nature of the disease can be identified, and the corresponding treatment methods can be determined.

Tongue features are important bases of syndrome differentiation and treatment. They can be used to diagnose the disease. Hence, appropriate treatments can be provided. Several clinical trials of tongue features in COVID-19 have been published. Most of these studies investigated tongue features as the symptom of COVID-19. These studies reported statistically significant difference of tongue features between COVID-19 patients and healthy people. The results of those studies showed COVID-19 patients had red or light red tongue, yellow coating and greasy coating. The tongue features also showed statistically significant difference between different types of COVID-19. Therefore, it is feasible to use tongue features as differential diagnostic indicators between different types of COVID-19. However, due to the minor sample size of prior studies, the specificity of the results was low. Besides, heterogeneity between studies were significant, which makes it difficult to pool the results.

In order to definite the diagnosis efficiency of tongue features in COVID-19, this review analyzed the tongue pictures of confirmed cases, and find out the valuable features of tongue, so as to provide information for the diagnosis and treatment of COVID-19.

DISTRACTION AS AN ATTRACTION TOOL TO TREAT KIDS

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Keywords: anxious child, distraction, relax, reduce anxiety, positive thought, dental treatment

Managing a child in the dental clinic is a challenging task. Instilling a prior positive thought makes it easier to provide dental treatment, as an anxious child can never be a part of successful dental treatment. Various behavior management techniques of non-pharmacological and pharmacological forms are available at dentist's disposal and the latter is used as last method of management. Under non-pharmacologic methods, tell show do and distraction has proven to be one of the effective ways to manage kids, the later being better to manage anxious kids in dental office. The objective of the distraction technique is to reduce the anxiety and relax the patient by distracting them from sound or site of dental treatment. Various methods of distraction are as follows audio and audio-visual like videos, stories, magic tricks, music, video games where audio-visual method has proven by researches to be the best tool to distract kids.

SALIVA IN DIAGNOSIS OF COVID 19

Name : Lekha K
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The covid 19 pandemic disease caused by SARS COV 2 started in the mild December 2019 and showed it's spikes all over the world. In order to trace and to implement prevention strategies, extensive testing for SARS COV 2 was suggested. In recent days, saliva has been emerging as an excellent alternative to nasopharyngeal / oropharyngeal swabs because SARS COV RNA can be found in saliva before lung lesion. ACE 2 expression in minor salivary glands is greater than that of lungs, so it is a significance reservoir of virus. Virus reaches the oral cavity along with liquid droplets from the respiratory tract, through GCF from blood, infected salivary gland. The saliva stands positive even during incubation period. The positive rate of SARS COV 2 in saliva of patients is more than 92% and the live virus can be cultivated from saliva sample.

The advantages of RT PCR from saliva sample are non invasive, can be done at chair side, healthier than serum sampling, numerous sample can be obtained, minimize the possibility of cross infection, easier handling. It has shown about 82.4% sensitivity and 98.9 % specificity.

Other popular tools such as LamPORE, CRISPR D, (Sherlock, Detectr, HUDSON), Easy COV test, saliva direct test specifically targets saliva for diagnosis of SARS COV2. The advantage of these tools over RT PCR are more simple, economical, non invasive, rapid turn around time (~1 hour), no requirement of complex laboratory steps, helpful for controlling the systemic health. It also alleviates the demand for supplies of swab and PPE. Foremost saliva samples help in rapid detection of asymptomatic infected individuals. With developing trends, saliva will stay in one of the superior position in diagnosis as long as infectious and non infectious disease exists!

REGENERATION AND TISSUE ENGINEERING OF VITAL DENTAL TISSUES

Name : Aishwarya S
Guide : Dr. V. Gayathri
Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore

To restore the lost dental tissues, restorations, endodontic therapy and fixed prosthesis, have been established. Although these artificial therapies are widely applied to treat dental disorders, recent advances in tissue regeneration have been made to enhance the functions of the biological tooth, allow for underlying tooth movement through bone remodeling. Substantial advances in development of regenerative therapies have potential to repair damaged tissues and restore partial loss of organ function. In dental medicine, tooth tissue derived stem cells that regulates tooth development have been well characterized at the molecular level which can be applied to the repair of dental pulp and periodontal tissues, including the alveolar bone. Postnatal stem cells critically maintain tissue homeostasis and possess immense potential for tissue regeneration. It has long been known that the tooth is capable of forming reparative dentin after injury. it was considered that resident stem cell populations exist in the dental pulp and periapical region. The origin of DPSCs & APSCs are associated with neural crest-derived cells and localized adjacent to neurovascular bundles. Dental stem cells serve as key contributors to vital tissue regeneration and injury repair. In this paper, we describe technologies of tooth replacement by stem cells that have the potential to provide functional recovery and could some day replace dental treatment based on artificial materials.

VIRTUAL REALITY- MODERN EDUCATION'S ENTITY

Name : Poornima Palanimurugan and Nikkitha. S
Guide : Dr. Malarkodi. T
Institution : Sri Ramachandra Institute of Higher Education and Research



Does THEORY and PRACTICE go hand in hand and reach its complete efficiency? If your answer is yes, our reply would be “not always”! There is a need for a connector to facilitate its implication on our dental practice. Here comes the concept of virtual reality in the form of a software to overcome the risk and create a better interactive and self learning environment.

This virtual reality acts as an adjunct to improve the student's motor skills and hand eye coordination, allowing the student to confidently move into the clinical setting on real time patients, thereby improving their learning process.

In the current COVID situation, the risk through patients can be minimized by this virtual reality tool.

Apart from infection, the avoidance of another important parameter- EXPOSURE TO RADIATION is also minimized by this software.

This illustration will have its detailed implication on DENTAL RADIOLOGY. Yes, our review is intended to emphasize on this character animation technique - DENTAL RADIOGRAPHY SIMULATORS.

OSSEODENSIFICATION IN IMPLANT DENTISTRY

Name : Keerthika. S
Guide : Dr. M. Arun
Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore



Primary implant stability is essential for successful osseointegration. The factors which determine primary implant stability are bone density, implant type and the surgical procedures followed. It is necessary to achieve high insertion torque to obtain primary implant stability since it significantly increases the bone to implant contact percentage. This can be achieved through a new concept called 'Osseodensification', which is a biomechanical method of bone preparation. Worked in a non subtractive fashion, it permits bone condensation and preserves the bone through compaction auto grafting in a lateral direction. This technique uses the Densah bur system by Dr.Huwais, through which better osteotomy, bone density, indirect sinus lift and alveolar ridge expansion is achieved. When comparing conventional method with osseodensification, it was found that conventional method removes bone, while osseodensification preserves the bone and increase its width. Also, osseodensification results in better primary implant stability, increased bone to implant contact percentage and smaller osteotomy diameters. The purpose of the review is to elaborate the concept of osseodensification, its mechanism, the various procedures involved and to prove that osseodensification procedure is advantageous as compared to the conventional method.

RECENT ADVANCES IN PLATELET CONCENTRATES

Name : Theerthini VP
Guide : Dr Nizar Ahmed
Institution : Sri Ramachandra Faculty of Dental Sciences



Introduction:

Blood biomaterials have been used for wound healing and tissue regeneration in various fields such as dentistry, dermatology and sports medicine. Research in platelet concentrates has exponentially increased in recent years, owing to their increased efficacy of wound healing. What started out with 'Fibrin Glue' (1970) has now branched out into PRP, PRF, A-PRF, i-PRF and CGF. Further advancements, such as the advent of Titanium-prepared PRF (T-PRF), have contributed to an ever-growing interest in platelet concentrates.

Method:

This review is based on platelet concentrates which is widely used in periodontal therapy and pulpal regeneration, which has been compiled from various scientific databases and recent edition textbooks on tissue engineering.

Result:

Important aspects of platelet concentrates, such as history and development, composition, types, preparation protocols, methods of treatment and their actions on tissues have been documented.

Discussion:

Platelet concentrates initially started out as 'Fibrin Glue'. Platelet Rich Plasma (PRP) has been used in regenerative procedures. The second generation of platelet concentrates, Platelet Rich Fibrin (PRF), has been effective in healing. I-PRF, an injectable form of PRF is mixed with bone graft for agglutination. Effects of platelet concentrates on human tissues include increased proliferation and differentiation of pulp stem cells, neovascularization, endodontic regeneration etc.

This paper reviews the various applications and recent advances of platelet concentrates in periodontal therapy and other fields of dentistry. Advancements in this field has benefitted post-surgical healing in dentistry immensely, and will continue to do so.

PIEZAWE IN PERIODONTICS –A REVIEW

Name : Rajshree Shannon Nair and Shilpa Narendran

Guide : Dr Deepak Moses Ravindran

Institution : Sri Ramachandra Faculty of Dental Sciences, SRIHER, Chennai



Introduction:

Dentistry has undergone significant advancement and has seen several changing concepts over a decade. Traditionally, osseous surgery was performed using hand instruments and various rotary instruments with different burs, which required external copious irrigation because of the production of heat using these instruments. In addition to heat, considerable pressure was also exerted in osseous surgeries, with a limitation in the case of fractured or brittle bones. To overcome the above-mentioned limitations, a novel surgical technique was introduced based on ultrasonic microvibration for precise and selective cut on the bone, without injuring the surrounding tissues. This new alternative method, introduced in dentistry for bone related surgeries, was termed piezosurgery.

Discussion:

Piezosurgery has therapeutic features that include a micrometric cut (precise and secure action to limit tissue damage, especially to osteocytes), a selective cut (affecting mineralized tissues, but not surrounding soft tissues), and a clear surgical site (the result of the cavitation effect created by an irrigation/cooling solution and oscillating tip). Because the instrument's tip vibrates at different ultrasonic frequencies, since hard and soft tissues are cut at different frequencies, a “selective cut” enables the clinician to cut hard tissues while sparing fine anatomical structures. A great number of studies demonstrate the high success rate of dental implants for both function and esthetics

Conclusion:

The present review compares piezosurgery with the traditional tools and emphasizes on its mechanism of action, instruments, biologic effects, advantages, and limitations, as well as its various applications in the field of dentistry.

AMIXICILE-A NOVEL ANTIBIOTIC TO TREAT PERIODONTAL DISEASES.

Name : Harsha Nandhini. D

Guide : Dr. Koshy Chithresan

Institution : Sri Ramakrishna Dental College & Hospital, Coimbatore



RESEARCH QUESTION:

Search for a highly effective novel antibiotic with least side-effects to treat periodontal diseases.

Search Strategy:

Databases Searched:

PubMed

Keywords Searched:

Amixicile, Amixicile in periodontitis.

Results:

The PubMed database showed 11 articles for the keywords out of which 6 satisfied the inclusion criteria

Discussion:

Anaerobic bacteria are the major culprits of periodontal diseases. Previously employed antibiotics like tetracycline destroy both beneficial & pathogenic bacteria leading to oral dysbiosis. Metronidazole also targets anaerobic bacteria but it causes serious side effects like neuropathy, colitis etc...Hence, there arises a need for an antibiotic that selectively targets the anaerobic bacteria with least side effects as possible. Amixicile targets the PFOR enzyme required by anaerobic bacteria for energy generation. Amixicile destroys the late colonisers sparing the health promoting bacteria. Effectiveness of Amixicile has been found to be comparable to metronidazole, concentrates in the inflamed sites, well-tolerated at high dosage and produces less toxicity. Amixicile, though, is still under study and requires further clinical trials. If proved successful, Amixicile could act as a viable option for treating periodontal diseases in future.

EFFICACY OF SILVER DIAMINE FLUORIDE IN ARRESTING CARIOUS LESIONS IN PRIMARY TEETH

Name : Nikitha.B

Guide : Dr. Karthikeyan

Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore

ECC being highly prevalent in children presents with many traditional restorative methods as treatment options, but faces challenges in terms of affordability or possibility as it requires patient co-operation for desirable outcomes. Silver diamine fluoride (SDF) is one such material which helps in overcoming such challenges. SDF was first promoted in Japan in late 1960's as a painless and simple material, used for young children or patients with special needs. When applied onto carious lesions, the fluoride enhances remineralization of teeth and silver ions act as an antibacterial agent. 38% SDF is widely used clinically to effectively arrest carious lesions.

LOW-LEVEL LASER THERAPY (LLLT) ON DENTAL TITANIUM IMPLANT: A SYSTEMATIC REVIEW

Name : Sudhir Srikumar and Rahul George Mathew

Guides : Dr. J Naveen Kumar, Dr. Senthoo Pandian

Institute : Faculty of Dental Sciences, Sri Ramachandra Institute of Higher Education and Research

Low-level laser therapy (LLLT) has proved to have a biostimulating effect on tissues over which they are applied, thereby accelerating the healing process. Most studies in implantology were focused on a reduction of the duration of osseointegration. There exist few articles analyzing the potential effects of these therapies on the osseointegration of titanium dental implants. The aim of this study was to assess the effect of LLLT on the interaction between the bone and the titanium dental implant and the methodological quality of the studies. We conducted an electronic search in PubMed and Science Direct. From 21 references obtained, only 10 articles met the inclusion criteria. The analysis of the studies shows that most of the experiments were performed in animals, which have a high risk of bias from the methodological point of view. Only 4 studies were conducted in human bone under different conditions. Several protocols for the use of low-power laser and different types of laser for all studies analyzed were used. Although animal studies have shown positive effects on osseointegration of titanium implants, it can be concluded that it is necessary to improve and define a unique protocol to offer a more conclusive result by meta analysis.

LIP-OS (LIPUS AND OSSEOINTEGRATION)

Name : Z. Mohammed Ziyad and Aayush Deb
Guide : Dr J. Naveen Kumar, Dr S. Senthoo Pandian
Institute : Sri Ramachandra Institute of Higher Education and Research

Man's will to survive and adapt has, over the course of centuries, lead to various ingenious inventions and developments. One such quest to replace natural teeth with fully functional and aesthetic prosthetics has lead to the invention of dental implants. It was in the 20th century when the first titanium dental implant was placed in a human volunteer in 1965, by an orthopedic surgeon named Per Ingvar Branemark.

In order for the implant to be successful, the replacement tooth and the bone need to fuse together, through a process known as osseointegration. Upon finding that a titanium cylinder fused together with the femur bone of a rabbit during a study on bone healing and regeneration, Branemark hypothesized that this fusion could be utilized in other fields such as that of dental implants.

Osseointegration as defined by GPT8 is "The apparent direct attachment or connection of osseous tissue to an inert, alloplastic material without intervening connective tissue."

Trials since have established various factors aiding osseointegration. One such factor which we aim to bring to light with this systematic review is Low Intensity Pulsed Ultrasound.

An electronic search was conducted on Pubmed and Science Direct using the keywords osseointegration, dental implants and ultrasound which furnished 969 results. Articles were chosen under the criteria of low intensity pulsed ultrasound which filtered the search to 13 results of trials and experiments on lab rats and rabbits

In this paper, we hypothesize that this kind of wave might have an ability to strengthen and accelerate osseointegration of dental implants, and thus a potential usage in dental therapy.

RECURRENT APHTHOUS STOMATITIS - UNEARTHING THE UNEXPLORED

Name : Aishwarya Nair
Guide : Dr. Sidra Bano
Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore



The Greek term 'aphthai' was initially used in relation to disorders of the mouth and is credited to Hippocrates. Recurrent aphthous stomatitis is one of the most common painful oral mucosal conditions seen among patients. Presenting as recurrent bouts of solitary or multiple shallow painful ulcers, this condition is seen at intervals of few months to few days in patients who are otherwise well. Its prevalence in the general population ranges between 5% and 25%. Genetics, tobacco, certain drugs, hematinic deficiency, hormonal changes, stress and microbial infections are a few predisposing factors but the exact etiology still remains unknown. The common treatment modalities that are used are topical analgesics, antiseptics and antibiotics. In severe cases corticosteroids can be used. These drugs only provide a symptomatic treatment but not a definitive cure. Despite much clinical and research attention, the causes remain poorly understood, the ulcers are not preventable and treatment is symptomatic. This review aims at providing a novel outlook on the etiologic factors and the latest pharmacological treatment modalities of recurrent aphthous stomatitis.

DEMINERALISED DENTIN MATRIX FOR THE REPAIR AND REGENERATION OF DENTIN-PULP COMPLEX – A SYSTEMATIC REVIEW**Name : Harini Chakrika. M****Guide : Dr. Remya Varghese****Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore**

Various studies have reported the presence of bioactive molecules like dentin matrix protein-1 and transforming growth factor-beta in the extracellular matrix of dentin. Demineralisation of dentin matrix results in the mobilisation of these molecules. The aim of this systematic review is twofold - To investigate the effects of demineralised dentin matrix on the repair and regeneration of dentin-pulp complex; to assess the clinical applicability of this material as a bioactive pulp capping agent and as a scaffold for tissue engineering. Systematic search of the literature in PubMed database and citation search of the included articles were carried out. The keywords used were, “Treated dentin matrix”, “Demineralised dentin matrix”, “Vital pulp therapy”, “Pulp capping” and “Regeneration” in various combinations. The search generated a total of 1889 articles, of which 16 studies were included in this review. Of the selected studies, a majority (81.25%) of the studies were in vivo animal studies, while the remaining were clinical trials. Studies evaluated the performance of demineralised dentin matrix based on various parameters like bioactivity, immunogenicity and mechanical properties, with the test group outperforming the control group in most of the studies. Enhanced dentin regeneration and conservation of pulp vitality were achieved by modelling on the natural repair process of teeth, involving the stimulation of dental pulp stem cells by bioactive molecules released from dentin matrix. While current evidence points to the superiority of demineralised dentin matrix in terms of inductive effect and biocompatibility, further research is required to unearth their full potential.

GUIDED BONE REGENERATION – A SYSTEMATIC REVIEW

Name : Nirupama Ranganath Prasad and Kumar Kritiga
Guide : Dr. C. Deepak
Institution : Faculty of Dental Sciences, Sri Ramachandra Institute of Higher Education and Research



PURPOSE:

The aim of this systematic review was to assess different methods for guided bone regeneration using collagen membranes and particulate grafting materials in implant dentistry.

METHODS:

An electronic database search was performed for all relevant articles dealing with guided bone regeneration in implant dentistry published between 1994 and 2021. Only randomized clinical trials and prospective controlled studies were included. The primary outcomes of interest were survival rates, membrane exposure rates, bone gain/defect reduction, and vertical bone loss at follow-up.

RESULT

28 studies met the inclusion criteria and were analysed. The implant survival rates is expected to be similar between simultaneous and subsequent implant placement. Membrane exposure rate of cross linked membrane is expected to be higher than that of non cross linked membrane. Guided bone regeneration with particulate or resorbable collagen membrane is anticipated to be effective for both horizontal and vertical ridge augmentation.

DISCUSSION:

Guided bone regeneration is a surgical procedure that makes use of barrier membranes, with or without particulate bone grafts or bone substitutes, in order to increase alveolar ridge or improve ridge morphology. It can be done at the time of implant placement or preceding implant placement. Guided bone regeneration with particulate or resorbable collagen membrane has displayed a likely trend towards higher mean bone gain and lower exposure rate.

MAXILLOMANDIBULAR ADVANCEMENT IN THE TREATMENT OF OBSTRUCTIVE SLEEP APNEA –A LITERATURE REVIEW

Name : Madhuvanthi Gopalakrishnan

Guide : Dr. Senthil Kumar

Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore



Maxillomandibular advancement is a surgical procedure performed as a phase II procedure in the management of obstructive sleep apnea. It comprises of bilateral sagittal split ramus osteotomies and Le Fort I osteotomy with rigid internal fixation. Advancement of 10-15mm is necessary when there are no maxillomandibular abnormalities and more if present. This advancement results in passive anterior displacement of the soft palate and the tongue with a simultaneous widening of the pharyngeal space. MMA is usually indicated in the treatment of severe OSA, who cannot tolerate or adhere to CPAP or other options has been considered but is found ineffective or undesirable. MMA is usually considered when other procedure like UPPP is unsuccessful due to the development of velopharyngeal insufficiency or tracheostomy which will result in aesthetic disfigurement along with more serious complication like tracheal stenosis, hence recommended only in morbidly obese patients or with significant cardiovascular symptoms. The potential complications of MMA include transient anesthesia of the cheek and chin area, residual neuro sensitive deficit (hypoesthesia of the lower lip) temporary postoperative velar insufficiency (improved through cautious speech therapy). However, the essential benefit should be weighed against the risk of complication. Hence MMA is superior to other treatment methods in the treatment of severe OSA as one time cost of early MMA is less expensive than multiple surgeries or lifelong use of CPAP.

DIAGNOSTIC FEATURES OF ORAL ULCERATIVE LESIONS

Name : Ashmitha M

Guide : Dr. Bharat Raj R

College : V S Dental College & Hospital, Bangalore



Oral ulcers, although very common entity in dental clinics can be very challenging to diagnose because of their diversity in etiology and presentation. Oral mucosal ulcers range from ulcers due to minor local trauma to significant diseases such as bacterial, viral and fungal infections, malignancy and other systemic illness. Diagnosis of oral ulcerative lesions might be quite challenging. A decision tree is a flowchart that organizes features of lesions so that the clinician can make a series of orderly decisions to reach a logical conclusion. To use the decision tree, the clinician begins from the left side of the tree, makes the first decision, and proceeds to the far right of the tree, where the names of entities are listed. This paper aims to introduce an updated decision tree for diagnosing oral ulcerative lesions on the basis of their diagnostic features.

SALIVARY PACEMAKERS

Name : Jennifer Peo and Gayathri S Chandran
Guide : Dr. Pallavi N T
Institution : Coorg Institute of Dental Sciences, Virajpet



Saliva is an oral fluid secreted by salivary glands aiding in lubrication, digestion of food. The normal quantity of saliva is 0.5 to 1.5 per day. Decrease in quantity of saliva results in xerostomia. Xerostomia or dry mouth is a condition characterised by decreased saliva, resulting in extreme dry mouth, caries prevalence, glossodynia, fissured tongue, mucosal ulceration, bad breath etc. The denture wearers are mostly affected, as the denture retention will be lost. Artificial saliva, chewing sugarless candy gives only temporary relief to xerostomia. Use of sialogogues like pilocarpine can results in adverse effects on long term use. Salivary pacemakers on the other hand doesn't have any adverse effects, and on prolonged use increases salivary flow. They increase salivary flow by neuro - electrical stimulation i.e., the nerves innervating salivary glands are electrically stimulated. This presentation explains about generations of salivary pacemakers, its indications and contraindications.

NANOTECHNOLOGY IN PROSTHODONTICS

Name : Megha K B and Liana Sibi
Guide : Dr. Basavaraj S Salagundi
Institution : Coorg Institute of Dental Sciences, Virajpet



In recent years, science has undergone a great evolution, taking humanity to a new era: The era of nanotechnology. Nanotechnology is the field of science and technology pertaining to the creation and use of materials or devices at nanometer scale. Nanoscale is small in size, but its potential is vast. Since 1990s, nanotechnology has been exploited for potential medical and dental applications. Nanotechnology has numerous applications in the field of nanomedicine, nanomaterials, nanorobotics, implantology, and biotechnology. It has been shown that the performances of many biomaterials used in prosthodontics have been significantly enhanced after their scales were reduced by nanotechnology, from micron-size to nanosize. Nanomaterials in dentistry can be metals, ceramics, polymers, implant modifications, and composite materials that demonstrate novel properties when compared with conventional materials due to their nanoscale features. Nanocomposites composed of nanomaterials and traditional metals, ceramics, resin, or other matrix materials have been widely used in prosthodontics because their properties, such as modulus of elasticity, surface hardness, polymerisation shrinkage, and filler loading, were significantly increased after the addition of the nanomaterials. The present paper highlights the various applications of nanotechnology in the field of dentistry, especially in prosthodontics.

STEM CELLS IN ORAL AND MAXILLOFACIAL SURGERY

Names : Shilu Shabu and Sona Sunny
Guide : Dr. Vinod Thnagaswamy S and Dr. Jambukeshwar Kumar
Institute : Coorg Institute of Dental Sciences, Virajpet



Cells with unique capacity for self-renewal and potency are called stem cells. With appropriate biochemical signals stem cells can be transformed into desirable cells.

The future dentistry will be more of regenerative based, where patients own cells can be used to treat diseases. Stem cell therapy has got a paramount role as a future treatment modality in dentistry. Regenerative dentistry will have to go in pace with regenerative medicine. On the other hand, stem cells should be differentiated to the appropriate cell types before they can be used clinically, otherwise it might lead to deleterious effects.

The idea behind this article is to shortly review the obtained literature on stem cell with respect to their properties, types and advantages of dental stem cells. Emphasis has been given to the possibilities of stem cell therapy in the oral and maxillofacial region including regeneration of tooth and craniofacial defects.

RECENT ADVANCES IN LOCAL ANESTHESIA

Names : Fida Faisal and YoshitAdithyan
Guide : Dr. Vinod Thangaswamy S and Dr. Jambukeshwar Kumar
Institute : Coorg Institute of Dental Sciences, Virajpet



It would be currently unimaginable to practice dentistry today without the use of local anaesthetic agents. Procedures ranging from routine restorative dentistry to complex periodontal and oral surgery procedures require profound anaesthesia for both patient's comfort and the clinician's peace of mind. Current dental local anaesthetic agents such as 2% lidocaine and 4% articaine combined with 1:100,000 epinephrine report anaesthetic success rate with regard to pulpal anaesthesia in the 93– 97% range, following the injection of a single cartridge (1.7- 1.8 ml) in the maxillary arch .While local anaesthetic injections remain the mainstay of intraoperative pain control during a wide range of dental procedures, there are several drawbacks to this route of administration. First, the injection can be painful and in many instances, the only painful part of routine dental procedures. The injections can be anxiety-provoking in some patients and research has revealed that the fear of dental injections contributes to patient reluctance to seek dental care until they are dealing with a dental emergency. Finally, all dental injection techniques carry the small risk of needle stick wounds to the clinician with the potential transmission of blood-borne diseases such as hepatitis C and HIV. An intranasal delivery system of 3% tetracaine plus 0.05% oxymetazoline was FDA approved on June 29, 2016 with an indication for maxillary anaesthesia (without needles) for a single restorative procedure from the second premolar forward and on all primary teeth in patients weighing at least 40 kg. all four quadrants cannot be treated simultaneously with infiltration anaesthesia and dentists are required to administer additional anaesthetics, here are ongoing efforts to develop a topical anaesthetic that could be used on all the four quadrants.

This paper will discuss the clinical trials that support this drug's safety and efficacy, and identify further studies that need to be performed to expand this agent's rather narrow FDA-approved indication.

CONE BEAM COMPUTED TOMOGRAPHY IN ENDODONTICS

Names : Anitta Augustine and Bhagya. R
Guide : Dr. K C Ponnappa and Dr. Salin Nanjappa
Institute : Coorg Institute of Dental Sciences, Virajpet



Cone Beam Computed Tomography (CBCT) is a contemporary, radiological system designed specifically for use on the maxillofacial skeleton. The system overcomes many of the limitations of conventional radiography by producing undistorted, three dimensional image of the area under examination.

Successful management of endodontic problem is reliant on diagnostic imaging techniques to provide critical information about the teeth under investigations and their surrounding anatomy. Thus Cone Beam Computed Tomography becomes more effective by producing images with low radiation and adequate spatial resolution that are suitable for many applications in endodontics from diagnostics, treatment and follow-up. Some of the applications including diagnosis of periapical lesion due to pulpal inflammation, identification and localization of internal and external resorption, the detection of vertical root fracture, visualization of accessory canals and so on.

The usefulness of Cone Beam Computed Tomography and its useful modalities for endodontics is being reviewed in this paper.

SUBMENTAL INTUBATION IN ORTHOGNATHIC SURGERY

Names : Anagha R.S and Ankitha Shenoy
Guide : Dr. Vinod Thangaswamy and Dr. Alex Thomas
Institute : Coorg Institute of Dental Sciences, Virajpet



Airway management in patients with maxillofacial injury is challenging due to disruption of components of airway. The anaesthesiologist have to share the airway with the surgeon. Oral and nasal routes of intubation are often not feasible. Most patients have associated nasal fracture which precludes the use of nasal route of intubation. Intermittent intraoperative dental occlusion is needed to check alignment of fracture fragments which contraindicates the use of Orotracheal intubation.

Tracheostomy in such situation is conventional and time-tested; However, it has life threatening complications, it needs special postoperative care, lengthens hospital stay and adds to expenses. Retromolar intubation may be an option but the retromolar space may not be adequate in all adult patients.

Submental intubation provides intraoperative airway control, avoids use of oral and nasal route, with minimal complication. Submental intubation allows intraoperative dental occlusion and is an acceptable option. This technique has minimal complications and has better patients' and surgeons' acceptability.

The limitations are long time for preparation and inability to maintain long term postoperative ventilation and unfamiliarity of technique itself. The technique is an acceptable alternative to tracheostomy for good pre-operative airway access.

The purpose of E-Paper is to reveal the importance of Submental Intubation in Orthognathic Surgery.

PALAEOMICROBIOLOGY : PROSPECTS FOR ANCIENT DENTAL CALCULUS AS A LONG-TERM RECORD OF THE HUMAN ORAL MICROBIOME

Name : Kumkum Nanaiah
Guide : Mrs. Pavithra B
Institute : Coorg Institute of Dental Sciences, Virajpet



The field of palaeomicrobiology is expanding due to recent advances in high-throughput biomolecular sequencing which allows unprecedented access to the evolutionary history and ecology of human-associated and environmental microbes.

Human dental calculus has been shown to be an abundant, nearly ubiquitous and long-term reservoir of the ancient oral microbiome, preserving not only microbial and host biomolecules but also dietary and environmental debris.

Modern investigations of native human microbiota have demonstrated that the human microbiome plays a central role in health and chronic disease, raising questions about changes in microbial ecology, diversity and function through time.

This paper explores the current state of ancient oral microbiome research and discusses successful applications, methodological challenges and future possibilities in elucidating the intimate evolutionary relationship between humans and their microbes.

RECENT ADVANCES IN ANTIBIOTIC PROPHYLAXIS

Name : Alakananda .S
Guide : Dr. Prasannakumar.P and Dr. Alex Thomas
Institute : Coorg Institute of Dental Sciences, Virajpet



This review article/review article considers the changes in antibiotic usage over the past 40 years. Perhaps the most significant advanced recent prophylactic usage of this drugs to reduce the effects dentally induced bacteria. Antibiotic prophylaxis may be considered primary, secondary where it involves preventing the initial infection and recurrence or reactivation of infections A greater understanding of various dental infections and in particular the role of bacteria in pathogenesis of dental diseases, has led to further interesting indications for these drugs to prevent adjunctive measures whilst new indications for the use of antibiotics became more wide spread, all members of health care professions need to be aware that these drugs have significant adverse effects and their misuse can lead to life threatening infections. Antibiotic prophylaxis is an effective management strategy for reducing postoperative infections, provided that appropriate antibiotics are given at correct time for appropriate duration and for appropriate surgical procedures.

PHYTOCHEMICAL ANALYSIS AND ANTIOXIDANT ACTIVITY OF LACTUCAVIROSA (WILD LETTUCE)

Names : Vaishnavi J Reddy and Varshitha KS
Guide : Dr. Austin Richard S
Institute : Coorg Institute of Dental Sciences, Virajpet

**Abstract**

Lactucavirosa is a plant which belongs to Asteraceae family. The leaves, sap and seeds of the Lactucavirosa are used to make medicine for whooping cough, asthma, urinary tract problems, cough, trouble sleeping (insomnia), restlessness, excitability in children, painful menstrual periods, muscular or joint pains, poor circulation and as an opium substitute in cough preparations. Though some sesquiterpene lactones from the Asteraceae plant family possess anti-inflammatory and antioxidant properties, it's unknown if Lactucavirosa delivers the same benefits. Therefore, in this paper we are going to evaluate the antioxidant activity and phytochemical analysis of Lactucavirosa.

LASER BIOSTIMULATION - THE NEW EDGE

Name : Disha .S
Guide : Dr Bharath Raj (MDS)
Institution : VSDCH, Bangalore



Low energy laser discovered in 1960's also called Cold lasers are proving to be the revolutionary device of the future .

It is a kind of electromagnetic irradiation source proven to activate photobiostimulation in cells .These lasers do not produce thermal effects on tissues and induce photoreactions in cells through photostimulation.

Numerous studies have proven to reduce patient pain with therapeutic effects.

Lasers are being used to detect and treat cavities, to promote Biostimulation and remove bacteria making their applications numerous.

Due to their biocompatibility and superior applications, they are slowly emerging as the future of dentistry.

COVID19 AND ORAL HEALTH

Names : Showryavardhan.MR and Sanjan.KP
Guide : Dr. Radhika
Institute : Coorg Institute of Dental Sciences, Virajpet



Populations disproportionately affected by coronavirus disease 2019 (COVID-19) are also at higher risk for oral diseases and experience oral health and oral health care disparities at higher rates. COVID-19 has led to closure and reduced hours of dental practices except for emergency and urgent services, limiting routine care and prevention. Dental care includes aerosol generating procedures that can increase viral transmission. The pandemic offers an opportunity for the dental profession to shift more toward nonaerosolizing, prevention centric approaches to care and away from surgical interventions. Regulatory barrier changes to oral health care access during the pandemic could have a favorable impact if sustained into the future.

IMPACT OF VIRUSES ON ORAL CAVITY

Name : Malavika Manu
Institution : V.S Dental College



In Latin virus means venom or poison. Viruses are ultramicroscopic, metabolically inert, infectious organisms. The oral cavity is impacted by numerous viral infections. The oral manifestations are often ulcerations or blistering of the oral tissue. Clinical diagnosis of the manifestations is quite important as they are confusing due to similarity. The manifestations can either be localised or systemic. One of the fascinating issue about virus is its ability to change rapidly and its adaptation to raw environment. It exhibits 'tropism' towards epithelium and salivary glands. The clinical features, mechanisms and management of oral manifestation of viral infections are integrated into the article to enable general dentists critical analysis and a multidisciplinary approach for the same.

LIGAPLANTS: A REVOLUTIONARY CONCEPT IN IMPLANT DENTISTRY

Name : Anam H N
Guide : Dr. Bharath Raj
Institution : Vokkaligara Sangha Dental College & Hospital, Bangalore



Replacement of the missing tooth with an implant has gained popularity among patients. Currently the development of a periodontal ligament attachment around dental implants has become an important therapeutic tool to replace lost teeth. Thus ligaplasts are an available option to improve the biological performance and to prolong the life of prosthesis. Ligaplasts are new treatment modality. Currently osseointegrated implants are agreed to be most acceptable implants. As they have high longterm clinical survival rate. Ligaplasts act as shock absorber and will give the tooth some movement in the socket. It mimics the natural insertion of natural tooth roots in the alveolar process. The process of use of ligaplast will revolutionize the implant dentistry and will be more acceptable to the patient.

LUMINEERS: A BREAKTHROUGH IN ESTHETIC DENTISTRY!

Name : Sanskriti Singh
Guide : Dr. Bharath Raj
Institution : V S Dental College & Hospital



A smile reflects a person's inner self. A sparkling smile in harmony with the lips and face crowns the beauty of that person's character. As each smile is unique to that person, a beautiful smile should be one that is so suitable to the face and character of that particular patient that it appears to be perfectly natural. We all know that public these days is all about wanting the perfect smile. Thus, the dental profession is faced with specific esthetic demands and a rapid evolution of new techniques to accomplish this. The use of veneers is one such restorative alternative that has evolved over the decades and become dentistry's most popular restoration.

But as compared to veneers, these days we have a thing called lumineers which has its own pros. Lumineers are a lot thinner and many patients find they feel and look more natural with it.

So, this presentation aims towards enlightening about the minimally invasive or non invasive mode of smile design using lumineers.

INTER PROFESSIONAL EDUCATION- ESSENTIAL PARADIGM SHIFT?

Name : Manjusha Ulahs Madkaiker
Institution : Yenepoya Dental College, Mangaluru



Aim

To build a strong interptofesioanl relationship.

What is IPE?

The World Health Organization defines it as “multiple health workers from different professional backgrounds working together with patients, families, careers (caregivers), and communities to deliver the highest quality of care.”

A collaborative health workforce i.e. a team from different medical professions so as to respond to the increasing demand on healthcare resources. IPE is becoming an essential part in dental education and increasing prominent in health care workers.

According To Caipe

Recognises IPE as occasions when members or students of two or more professional teams with, from and about each other to improve collaboration and quality of care and services.” Factors affecting IPE- knowledge, attitude, value, philosophy.

It should involve a didactic and systemic model of health care.

Benefits

1. Improve patient care and outcomes
2. Reduce medical errors
3. Start treatment faster.
4. Reduce inefficiencies and healthcare costs
5. Improve staff relationships and job satisfaction.

LIFEDT- LIGHT INDUCED FLUORESCENCE EVALUATOR FOR DETECTION OF CARIES

Name : Sagel Rana
Guide : Dr. Bharat Raj
Institute : V S Dental College & Hospital, Bangalore



Caries is one of the most common disease in the humans of all age group, there are many methods of diagnosing caries but one of the most popular one is LIFEDT. A new and innovative therapeutic concept using a light-induced fluorescence evaluator for diagnosis and treatment (LIFEDT) of dental caries based on the imaging and autofluorescence of dental tissues is proposed. So this presentation highlights on this new methods of identification of caries.

FREE PAPERS

CASE REPORT

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THROUGH THE LOOKING GLASS : ENDOSCOPIC ASSISTED MANDIBULAR CONDYLAR FRACTURE

Name : Varshini. S

Guide : Dr.A. Pearlcid Siroraj

Institution : Sri Ramachandra Institute of Higher Education and Research



Condylar process fracture accounts for 14.8% to 32% of all mandibular fractures. The treatment of condylar fractures has evolved from the use of intermaxillary fixation, rigid fixation, and mini plate osteosynthesis to modern technologies like navigation surgery, minimally invasive surgery and use of patient specific implants. Modern reconstructive surgery has focused on the accuracy and reliable restoration of the facial bony framework; however, the soft tissue complications following extra oral surgical approaches persist as a lasting reminder of the original injury.

The most common extraoral approaches to condyle are preauricular and retro-mandibular approaches. Complications following these include facial nerve injury, scar and sialoceles. The prevalence of facial nerve injury after surgical treatment of mandibular condylar process fractures ranges from 1% to 48%.

The use of an endoscope by Endoscopic Assisted Open Reduction and Internal Fixation provides the benefit of fracture reduction and fixation with limited transoral incisions. Endoscopic technique allows fracture treatment with superior visibility in areas of limited exposure. Endoscopic guided fracture reduction and fixation reduces the morbidity of tissues with less invasive procedures and avoids a facial scar.

In this case report and literature review I would like to present our institutional experience with endoscopic management of mandibular condylar fracture and the advantages of endoscopic approach over traditional approach and the difficulties faced in incorporating endoscopic management of facial fractures in everyday practice.

METACHRONOUS MYSTERY

Name : Srikumar K and Raashmi Ramani

Guide : Dr. Deepak.C

Institution : Sri Ramachandra Institute of Higher Education and Research, Chennai



INTRODUCTION

Neurofibroma is an uncommon benign tumor arising from nerve sheath fibroblasts. The intraosseous solitary neurofibroma is rare occurrence of the oral cavity, with the most common site being the mandible. Discomfort, pain, or paresthesia are common clinical manifestations of the intraosseous variant.

AIM:

To present a rare case of metachronous neurovascular lesion in mandible and To study the oral manifestations of Neurofibroma.

CASE REPORT:

A patient originally presented with a history of mild pain and inability to open the mouth for three months. Extraoral examination revealed a mild extra oral swelling. Excisional biopsy was performed under GA. After six months patient reported back with the same complaint in the same location. A tru-cut biopsy was done which showed the same histological presentation of the earlier lesion and based on the aggressive behaviour and the clinical manifestations, a left hemimandiblectomy was done .

CONCLUSION:

This case of metachronous lesion of neurofibroma and vascular angioleiomyoma is a reminder for which keen attention should be paid on the clinical and radiological follow-up of these lesions and one must be aware of the possible recurrences of the Neuro vascular malignant lesions.

BONE BOOMERANG

Name : Nandhini Priyadharshini.K and Cynthia Leslie. C

GUIDE : Dr. C.V. Divyambika

Institution : Sri Ramachandra Institute of Higher Education and Research, Chennai



Atypical presentation of oral diseases pose challenge to clinicians. Over the past, maxillofacial diseases have been reported with diversified presentations, leading to diagnostic difficulties. Eliciting a thorough history, adequate clinical examination, meticulous diagnostic work up can aid in formulating a prompt treatment protocol which can reduce the morbidity associated with the disease.

This paper highlights a case report of one such maxillofacial pathology which had an unusual presentation, successfully managed with a disease free follow-up since one year.

ORAL SUBMUCOUS FIBROSIS-A HITHERTO POST OPERATIVE SEQUELAE

Names : Akshayaa Rajeshwari D and Asifa Munaf

Guide : Dr J. Naveen Kumar

Institute : Sri Ramachandra Institute of Higher Education and Research



Oral submucous fibrosis is a chronic debilitating pre-cancerous condition affecting 0.4% Indian rural population. The main risk factor is areca nut chewing. It has a malignant transformation rate as high as 7.65%, thereby constant efforts have been made to develop effective management. Though several medical modalities are available, surgical treatment becomes inevitable. We report a case of a 35 year old male who after being treated surgically with bilateral fibrotomy, extraction of the third molars, bilateral coronoidectomy and replacement of the defect with a nasolabial flap met with a rare post operative sequele.

MIST - MYSTERIS IN SURGICAL STATERGY.

Name : V Maria Sharon and L Preethi Valentina

Institution : Sri Ramachandra Institute of Higher Education and Research



Abstract: For most of us, an illness or ache of sufficient seriousness means a trip to the doctor, a diagnosis, an eventual treatment and relief. But there are times and cases in which the narrative of disease strays off the expected path, symptoms that stump even the best physicians and the diagnosis is elusive leaving it to be a medical mystery.

A middle-aged woman from Bihar reported to department of Oral and Maxillofacial Surgery, SRIHER presenting swelling in the left cheek region with restricted mouth opening. Previous surgical history revealed removal of hydatid liver cyst and got treated elsewhere.

Following a course of antibiotics, the case was addressed by extracting third molars corresponding to the spaces.

When the patient reported back after 4 days she presented with increased respiratory rate and was provisionally diagnosed with septic shock. Immediate medical management was provided in spite of which her conditioned worsened in the next 5 days. Subsequently CPR was performed and ACLS protocol was followed regardless of which she was declared dead.

Complete history, evaluation of patient, course of hospital stay and further series of complication during the treatment will be elucidated in the paper.

EXFOLIATIVE CYTOLOGY – AN ESSENTIAL DIAGNOSTIC AID IN ORAL HERPES ZOSTER

Name : Franklin Manova B

Guide : Dr J Dinakar

Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore



Herpes zoster occurs when the suppressed varicella zoster virus in the neuronal cell bodies is reactivated after resolution of initial occurrence of chicken pox. Immunosuppression, psychological stress, and Infections like HIV are said to reactivate the varicella zoster virus. Increasing age is a crucial risk factor for herpes zoster. Herpes zoster manifests with painful clusters of vesicles which does not cross the midline and resolves within 2 to 4 weeks with scarring and pigmentation. Post herpetic Neuralgia is a potential complication of herpes zoster. Polymerase chain reaction (PCR) is the most commonly used confirmatory test for herpes zoster. However, it is expensive and time consuming. Exfoliative cytology, in which the desquamated or shed cells from the mucous membrane are studied under the microscope is an economic and faster diagnostic aid used for unearthing various oral lesions and conditions. With the advent of recent advances, Exfoliative cytology is emerging as an excellent adjunct for the conventional diagnostic aids. In this case report we describe the successful diagnosis of Herpes zoster In a 62 year old male patient using Exfoliative cytology.

VIRTUAL SURGICAL PLANNING IN POST TRAUMATIC ORBITAL COMPLEX FRACTURE: A CASE REPORT

Name : Smrithi.N.S
Guide : Dr. M.S Senthil Kumar
Institution : Sri Ramakrishna Dental College and Hospital, Coimbatore.



The advent of technology has shifted the paradigm in planning for complex craniofacial operations and reconstructions. Orbital complex reconstruction is done by pre-operative virtual planning considering the difficulty in predicting the anatomical variances three dimensionally. This case report describes the management of a patient who visited our outpatient clinic for correction of enophthalmos and persistent binocular diplopia in upward gaze, three months post trauma.

This case report highlights the precision and accuracy obtained with virtual planning where the medical data was uploaded to the cloud based algorithm software server to digitally plan and design the surgical models for printing which was rechecked and the stereolithic models that replicate the deformities were fabricated. The unaffected orbit of the contralateral side was digitally rendered from a 3D CT reconstruction and mirrored on the deformed orbit to highlight the defect and using CAD-CAM a precise stereolithic anatomic model was constructed on which the mock surgery was performed to plan the surgical flow and predict the prognosis of the surgery. Through this virtual planning we know the precise amount of movements to be done with the segments in all three planes. The surgery was initiated with an upper blepharoplasty and an intraoral incision to access the segments and fixation was done in position.

There was a marked improvement in the function. This concept of using 3D virtual treatment planning, stereolithographic models and CAD-CAM makes this herculean correction of late post-traumatic orbital complex deformities effortless.

PEIZOCISION-A QUICK FIX FOR CROOKED TEETH

Name : Mariya M Jos
Guide : Dr. Gautham
Institute : Coorg Institute of Dental Sciences, Virajpet



The duration of treatment has become a primary concern for the orthodontists and the patients, with the emerging concept of accelerated orthodontics. The demand for speedy, effective and accurate orthodontic treatment systems has increased calling for shorter treatment period. The search for mechanical orthodontic processes that cause faster and safer tooth movement has been underway with a number of studies focusing on different components like brackets, arch-wires, orthodontic forces, tissue & cellular factors etc.

The emergence of piezocision has influenced the efficiency, duration, cost and convenience of accelerated orthodontics dramatically. This technique combines micro incisions limited to the buccal gingiva that allows the use of a piezoelectric knife to give osseous cuts to the buccal cortex and initiate the RAP without involving palatal or lingual cortex. The procedure allows for rapid tooth movement without the downside of an extensive and traumatic surgical approach while maintaining the clinical benefit of a bone or soft-tissue grafting concomitant with a tunnel approach.

Piezocision is an orthodontically guided surgical procedure. It has evolved from being a minimally invasive surgical alternative to conventional corticotomy to a more sophisticated philosophy where the orthodontist is given the tools to control the anchorage value of teeth by selectively altering the bone density surrounding them. The active orthodontic treatment period in patients with piezocision is 2 to 3 times more rapid compared with patients without piezocision.

Through this paper I will be presenting a case in which piezocision was used for accelerated orthodontic treatment. This new method definitely reduces the treatment time and is a viable method to be incorporated as a routine orthodontic protocol in clinical practice.

MULTIDISCIPLINARY MANAGEMENT OF ORAL CARCINOMA

Name : Spurthi and Rishitha
Guide : Dr. Adarsh
Institution : Government Dental College and Research Institute, Ballari



Oral carcinoma is one of the most prevalent cancer, ranks in the top 3 of cancers in India and is one of the major cause of death. The risk factors are tobacco and alcohol. When both are consumed together, risk increases by 15 times. It may affect any anatomical site in the mouth but most commonly the tongue and floor of mouth. This report is intended as an evaluation for the management of squamous cell carcinoma under multidisciplinary approach between oral surgery, prosthodontics and other departments, as well as provision of further post operative treatment. The oral cancer and its therapy may be associated with morbidity pre operatively, operatively and also through out life

PRE-SURGICAL NASOALVEOLAR MOLDING USING MODIFIED PSIO-J HOOK APPLIANCE

Name : Niharika T P and Shilu Shabu
GUIDE : Dr. Vikram Susil
Institution : Coorg Institute of Dental Sciences, Virajpet



ABSTRACT

Introduction: Management of cleft patients is quite challenging and controversial. Advances in reconstructive surgery have significantly improved the quality of repair for cleft of the lip, alveolus and palate. This case report describes a new approach of presurgicalnasoalveolarmolding (PNAM) therapy in a 5 day old infant using PSIO-J hook appliance.

Methods: Lip taping was started on the initial visit using 3M Steri- Strip. Initial impressions were made to fabricate the PSIO appliance. On second visit appliance was delivered to approximate the cleft alveolus. Once the cleft gap has been reduced to approximately 5 mm a J- hook modification was given to avoid bulkiness and thereby enhancing retention. Conventional nasal stent exerts a reciprocal intraoral molding force against the alveolar segments hence this drawback was eliminated by using J-hook modification appliance. Following surgical repair of lip, the lip was taped for several weeks and the use of PSIO-J hook appliance was discontinued.

Results: There was significant improvement in nasal tip projection, columella size on cleft side and position of lower lateral cartilages as well as approximation of the lip segments. Additionally the alveolar defect reduced from 14mm to 3mm from pre NAM to post NAM.

Conclusion: The pre-surgical nasoalveolarmolding assisted primary reconstruction using PSIO-J hook appliance results is an overall improvement in the esthetics of the nasolabial complex in cleft conditions while minimizing the extent of surgery and the overall number of surgical procedures.

FREE PAPERS

TECHNICAL NOTE

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AUGMENTED REALITY

Name : Anna Lorraine and Rajani
Guide : Dr.Shashidara .R.
Institution : Coorg Institute of Dental Sciences, Virajpet



WHAT IS AR?

Augmented reality (AR) is one of the biggest technology trends right now, and it's only going to get bigger as AR ready smart phones and other devices become more accessible around the world. AR let us see the real-life environment right in front of us—trees swaying in the park, dogs chasing balls, kids playing soccer - with a digital augmentation overlaid on it. For example, a pterodactyl might be seen landing in the trees, the dogs could be mingling with their cartoon counterparts, and the kids could be seen kicking past an alien spacecraft on their way to score a goal.

AUGMENTED REALITY IN DENTISTRY

- 1) In dental practice, the technology is more prevalent in reconstructive and aesthetic procedures in order to help patients know what they look like after the treatment.
- 2) To overlay virtual depictions of the improved set of teeth prior to the procedure.
- 3) Advantageous to patients and dentists to configure the features of their teeth, such as teeth height and spacing according to their liking even before the surgery.
- 4) It allows the surgeon to visualize, in real time, patient parameters, relevant x-rays, 3D reconstruction or at a navigation system screen
- 5) Surgeons at different places can diagnose the patient at the same time.

E-POSTERS

ORIGINAL RESEARCH

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WHICH REFERENCE LINE CAN BEST EVALUATE THE ATTRACTIVE LIP POSITION?**Name : Janson Ng****Institution : The University of Hong Kong, Hong Kong****Abstract:**

Introduction: Many reference lines are used by orthodontists and maxillofacial surgeons to assess anteroposterior lip position. However, there has been little research on their performance. The aim of this study is to evaluate the sensitivity and specificity for the best performance lines.

Materials and methods: Among 6 commonly used reference lines, the Esthetic line (E-line) and Steiner line (S-line) have been identified as the most consistent indicators for assessing facial profile in the first step of our study. Photographs of a sample of 86 attractive movie-stars (43 females, 43 males) and 86 unattractive patients (43 females, 43 males) were then assessed using the S-line and E-line. The positive predictive value, negative predictive value, sensitivity, and specificity were calculated for both lines.

Results: The S-line had a sensitivity of 75% and 65%, specificity of 86% and 77% for females and males respectively. The E-line had a sensitivity of 60% and 63%, specificity of 86% and 84% for females and males respectively.

Conclusions: This study supports the use of the S-line and E-line in assessing the attractiveness of lip position. In an attractive face, both lips should be behind the E-line. For an attractive female face, both lips should be on or slightly ahead of the S-line and for an attractive male face both lips should be on or slightly behind the S-line. The distances to the S-line have smaller absolute values, which is more convenient for clinicians to quickly assess lip position.

PREVENTING ENAMEL CARIES USING CARBON DIOXIDE LASER AND SILVER DIAMINE FLUORIDE

Name : Kenneth Luk

University : The University of Hong Kong, Hong Kong

Abstract

Objectives: This study was intended to investigate the caries prevention potential of carbon dioxide (CO₂) laser ($\lambda = 10,600$ nm) irradiation followed by application of silver diamine fluoride (SDF) to enamel.

Materials and methods: Human enamel specimens were randomly allocated to four groups (n = 10 per group). Group 1 specimens were treated with SDF; Group 2 specimens were treated with a CO₂ laser; Group 3 specimens were irradiated with a CO₂ laser then treated with SDF, and Group 4 specimens received no treatment. All specimens were subjected to pH cycling for cariogenic challenge. Lesion depth, micro-hardness, surface morphology and elemental analysis were assessed.

Results: The lesion depths for Groups 1 to 4 were 33 ± 16 μm , 80 ± 9 μm , 18 ± 15 μm and 102 ± 9 μm , respectively ($p < 0.001$; Group 3 < Group 1 < Group 2 < Group 4). Knoop hardness values for Groups 1 to 4 were 61 ± 19 , 68 ± 20 , 78 ± 27 and 36 ± 8 , respectively ($p = 0.002$; Group 4 < Groups 1, 2 and 3). The enamel in Group-4 but not in the other groups showed a roughened surface resembling an acid-etched pattern. Calcium-to-phosphorus molar ratios of Groups 1 to 4 were 1.68 ± 0.09 , 1.61 ± 0.06 , 1.69 ± 0.10 and 1.49 ± 0.10 , respectively ($p < 0.001$; Group 4 < Groups 1, 2 and 3).

Conclusions: Using the CO₂ laser or SDF separately enhanced the resistance of enamel to cariogenic challenge. Moreover, there was an additional effect of the combined use of the CO₂ laser and SDF for preventing enamel demineralization.

CLINICAL USE OF LASERS TO EVALUATE THE EFFICACY OF ARRESTING CARIES WITH SILVER DIAMINE FLUORIDE

Name : Bui Huu Tuan and Vo Truong Nhu Ngoc

Institution : School of odonto-stomatology, Hanoi Medical University, Vietnam



Abstract

This clinical trial used lasers to evaluate the efficacy of silver diamin fluoride (SDF) in arresting cavitated dentin caries in primary teeth. Children aged 3 to 5 years old who had at least 1 active cavitated caries lesion were enrolled from a SOS Children's Village in Vietnam. A total of 32 children with 126 decayed tooth surfaces received 38% SDF application, applied only once. Diagnodent pen 2190 - Kavo device was used to measure the laser index at the decayed tooth surfaces at the times: before the intervention, 5 minutes, 24 hours and 1 week after the intervention, the mean values were recorded as 88.2, 13.8, 18.7 and 19.6, respectively ($P < 0.001$). In general, before SDF was applied, all decayed tooth surfaces had soft dentin and laser index > 30 . After intervention, a caries lesion was diagnosed as arrested if its surface was smooth and hard on probing or the measured laser index ≤ 20 (According to manufacturer). Based on laser, the caries arrest rates were 80.2%, 73.2% and 70.6% respectively for the post-intervention periods, while the assessment by probes for caries arrest rates were 82.5%, 80.2% and 77.8%, respectively ($p < 0.05$). The difference between the two methods is due to some caries lesions that are smooth and hard on probing but still have laser index > 20 .

EVALUATING THE EFFICACY FOR SUPPORTING DETECTION AND DIAGNOSIS OF GINGIVITIS BY USING DEEP LEARNING ALGORITHM

Name : Nguyen Quoc Hoan

Institution : School of Odonto-Stomatology, Hanoi Medical University



Abstract:

Background: Gingivitis is a very common disease. An accurate and effective method is needed to aid in the diagnosis of gingivitis. This study aims to evaluate a deep learning algorithm for the diagnosis of gingivitis.

Methods: 808 Vietnamese patients aged between 12 and 16 selected in Thanh Hoa Province (Vietnam) with 2424 images (3 images per person) were recruited into 3 phases in a cross-sectional study. First, a machine learning software called DentaVN, developed basing on a convolutional neural network (CNN), suggested a diagnosis of gingivitis through images of the lesion of the gums ($N = 508$). These image data (training set) are considered to help train the model. Next, validation set with 450 images ($N = 150$) processed by DentaVN will show the result Yes or No gingivitis; this result is compared with dentist's diagnosis to evaluate software's sensitivity, specificity and accuracy. Finally, we evaluated the diagnostic results of DentaVN software on the 150 patients (testing set) and a dental advice will be given to each patient.

Results: The artificial intelligence showed a high performance of 84.4% accuracy and 73.3%/84.5% sensitivity/specificity. Significantly, our software has a dental advice with 100% showing rate for dataset at phase 3, 95% of which is correct with the actual state.

Conclusions: Our software can provide a reliable supporting tool not only for the diagnosis of gingivitis but also for the giving of dental advice. Further studies are needed to enrich training data, thereby increasing the accuracy and determining the feasibility of applying artificial intelligence in dental clinics.

CAN COMPLEXIONS CAUSE COMPLEXITIES?

Name : Ms Pratheeksha N Kalappa
Guide : Dr Archana V Krishnan, Dr Shashidara R
Institution : Coorg Institute of Dental Sciences, Virajpet



ABSTRACT:

Introduction:

The analysis of bite marks is a challenging and convoluted part of forensic odontology. Various interrelated factors such as location and skin elasticity complicate bite mark analysis. The relationship between bite mark analysis and biochemical properties of the skin has been well documented but there is a need to consider the influence of the variety of skin tones as a factor.

Materials and Methods:

The sample consisted of students of a dental institution who were grouped using a standardized skin shade chart (n=30). Institutional review board clearance was acquired and all aspects of the study were explained in detail to all the participants. They were made to create a self-inflicted bite mark on the skin of their forearm. The bite mark was photographed at 0 and 1 hr. The acquired marks were traced using digital software and the ease of the same was analyzed. The photographs taken at 1 hour were compared with the 0 hr photograph for loss of features. The results showed bite marks were retained better on light skin individuals.

Discussion:

If we consider all the factors that could affect bite mark analysis there will be a lower chance of mismatches and wrongful convictions. Being better informed will increase the credibility of bite marks as evidence.

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SALIVARY GLUCOSE MONITORING- A NON-INVASIVE STEP TOWARDS GLUCOSE MONITORING IN DIABETIC INDIVIDUALS.

Name : Keerthana Ravi and Keerthi Laxmi
Institution : Sri Ramachandra Dental College



According to WHO, India is considered to be the diabetic capital of the world. Bi-directional relationships between Diabetes and Periodontitis have been unambiguously confirmed and have been found to influence the progression of each other. Periodontal therapy helps in improvement of glycemic control of the diabetic patients and thereby alleviating its complications. For this a consistent monitoring of glucose becomes indispensable to ensure a favorable outcome. Contemporary advancements are evolving with saliva as a diagnostic tool in monitoring the Glycemic state.

Salivary glucose monitoring devices include -Wearable Cellulose Acetate coated mouth guard biosensor that facilitates constant glucose monitoring and helps accessing Time in Range. Correct diagnosis is three fourth the remedy. This review poster provides knowledge on advancing devices in salivary glucose monitoring which are noninvasive, rapid, self assisting biosensors in the light of current literature evidence. These advancements ensure the clinician an insight to monitor and treat the conditions better.

SALIVAGNOSIS: THE UNKEMPT POTION

Name : Haridusvy J
Gudie : Dr. Ram Sabarish
Institution : Sri Ramachandra Faculty of Dental Sciences,
Sri Ramachandra Institute of Higher Education and Research



Early diagnosis and prompt measures are indispensable to control the global SARS-CoV-2 pandemic. In recent times, many advancements have been made in the molecular testing procedures and more so on the Point of Care testing (POC). However, early detection of SARS-CoV-2 in saliva samples are currently being explored, as one of the primary targets for this virus is ACE2 receptors in epithelial cells of the salivary glands. Nasopharyngeal Swab can potentially increase the clinician's risk of infection, requires specialized health care equipment & laboratories for its management, and is highly time-consuming. In this regard, salivary diagnostics have gained a lot of attention worldwide as a suitable alternative to nasopharyngeal swabs. POC testing is sensitive as well as specific and yields immediate results ruling out asymptomatic carriers. Moreover, the risk of transmission to health care personnel can be minimized to a greater extent following self-saliva sample collection methods. Thus, facilitating a safer, more comfortable, and yet accurate diagnostic modality.

This E-Poster emphasis on three of such salivary point of care testing devices in the light of current literature evidence.

“DENTAL CARIES VACCINE – A THUNDERBOLT TRANSFORMATION”

Name : Mohit Bagmar. R
Guide : Dr M S Muthu, Latha Nirmal, Dr Priya
Institution : Sri Ramachandra Faculty of Dental Sciences

**ABSTRACT**

Dental caries is a multifactorial microbial infectious disease characterised by demineralisation of the inorganic & destruction of the organic substance of the tooth. It is caused by *Streptococcus mutans*, *Streptococcus sobrinus* & various other micro organism. The virulence determinant of *Streptococcus mutans* such as adhesins, glucosyltransferase & glucan binding protein have been known to elicit antigenic-specific immune response

Vaccines are immuno-biological substance that is used as a cure and treatment for various diseases. Preclinical application of modern methods of mucosal vaccine design and delivery has routinely resulted in protection from dental caries caused by *S. mutans* infection, using antigens involved in the sucrose-independent or sucrose-dependent mechanisms of infection by these cariogenic streptococci. Passive administration of antibody in the form of mouth rinse containing bovine milk or egg yolk that declined the *S. mutans* count in saliva and other immunisation techniques containing various functional epitopes of *S. mutans* virulence antigens has also provided a degree of protection in preclinical studies and small-scale human investigations. Active immunisation has proved to be more effective and long lasting due to the involvement of host response. The immunization against caries may help greatly in improving the oral health in the developing countries.

In conclusion, considerable caries reduction could be attained if colonisation of *S. mutans* could be prevented / reduced at the time of eruption of both deciduous and permanent teeth. Thus a successful vaccination directed against *S. mutans* would be a preventive measure and an adjunct to caries treatment.

AMELOGLYPHICS – YOURS TOOTHFULLY

Name : Saiprithvi Ramasamy and Sejal.M
Guide : Dr.Vandana.S
Institution : Sri Ramachandra Institute of Higher Education and Research



Forensic science also known as criminalistics is the application of science to criminal and civil laws during investigation as governed by legal standards of admissible evidence and criminal procedure. Forensic odontology is a major branch of forensic science sourcing the dental tissues as they are the strongest tissue in the human body and therefore their characteristics remain unchanged even after long periods of stay in extreme environment. Human identification by dental records is achieved by cheiloscopy, palatal rugae patterns, bite marks and DNA analysis. The study of the enamel rod patterns is done by amelography. The ameloblasts during the enamel formation depicts as series of patterns forming the tooth prints. Since these prints are unique among individuals this can be used as an important tool in forensics for identification. Therefore this poster was designed to point out the action potential of the enamel rod prints for individual identification.

EVOLUTION TOWARDS SIMPLIFIED FUTURE - SHORTENED DENTAL ARCH

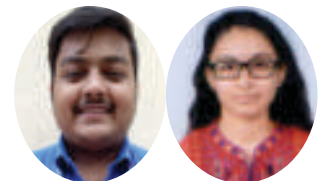
Name : Aastha Shukla and Subhashita Sharma
Institution : Sri Ramachandra Faculty of Dental Sciences



Shortened dental arch is defined as a specific type of dentition with an intact anterior region and a reduction in occluding pairs of posterior teeth. In the evolution of the human race we can observe a drastic change in oral functions. The size of our jaw and teeth have slowly been shrinking over millions of years. Modern humans normally end up with 32 teeth by the time they are fully adult, including four wisdom teeth that often have to be removed because there just isn't room for them. Homo sapien dental count has reduced from 36 to 32 and evidence of series of readjustment going on in our dentition. The reason to all this is the constriction of jaws and reduction in the dental arch. This poster reviews the evolution in shortened dental arch and its problem-solving approach in prosthetic dentistry.

PERIODONTAL DISEASE AND FEMALE REPRODUCTIVE HEALTH- UNRAVELLING SYSTEM BIOLOGY

Name : Saptarshi Bandyopadhyay and Sharmistha Chakraborty
Guide : Dr Supraja A
Institution : Sri Ramachandra Dental College



Periodontal disease is one of the most commonly occurring oral diseases worldwide. Inflammation of the periodontal structures not only jeopardises the longevity of the tooth and maintenance of a functional dentition but also contributes to increase in overall systemic burden. 'Focal sepsis theory' which was once ruled out due to lack of evidence in 1950, came back strongly a decade back as PERIODONTAL MEDICINE AND SYSTEMS BIOLOGY. According to World workshop in Periodontics, Periodontal medicine refers to the study of connection between periodontitis and other systemic pathologies. A huge body of work has been done to study the link between periodontal disease and other systemic diseases such as diabetes mellitus, atherosclerosis, rheumatoid arthritis etc. Similarly the link between Periodontal disease and female reproductive health has been quite studied with more insights identifying various pathogenesis pathways. The fact that gingiva harbors receptors for female sex hormones makes it more logical to understand the link. Gingival and periodontal inflammation is commonly seen in women during puberty, pregnancy and post menopause. Likewise, periodontal inflammation is also known to increase the occurrence of adverse pregnancy outcomes by contributing to heightened systemic inflammatory burden. Recently, the link between periodontal disease and polycystic ovarian syndrome has also been researched and the data would unravel undimensions of periodontal medicine. Thus this review would give a better understanding between periodontal disease and female reproductive health and the underlying pathogenic link which could help in better therapeutic interventions that can improve both oral and systemic health.

DENTISTRY IN EXTRATERRESTRIAL ENVIRONMENT

Name : Apoorva Nilay Dhopte
Institution : VSPM Dental College and Research Centre, Nagpur



ABSTRACT

With the competition in space heating up due to launch of Mars Mission by India and Chinas' plan to land a rover on the moon next year, Americans are revisiting the idea of launching a manned mission to Mars.

According to European Space Agency officials, astronauts need good oral health during a flight into space. This is because the acceleration forces and vibrations can be very strong and this is sufficient to make hidden cavities and inflamed pulp very painful. The vibrations are strong enough to dislodge crowns, bridges and fillings of teeth.

In shorter missions, individual waits for their return to Earth, but in long term or exploration missions, dental emergencies can be a matter of concern.

NASA has focussed on dental complications regarding astronauts and stated that an astronaut needs to have excellent dental health before space missions and has increased the need of awareness regarding special dental care for astronauts.

This poster reviews the:

1. Possible effects of space environments on the oral cavity
2. Dental emergencies during space missions
3. And how to manage them.

TODDLERS TEDIE

Name : R Swerna and Swetha M
Guide : Dr. J Priya, Dr. K C Vignesh, Dr. Latha Nirmal
Institution : Sri Ramachandra Faculty of Dental Sciences



One of the major challenges faced by Pediatric Dentist is to administer local anaesthesia (LA) to children even though it ensures pain relief. In case of failure in effective LA administration, the quality of the dental procedure and the behaviour of the child is compromised. The traditional practices of the parents and cultural influences cause an inherent/ subjective fear in children leading to 'needle phobia'. In order to successfully administer LA to a child patient the TeDiE technique is used. This technique is a combination of multiple behaviour management techniques. TeDiE technique integrates Tell-Show-Do (TSD), Distraction and Euphemisms effectively. The patient neither sees the needle nor hears the word 'injection' nor does not feel any pain. Repeated verbal reinforcements will distract the child and helps in ease of administration of LA without any pain. Explaining and demonstrating the procedure to the children prior to the treatment is important. This e- poster aids in better understanding of the technique and create awareness about the same to the specialists, general dentists and hygienist dealing with children.

AUTOTRANSPLANTATION OF TOOTH

Name : Prachi Tipare
Institution : MGM Dental College, Navi Mumbai



Rapidly evolving implantation and alveolar ridge reconstruction techniques created a new area in modern dentistry where tooth loss is no longer a problem. Endless variations of implant's length, diameter, surface, and design along with autogenous, alogenous, aloplastic, or xenogenous bone substitutes made it possible to recreate physiological occlusion, esthetic and masticatory function. However, none of nowadays technologies in implant dentistry have the potential to adapt to a growth and development changes of a child's jaw. Therefore, patient's young age is a restriction for implantation and a particular challenge for a dentist willing to restore missing tooth. Thus, tooth auto-transplantation can be a good choice for treatment. The objective of this review is to underline the biologic principles required for successful auto-transplantation of teeth. Limits, indications, technique, and prognosis will be analyzed.

SEEK THE HIDDEN CARIES

Name : Sangheetha T and Prarthana R
Guide : Dr. Latha Nirmal, Dr. K C Vignesh
Institution : Sri Ramachandra Faculty of Dental Sciences

Dental caries is multifactorial microbial infectious disease characterized by demineralization of the inorganic and destruction of the organic substance of the tooth. HIDDEN caries is a term used to describe occlusal caries, seen beneath the dentino enamel junction, where the occlusal enamel appears healthy or minimally demineralized. These lesions gave a silent progression, that is often missed on a visual examination, but is large enough to be detected radiographically. Non-invasive methods like bitewing radiographs and Diagnodent are useful in detecting these lesions at an earlier stage. Dental professionals should be aware about this type of caries that is playing hide and seek during clinical examination. Diagnodent are useful in detecting hidden causes and uses a laser light instrument emitting a 250nm wavelength that stimulates the flourescence that can be quantified.

In this poster we will discuss about HIDDEN caries, diagnostic methods and management.

NEW DIMENSION OF DENTAL THERAPY - DIAGNO – DENT

Name : Shivani S & Sneha R

Guide : Dr. Soumya

Institution : Sri Ramachandra Institute of Higher Education and Research



Dental caries is one of the most important problems in world health care. These can be detected visually or through X-ray. To make this easier, that is to detect caries early and caries which are not visible even through x-rays, DIAGNO dent (laser fluorescence) is introduced for the detection of occlusal carries. The principle of DIAGNO dent is that when diode laser with 655nm wavelength is irradiated on dental surface, it is absorbed by metabolites of intra oral bacteria and these metabolites emit red fluorescence. This reflected fluorescence is indicated in number between 0 and 99 on the screen of device. Therefore, greater number indicates greater decay area.

Values between 10-15 require no active care or treatment: Values between 15-30 require preventative or operative care, depending on the patient's caries risk: Values of 30+ require operative and preventative care. But there is no relation between the number which has been provided by DIAGNO dent and depth of decay. This has high sensitivity and low specificity. Because of high sensitivity, this device is used in combination with other techniques. DIAGNO dent can be even used to detect caries under restoration also, this is possible by the emitted radiation from laser which has potential to cross composite and identify caries under composite restoration. It is a simple device to use in children because it doesn't need lot of cooperation and it is not harmful for children even after repetitive use.

GRAPHENE NANO REINFORCED BIOPOLYMER

Name : A. Abhi Venkatshree and Bhaavana I
Guide : Dr. S. Madhan Kumar
Institution : Sri Ramachandra Institute of Higher Education and Research



ABSTRACT

The objective of the poster is to emphasize the use of graphene in dentistry. Due to growing demand and expectations of the people. There is in need for more and more advancement in dentistry. Apart from functional, graphene also enhances the aesthetics of prosthesis and restorations. The world of dentistry is approaching graphene based nano materials as a substitute for tissue engineering.

The physical, mechanical, and biochemical properties are much more advanced and altered Than the other materials used. The development of dentistry in the upcoming generations rely on the use of polymer like graphene.

They can be combined with several bio materials used in regenerative and reconstructive Dentistry and medicine. Graphene adds to the additional stability, depicting the natural teeth in appearance. The incorporation of go in PMMA resin seems to be a suitable option for prosthetic rehabilitation. The main aim of this poster is to depict the use of graphene in dentistry over other compounds and materials.

TMJ AND FUNCTIONAL SHIFTS

Name : Subiksha J and R Kalyaneshwari Roopini
Guide : Dr. Annapurna Kannan
Institution : Sri Ramachandra Faculty of Dental Sciences,
Sri Ramachandra Institute of Higher Education and Research (DU)



ABSTRACT:

The uniqueness of the temporomandibular joint and its aberrations pose a challenge to the clinicians both in terms of its diagnosis and treatment planning. The question of debate is the interaction between the occlusion and its influence on the temporomandibular joint. A good understanding is required in diagnosing the reason behind the occlusal dysfunction and its resulting condylar displacement which is commonly manifested as a shift in the position of the mandible. In some cases, however, the reason is not apparent and this makes the functional examination of the TMJ crucial. In such patients, the clinician's role is paramount in identifying the silent yet significant indicators of TMJ dysfunction in the absence of any outward pathological conditions. The management through orthodontic treatment aims at restoring the harmony between the condylar position and occlusion, thus helping in re-establishing the lost equilibrium of the joint and its associated muscles. This poster puts forth a literature review of the relationship between the occlusion and the TMJ abnormalities, its diagnosis, interventions and the reasoning behind its occurrences.

CRYOTHERAPY: A PARADIGM SHIFT IN ENDODONTICS!!!

Name : Mahesh V and S.P. Ajen Khumar
Guide : Dr. Manigandan. K, Dr. Arathi. G
Institution : Sri Ramachandra Faculty of Dental Sciences
Sri Ramachandra Institute of Higher Education and Research

**ABSTRACT:**

Cryotherapy refers to decreasing the tissue temperature, which reduces the inflammation and promotes therapeutic healing. Vascular, neurologic and the tissue metabolism are the three primary physiological tissue effects of cryotherapy. Cryotherapy induces vasoconstriction which slows down the process of cellular metabolism. This limits the biochemical reaction which minimises the degree of tissue damage thereby reducing the pain and aedema by blocking the nerve conduction. In recent times, role of cryotherapy in the field of endodontics is increasing. It has been reported to reduce the post-operative pain following the root canal procedure, endodontic surgeries and also used in achieving haemostasis in vital pulp therapy procedures. Subjecting the rotary endodontic instruments to cryotherapy also resulted in enhanced cyclic fatigue resistance. It can be seen that cryotherapy is a cost effective and a promising method that can be incorporated into the field of endodontics in a wide array of treatments. The purpose of our review poster is to discuss and highlight the significant role of cryotherapy in endodontics.

NEW ERA IN PROSTHODONTICS – NANOTECHNOLOGY

Name : Moniesha Kumar
Guide : Dr. Parthasarathy
Institution : Sri Ramachandra Faculty of Dental Sciences

**ABSTRACT:**

Science is presently undergoing a great evolution, taking humanity to new era: THE ERA OF NANOTECHNOLOGY. In recent years, lots of researchers have been launched on nanomaterials for biomedical applications. It has been shown that the performances of many biomaterials used in prosthodontics have been significantly enhanced. Their scales were reduced by nanotechnology, from micron- size into Nano- size. Nanotechnology is the field of science and technology pertaining to the creation and use of materials or devices at nanometer scales. Nanotechnology has numerous applications in field of nanomedicine, nanomaterials, nanorobotics, implantology, and biotechnology. Nanomaterial in dentistry can be metals, ceramics, polymers, implant modification and composite materials that demonstrate important properties when compared with conventional materials. The poster focuses on various application of nanotechnology in the field of dentistry, especially prosthodontics.

ALL IS WELL WITH AVERSION THERAPY

Name : Chemmalar N. C and Raga Poovitha R
Guide : Dr.M. Kirthiga, Dr.K.C. Vignesh
Institution : Sri Ramachandra Institute of Higher Education and Research



ABSTRACT:

Aversive conditioning is a safe and effective method of managing lacking cooperative child. Two common methods of aversive conditioning are Hand-Over-Mouth Exercise (HOME), Physical Restraints. Hand-Over-Mouth Exercise is basic behavior modification in aversive conditioning. The purpose of HOME is to gain attention of a child so that communication can be achieved. Physical restraints are the last resort for handling uncooperative or handicapped patients. Physical restraint involves restriction of movement of child's head, hands, feet or body. It is classified into active, passive. This E-poster will highlight about the management of the lacking cooperative child using HOME and Physical restraints.

DIGITALIZATION IN PROSTHODONTICS

Name : S. Hemapriya and V.S. Gopiga
Guide : Dr. Anusha. K.S
Institution : Sri Ramachandra Institute of Higher Education and Research



ABSTRACT

Digitalization is a major breakthrough in dentistry which aims in utilizing the technological advancement for an efficient and faster treatment outcomes. Continuous progress in information technology has made it possible to overcome the limitations and hurdles that existed in clinical and technological workflow. Advancements in dental technology enable patients to receive modern solutions for conventional dental problems. Prosthodontists can incorporate digital technology into their practices to improve their workflow, efficiency and ease of collaboration with laboratories.

The poster focuses on the latest innovations in Prosthodontics which provides a new dawn in digital dentistry such as intra oral imaging or optical impression with the aid of CAD/CAM. Aesthetic treatment is made easier with shade matching and digital smile design software. Capture, display and storage of direct radiographic images is achieved by digital radiography. 3D printing and rapid prototyping has enabled Prosthodontists to fabricate models to be used as template for surgical treatments in implants and also in maxillofacial prosthodontics. Virtual articulators, Virtual reality, Artificial intelligence, augmented reality and modern incorporated learning have made visualization of the final treatment easier for the patient and dentists in prosthodontics.

Digitalization is one of the most important parts of modern dentistry, if it is implemented in clinical dentistry with proper knowledge, will increase the joy of practicing dentistry. Digital applications in prosthodontics combined with dentist's ability will immensely improve dental and oral health care of the patient.

KEYWORDS

Digital dentistry, Artificial intelligence, CAD/CAM Technology.

TIK-TIK-TIK HOUR IN DENTISTRY

Name : V. Charulakshmi
Guide : Dr. K.C. Vignesh, Dr. H. Selvakumar
Institute : Faculty of Dental Sciences, Sri Ramachandra Institute of
Higher Education and Research (Deemed to be University)

ABSTRACT:

Foreign body ingestion is a potentially serious problem that peaks in children aged six months to three years. It causes serious morbidities in less than one percent of all patients, and approximately 1,500 deaths per year are attributed to ingestion of foreign bodies in the United States. The incidence of aspiration or swallowing of foreign bodies of dental origin varies considerably in the literature. The most common objects ingested by children include coins, bones, chicken and fish bones, straightened paperclips, toothpicks, needles and adults, food impaction is very common. Ingestion occurring in adults is most of the times accidental or in psychiatric patients. In dental operatory, the ingested foreign body may include teeth, restorative materials, instruments, rubber dam clamps, gauze packs, and many more. In this e-poster, we will be discussing about the accidental ingestion of dental bur, endodontic file and its management.

“OVERSHADOWING THE NON-ESTHETIC ZONE.”.

Name : Keerthi Chowdary, P. Saatvika Sre
Guide : Dr. Fathima Banu
Institution : Sri Ramachandra Institute of Higher Education and Research

Abstract:

Edentulism has been demonstrated to have negative psychological and social effects on individuals that adversely impact their facial and oral esthetics, masticatory function and speech abilities. All these when combined together significantly reduces the patient's quality of life. The immediate placement of implants is known to be a challenging surgical procedure that requires proper treatment planning and surgical techniques. Implant based prosthesis might not be feasible in many conditions due to poor bone quality or improper anatomical structures. Dr. Malo described a technique to improve the esthetics in compromised implant position. The Malo's bridge is the most esthetically advanced form of fixed prosthodontic rehabilitation for fully edentulous patients. This poster enlightens the evolution of the Malo concept in prosthetic dentistry

VACCINATION - FOR A DISEASE FREE NATION

Name : Hari Pranesh P.
Guide : Dr. Priscilla Joys
Institution : Sri Ramakrishna Dental College & Hospital, Coimbatore



ABSTRACT:

Vaccine is the most cost effective and scientific method of reducing morbidity and mortality in the World. While most of the people vaccinate, the success of vaccination is challenged by individuals and group who delay, hesitate or refuse vaccine due to various reasons. Recently, World Health Organization in a report held that vaccine hesitancy is among the top 10 global threats in 2019. Vaccine hesitancy has been reported in 90% of the countries in the world. The main issue with vaccine hesitancy is misinformation. A number of strategies have been developed to address the various socio-economic and cultural circumstances of vaccine hesitancy. Hence, an evaluation of the reasons for vaccine hesitancy is vital at present to strengthen the current COVID 19 vaccination programme. The poster tries to trace the present status and reasons for vaccine hesitancy reported in the recent pandemic times, and identify strategies which are being implemented to overcome the vaccine hesitancy.

A GOOD CHANGE BRINGS POSITIVITY

Name : N. Kushall Raj
Guide : Dr. S. Madhan Kumar
Institute : Sri Ramachandra Institute of Higher Education and Research, Porur, Chennai



ABSTRACT:

"Peace begins with a smile"- Mother Teresa.

Beauty with health is the mantra for today's times. Newer technologies are being harnessed & advance research is being undertaken in the field of esthetic dentistry. The focus of dentistry in the present times is not only the prevention and treatment of disease but on meeting the demands for better esthetics. The principles of smile design require an integration of esthetic concepts that harmonize facial esthetics with the dental facial composition and the dental composition. The dental facial composition includes the lips and the smile as they relate to the face. The dental composition relates more specifically to the size, shape, and positions of the teeth and their relationship to the alveolar bone and gingival tissues.

Today, we have digital smile design as a multipurpose digital tool which has enhanced the esthetic diagnostic capabilities with much more organized treatment plan and better communication among the team members and patient thereby resulting in more predictable treatment outcome and increased effectiveness of case presentation and patient motivation. The aim of this review focuses on key elements of smile designing and technologies that can be used for smile designing in modern era compared to conventional methods.

OZONE THERAPY: A REVOLUTION IN DENTISTRY

Name : Nivetha Manoharan and Moushmi K
Guide : Dr. A. Soumya
Institution : Sri Ramachandra Faculty of Dental Sciences



The Technology which was under cover and research wings for over a decade is now put into practice. Even though successful, not many places are still aware of the functional aspects. Till today the only way to treat caries was to excavate the caries and fill it with a sustainable and retentive material. Heal Ozone is an alternative treatment method, which mainly kills the bacteria on decayed tooth. It is advantage for patients with dental phobia. Healozone gas is directly placed on carious tooth and remineralization solution is applied after ozone therapy. The ozone generating system converts oxygen into ozone, which is fitted on silicone cup and it should be close contact to the carious tooth surface. It is mainly used in the form of aqueous solution and ozone oil. Healozone treatments are most non deafening when applied during the early stages of decay. By regularly visiting dentist is still the best way to preserve and protect dental health.

“UNSEEN ATTRIBUTES OF COVID 19”

Name : Manasa. S
Guide : Dr. Akila Ganesh
Institution : Sri Ramachandra Faculty of Dental Sciences

**ABSTRACT**

Coronavirus disease 2019 (COVID-19) is caused by a novel coronavirus, now called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV), which was first identified amid an outbreak of respiratory illness cases in Wuhan City, China. Dysgeusia is the first recognized oral symptom of novel coronavirus disease (COVID-19). In this poster, the oral lesions of COVID-19 patients have been explained. During this period, despite the implications of saliva for virus transmission and the possibility of salivary glands as a reservoir, oral manifestations have been reported. Oral dryness, vesiculobullous lesions, aphthous-like lesions, dysgeusia, and anosmia are the common oral signs reported. Suggested diagnoses of the lesions were aphthous stomatitis, herpetiform lesions, candidiasis, vasculitis, mucositis, drug eruption, necrotizing periodontal disease, angular cheilitis, atypical Sweet syndrome and Melkerson-Rosenthal syndrome. A recent finding, COVID tongue has also been discussed. The most common sites of involvement in descending order were tongue (38%), labial mucosa (26%), and palate (22%). Patients with older age and higher severity of COVID-19 disease had more widespread and severe oral lesions. Dentist whose primary whereabouts is the oral cavity can thus play an important role in diagnosing COVID-19 with such oral manifestations. Lack of oral hygiene, opportunistic infections, stress, immunosuppression, vasculitis, and hyper-inflammatory response secondary to COVID-19 are the most important predisposing factors for onset of oral lesions in COVID-19 patients. This poster highlights the significance of the oral manifestations, which may be a predictor for COVID 19.

COMPARISON OF ALGINATE

Name : Asfiya Hasnath Bano, Aishwarya
Guide : Dr. Pallavi N.T.
Institution : Coorg Institue of Dental Sciences, Virajpet



Abstract:

Making of impressions to construct dentures have always been difficult. Most failures were due to the fact that compound wax would usually distort and impression plaster had to be removed in fragments and put together with sticky wax. This would result in inaccurate reproduction of the tissues and undercuts around the teeth. In order to overcome such problems materials with are flexible and elastic in nature were introduced, in which alginate is more as dental impression, because of its properties and ease of manipulation.

The word alginate comes from alginic acid i.e. anhydro beta d-mannuronic acid. Like agar, it is a natural hydrophilic colloidal polysaccharide extracted from brown seaweed.

Alginates are available in various forms depending on the properties such as tear strength, dimensional stability, tensile strength, stiffness and so on. This poster reviews about modifications of the alginates depending on their properties.

ADVANCES IN PERIODONTAL REGENERATION

Name : Theertha Prakash
Guide : Dr. Sharath Uthappa, Dr. Rashmi
Institution : Coorg Institute of Dental Sciences, Virajpet



Untreated periodontal disease leads to tooth loss through destruction of the attachment apparatus and tooth-supporting structures. The goals of periodontal therapy include not only the arrest of periodontal disease progression, but also the regeneration of structures lost to disease where appropriate. Conventional surgical approaches (e.g., flap debridement) continue to offer time-tested and reliable methods to access root surfaces, reduce periodontal pockets, and attain improved periodontal form/architecture. However, these techniques offer only limited potential towards recovering tissues destroyed during earlier disease phases. Recently, surgical procedures aimed at greater and more predictable regeneration of periodontal tissues and functional attachment close to their original level have been developed, analyzed, and employed in clinical practice. This paper provides a review of the current understanding of the mechanisms, cells, and factors required for regeneration of the periodontium and of procedures used to restore periodontal tissues around natural teeth.

BEST OPTIONS FOR PARTIALLY EDENTULOUS PATIENTS

Name : Diya Rajeshwari, Neha Prasanna
Guide : Dr. Basavaraj S. Salagundi
Institute : Coorg Institute of Dental Sciences, Virajpet

**ABSTRACT:**

Patients generally visit a dental office to resolve the functional and/or esthetic problems or pain associated with missing teeth. Thus, the primary challenge of the clinician is to understand the needs and the expectations of the patient. In order to obtain a unique treatment plan, evaluation of the patient's medical and dental history, are required. As well as one as to consider various prospective such as anatomy of the ridge, contour, form, strength that can be obtained from the abutment teeth and so on. The poster presentation highlights the need for the proper treatment planning for partially edentulous arches.

DENTIFRICES AND REMINERALISATION OF INITIAL CARIES

Name : Roopali K.
Guide : Dr. Jitesh Jain, Dr. Kathiresan
Institution : Coorg Institute of Dental Sciences, Virajpet

**ABSTRACT:**

Dental caries is a universal oral disability present across the world to both, the developed and the developing nations. Owing to the dependence on refined carbohydrates, the incidence of caries has increased many folds.

Dentifrices are one of the most practical methods for maintaining a good oral health and a vehicle for delivering remineralizing agents. Fluoride is one of the most commonly used remineralizing agents in dentifrices and are available as sodium fluoride, stannous fluoride, amine fluoride, and sodium monofluorophosphate.

Minimal intervention is a key phrase in today's dental practice which focuses on the least invasive treatment options possible in order to minimize tissue loss and patient discomfort.

One of the key elements of a biological approach is the usage and application of remineralizing agents to tooth structure (enamel and dentin lesions). These agents are part of a new era of dentistry aimed at controlling the demineralization/ remineralization cycle, depending upon the microenvironment around the tooth.

The best strategy for caries management is to focus on the methods of improving the remineralizing process with the aid of remineralization products.

Contemporarily, a variety of remineralizing agents like Fluorides, Casein calcium phosphopeptides, Novamin, Calcium sodium phosphosilicate, Ozone, Hydroxyapatite, and Xylitol, that aid in remineralization of tooth structure.

Dental caries has been shown to have a negative impact on the oral as well as general health related quality of life, Thus Remineralizing agents plays an important role in improving overall health amongst the population by reducing the occurrence of dental caries.

OZONE THERAPY IN PREVENTIVE DENTISTRY

Name : Sreejisha. S
Guide : Dr. Jithesh Jain
Institute : Coorg Institute of Dental Sciences, Virajpet



Ozone is a triatomic molecule, consisting of three oxygen atoms. Its application in medicine and dentistry has been indicated for the treatment of about 260 pathologies. Three fundamental forms of ozone application of oral tissue are applied - Ozone water, ozonated olive oil, Ozone gas. In 1930, A German dentist, Dr. E.A. Fisch used ozone on a regular basis on his dental practice in Zurich, Switzerland. The ozone therapy has been more beneficial than present conventional therapeutic modalities that follow a minimally invasive and conservative application of dental treatment. The exposition of molecular mechanism of ozone further benefits practical functions in dentistry.

Ozone in a number of ways very powerful tool to stop caries. Even extremely deep lesion can quite predictably be arrested. Not only does ozone kill all the bad bacteria, fungi, viruses and protozoans, it also removes their breakdown product as well as other necrotic debris.

Thus in future prespective, application of ozone in dentistry will be a good adjuvant along with other adjuvants such as flourides, xylitol, probiotics etc to encourage remineralization and thus to prevent dental caries.

ZIRCONIA

Name : Sam Kurien Thomas, Ranju Aliyaz
Guide : Dr. Indra Kumar
Institute : Coorg Institute of Dental Sciences, Virajpet



ABSTRACT:

Zirconia has been applied as structural material for dental bridges, crowns, inserts, and implants, mostly because of its biocompatibility, high fracture toughness, and radiopacity. Several positive characteristics of zirconia, such as biocompatibility, color and mechanical properties, make the material suitable for use in modern dentistry. Further, the advent of newer technologies have made it possible for zirconia to be milled, thus increasing precision and decreasing manual errors. However, ceramic bonding, ageing, light transmission and manufacturing processes are all factors that need to be further evaluated in order to guide the successful use of zirconia as a prosthetic restorative material.

Zirconium dioxide (ZrO_2), sometimes known as zirconia, is a white crystalline oxide of zirconium.

Three phases are known: Monoclinic below 1167 °C, Tetragonal between 1170 °C and 2370 °C, and cubic above 2370 °C.

Partially stabilized zirconia (PSZ), as an alternative is used for implant fabrication. It shows minimal microhardness and elastic modulus, good strength, and fracture toughness than that of alumina. When a stress occurs on a ZrO_2 surface, a crystalline modification opposes the propagation of cracks.

PEEK and its Applications

Name : Manjesh Maurya, Mohammed Shersha
Guide : Dr. Pallavi N T
Institute : Coorg Institute of Dental Sciences, Virajpet

**ABSTRACT:**

Polyetheretherketone (PEEK) is a ketone-based semicrystalline thermoplastic that has been widely used for medical and industrial applications because of its excellent mechanical and chemical resistance properties. In the dental field, its use for crowns, implant superstructures, fixed partial dentures, and RPD frameworks is being investigated. This poster summarizes the various applications of PEEK materials used in dentistry.

DENTAL IMPLANT MATERIALS

Name : Fathimath Sahala Parvin, Keerthana A M
Guide : Dr. Pallavi N T
Institution : Coorg Institue of Dental Sciences, Virajpet



Abstract: A dental implant is an artificial tooth root that is placed into the jaw to hold a replacement tooth or bridge. Dental implants may be an option for people who have lost a tooth or teeth due to periodontal disease, injury or any other reason. Oral implants came into being in the 1960s as a reliable treatment option for Some of the currently used dental implant materials are titanium, ceramics, zirconia, PEEK, PEKK, roxolid. This poster summarizes the current knowledge on the recent advancement in implant materials used in dentistry.

HAEMOSTATIC AGENTS IN MAXILLOFACIAL SURGERY

Names : Sudharshan VP and Teenu Mariya
Guide : Dr Prasanna Kumar and Dr Jambukeshawar
Institution : Coorg Institue of Dental Sciences, Virajpet



Bleeding intraoperatively and postoperatively in oral surgery poses a great threat to patient and can lead to serious ontoward consequences if uncontrolled. The dental surgeon must be familiar with the range of haemostatic agents available and their application during different types of bleeding episodes. Bleeding complications can occur in healthy as well as systemically compromised patients. Severe uncontrolled bleeding leads to hemodynamic destabilization, hypoxia, multiple organ failure and death.

The purpose of E-POSTER is to reveal the applications of various haemostatic agents in the management of bleeding in oral surgery.

Haemostatic agents are used to control bleeding during surgery. There are several haemostatic agents like thermal (electrocautery ,laser), chemical (epinephrine, cellulose) and mechanical (direct pressure ,sutures), use of these haemostatic agents reduces bleeding from the surgical site.

IMPRESSION TECHNIQUES IN COMPLETE DENTURE

Name : Ashira M, Fizza Fathima
Guide : Dr. Unni Pypallil
Institution : Coorg Institue of Dental Sciences, Virajpet



Dental impression making is the process of creating a negative form of the teeth and oral tissues, into which gypsum or other die materials can be processed to create working analogues. Contemporary dentistry generates new information every year and digital dentistry is becoming established and influential. Although dentists should stay abreast of new technologies, some of the conventional materials and time-tested techniques remain widely used. It is important to review the impression-making process to ensure that practitioners have up-to-date information about how to safely and effectively capture the exact form of the oral tissues to provide optimal patient management.

THE RISE AND IMPACT OF COVID 19 IN INDIA

Name : Navya Aravind, Arul Jothi
Guide : Dr Jithesh Jain
Institution : Coorg Institute of Dental Sciences, Virajpet



The corona virus disease (COVID- 19) pandemic, which originated in the city of Wuhan, China, has quickly spread to various countries, with many cases having been reported worldwide.

As of February 18th, 2021, in India, 7,43,127 positive cases have been reported. India, with a population of more than 1.34 billion-the second largest population in the world will have difficulty in controlling the transmission of severe acute respiratory syndrome corona virus.

Multiple strategies would be highly necessary to handle the current outbreak. The Ministry of Health and Family Welfare of India has raised awareness about the recent outbreak and has taken necessary actions to control the spread of COVID-19. The central and state governments are taking several measures and formulating several wartime protocols to achieve this goal. Moreover, the Indian government implemented a 55-days lockdown throughout the country that started on March 25th, 2020, to reduce the transmission of the virus.

This outbreak is inextricably linked to the economy of the nation, as it has dramatically impeded industrial sectors because people worldwide are currently cautious about engaging in business in the affected regions.

The vaccination for COVID 19 has been started in India and as for February 18 one crore vaccine has been administered to most of the health care and frontline workers and India is the second fastest country in the world to cross this milestone against the global pandemic.

To conclude, Every Citizen of India should be responsible by following all social distancing guidelines advised by Government to combat and eliminate this pandemic.

ESTHETICS IN COMPLETE DENTURE

Name : Jyoti Devaramani, Lena Elizabeth
Guide : Dr. Pallavi N T
Institution : Coorg Institute of Dental Sciences, Virajpet.



Denture esthetics is responsible for the beautiful and attractive effect of an individual. It is the combination of science and art of Prosthodontics. The appearance of the lower part of the face is primarily affected due to loss of oral structures. The appearance of the entire lower half of the face depends upon the dentures in edentulous patients. Esthetics plays an important role in the complete denture prosthesis. Denture esthetics can be enhanced through the application of the concepts and proportions of dental esthetics. These include selection of teeth form, size, shade and position of the teeth, and denture base material. To create an individualised esthetic appearance to the patient, characterised complete denture can be fabricated. Modifications are made in the teeth or the denture bases to make it appear more natural for that particular individual. This poster reviews the concepts and technique factors governing the esthetics of complete denture. In order to achieve the esthetics for complete denture, a dentist should consider the esthetic guidelines.

“ARE YOU GETTING A GOOD NIGHT'S SLEEP???”

Name : Parnika Misra
Guide : Dr. Vikram Susil
Institution : Coorg Institute of Dental Sciences, Virajpet

**ABSTRACT:**

Obstructive sleep apnea (OSA) is the most common type of sleep disorder and is caused by complete or partial obstruction of the upper airway. It is characterized by repetitive episodes of shallow or paused breathing during sleep, despite the effort to breathe, and is usually associated with a reduction in blood oxygen saturation. The hallmark symptom of OSA syndrome in adults is excessive daytime sleepiness.

Dental sleep medicine is an area of dental practice that focuses on the use of oral appliance therapy to treat sleep-disordered breathing, including snoring and obstructive sleep apnea (OSA). Dentists work together with physicians to identify the best treatment for each patient.

Prosomnus sleep technologies designs and manufactures highly customizable precision intraoral devices that can be used to treat patients diagnosed with Obstructive Sleep Apnea. The use of CAD/CAM technology makes it unique from other oral devices, which is used to reposition mandible in an advanced position.

“BIONIC PROSTHESIS”

Name : Parnika Misra
Guide : Dr. Pallavi
Institution : Coorg Institute of Dental Sciences, Virajpet

**ABSTRACT:**

Loss of an extremity at any level has a major impact on a patient's life. Using bionic reconstruction, extremity function can be restored and the patient reintegrated into daily life. Surgical procedures including selective nerve transfer and anchoring of prostheses into bone are combined with structured rehabilitation and modern prosthetic fitting. The patient is thereby able to use the prostheses intuitively and with multiple degrees of freedom.

Bionic reconstruction is a sophisticated method for restoring extremity function and now-a-days can be considered a standard of care.

The ability to three-dimensionally interweave biological tissue with functional electronics could enable the creation of bionic organs possessing enhanced functionalities over their human counterparts. Conventional electronic devices are inherently two-dimensional, preventing seamless multidimensional integration with synthetic biology, as the processes and materials are very different. Here, this paper presents a novel strategy for overcoming these difficulties.

As a proof of concept, we generated a bionic ear via 3D printing of a cell-seeded hydrogel matrix in the anatomic geometry of a human ear, along with an intertwined conducting polymer consisting of infused silver nanoparticles. This allowed for in vitro culturing of cartilage tissue around an inductive coil antenna in the ear, which subsequently enables readout of inductively-coupled signals from cochlea-shaped electrodes. The printed ear exhibits enhanced auditory sensing for radio frequency reception, and complementary left and right ears can listen to stereo audio music. Overall, our approach suggests a means to intricately merge biologic and nano-electronic functionalities via 3D printing.

ADVANCEMENT IN MATRIX SYSTEMS

Name : Shreya S.C., Nandana Ramesh
Guide : Dr.K.C. Ponnappa, Dr. Salin Nanjappa
Institution : Coorg Institute of Dental Sciences, Virajpet



ABSTRACT

Matricing is a procedure, where by a temporary wall is created opposite to axial walls and surroundings areas of the tooth structure that were lost due to caries or tooth preparation. Matrix wall should possess the exact three-dimensional contour of the future restoration. It should be immobile during the setting of the restorative material and should not react with or adhere to it.

It consists of two parts

1. Matrix band
2. Matrix band retainer

This poster includes advancement in matrix systems that is sectional matrix bands, contact rings and custom wedges.

SUGAR SUBSTITUTES AND XYLITOL IN PREVENTION OF ORAL DISEASES

Name : Niveda Santhosh
Guide : Dr Kathiresan R, Dr Jithesh Jain
Institution : Coorg Institute of Dental Sciences, Virajpet



ABSTRACT

Over the years, many have improved the way dental hygiene care is provided. Children who are caries free initially, but by adulthood, have experienced caries.

Dental caries is a bacterial disease in which diet is a major etiologic factor. Ingestion of sugars plays in caries control strategies that aim to restrict exposure to sugars have been used for generations. In dentistry, caries- control strategy involves replacing the ingestion of fermentable sugars primarily sucrose with non-fermentable sugar substitutes. There are variety of sugar substitutes that have been used in the past. Since a study conducted in Turku, Finland, evaluating the effectiveness of xylitol on dental plaque reduction in 1970, xylitol has been globally accepted as a natural sweetener approved by the US Food and Drug

Administration and the American Academy of Pediatric Dentistry. Xylitol, a naturally occurring five-carbon sugar polyol, is a white crystalline carbohydrate known since a century ago. Xylitol promotes remineralisation by increasing saliva rate and by inhibition of bacteria growth.

It is based on the mechanism that cariogenic microorganisms do not metabolize xylitol and consuming xylitol does not decrease plaque pH. Thus Xylitol usage will have a positive influence on the quality of the oral environment and it would be useful to introduce it into prophylactic programmes.

ADVANCES IN TOOTHBRUSH

Name : Diya Merin Shelly, Fathima A K
Guide : Dr Radhika, Dr Amit Walvekar
Institution : Coorg Institute of Dental Sciences, Virajpet



ABSTRACT

Toothbrush has been an integral part of a daily routine across many cultures around the world from the types of antiquity to the twenty first century. A variety of cultures across the world have used many different materials from certain tree twigs like “neem” and “miswak” to bird feathers and pig hair. While , the function of toothbrush which was to mechanically cleanse the mouth has remained same over the ages, the twenty first century is looking to embrace technology to redefine what the “toothbrush” can do. In this poster we present a historical background of toothbrush and how it has evolved over years and what are the future possibilities that can be used to develop public health programs.

HEART STRINGS TO THE MOUTH

Name : Gopika Prakash, Jadhav Rohini Dileep
Guide : Dr Amit Walvekar
Institution : Coorg Institute of Dental Sciences, Virajpet



ABSTRACT

It has been recognised that microbial infection from one part of the body may have effect on the tissues and organs distant from the site of infection. Local infectious irritants can initiate inflammatory processes which may cause systemic effects. Periodontitis is characterized by gingival inflammation and periodontopathic bacteria generate immunological inflammatory responses. Recent data suggest that chronic inflammatory conditions such as periodontitis can increase the risk of cardiovascular disease(CVD).Recent reports also suggest that periodontitis is one of the key risk factor for the onset of cardiovascular diseases. Both conditions are multifactorial and share many risk factors- with inflammation playing an important role in their pathogenesis. This poster will highlight the possible link between periodontitis and cardiovascular diseases.

MOUTH RINSES IN COVID – 19

Name : Megha Menon, Sanjana Sreejesh
Guide : Dr. Rashmi Pattan Shetty
Institution : Coorg Institute of Dental Sciences, Virajpet



ABSTRACT

The proximity to the patient during dental care , high generation of aerosols and identification of SARS-CoV – 2 in saliva have suggested the oral cavity as a potential reservoir for COVID -19 transmission . Mouthwashes are widely used solutions due to their ability to reduce the number of microorganism in the oral cavity.

Although there is still no clinical evidence that they can prevent the transmission of SARS-CoV-2, preoperative antimicrobial mouth rinses with chlorhexidine gluconate (CHX), Cetylpyridinium chloride (CPC), Povidone iodine (PVP – 1) and Hydrogen peroxide (H₂O₂) have been recommended to reduce the number of microorganisms in the aerosols during oral procedure.

This poster aims to provide a review on the use of mouthwashes against COVID – 19 pandemic and to

APPLICATION OF LASERS IN PERIODONTICS

Name : Shahana M K, Shana Nasrin
Guide : Dr. Sharath Uthappa, Dr. Amit Walvekar
Institution : Coorg Institute of Dental Sciences, Virajpet



ABSTRACT

Laser is one of the most captivating technologies in dental practices since 1960. Lasers in dentistry have revolutionized several areas of treatment in the last three and half decades of 20th century. Introduced as an alternative to the mechanical cutting device, Laser has now become an instrument of choice in many dental applications. Evidences suggest its use in initial periodontal therapy, surgery and more recently its utility in salvaging implant opens up a wide range of applications. More research with better designs are a necessity before laser can become a part of dental armamentarium. This poster gives an insight to laser in periodontics.

THE SPECTRUM OF IMAGING FEATURES OF ADENOMATOID ODONTOGENIC TUMOUR - CASE SERIES

Name : Anjuna K, Niveda Santhosh
Guide : Dr Veena S Narayanan
Institution : Coorg Institute of Dental Sciences, Virajpet



ABSTRACT

Adenomatoid odontogenic tumour is an uncommon benign neoplasm of odontogenic epithelial origin accounting for less than 3 percent of odontogenic tumour. It is typically present as unilocular pericoronal radiolucency in maxillary anterior region. Very few conditions occurs in such a narrow age range and at such a restricted site. Rarely this tumour present with varied features.

We present a case series of adenomatoid odontogenic tumour demonstrating a range of imaging features and review the common and unusual manifestations.

PROGNOSTIC MARKER FOR COVID-19

Name : Hemantha Siva Sai P
Guide : Dr. Dhanuja Rani J
Institution : Government Dental College and Research Institute, Ballari



ABSTRACT

D-dimer is a fibrin degradation product (or FDP), a small protein fragment present in the blood after a blood clot is degraded by fibrinolysis. D-dimer was originally described in the 1970s and found its diagnostic application in the 1990s. Since its introduction in the 1990, it has become an important test performed in patients with suspected thrombotic disorders.

It is so named because it contains two D fragments of the fibrin protein joined by a cross-link. D-dimer tests are used to help rule out the presence of an inappropriate blood clot (thrombus). Some of the conditions that the D-dimer test is used to help rule out include: Deep vein thrombosis (DVT) Pulmonary embolism (PE). D-dimer levels are commonly elevated in patients infected with SARS-CoV-2 Significantly higher levels are found in those with critical illness and may be used as a prognostic marker for in-hospital mortality. In this review, an update on the role of D-dimer in COVID-19 has been described.

IMPLANT DENTISTRY: AN EVER ADVANCING LANDSCAPE

Name : Bhagya
Guide : Dr. Radhika B
Institution : Government Dental College and Research Institute, Ballari



The science of implantology is highly dynamic. Ever since its introduction into the field of dentistry by Dr.P.I.Branemark, it has undergone numerous modifications and improvements. With each improvement and advancement made, implantology has proved to be a boon in disguise to the society and hence its acceptance by the general population has widely increased despite it being a relatively expensive treatment modality. Improvements at every stage, right from the diagnosis, imaging modalities, treatment planning, surgical procedures, grafting materials and techniques and implant designs have developed, which has made it possible to restore the missing dentition using implants in most of the clinical scenarios. As a result of continuous research, many challenging clinical situations can be successfully managed with predictable outcome. This presentation gives a brief review of the current concepts and the possible future trends in the field of implantology.

UNRAVELLING THE FATALNESS OF CORONAVIRUS!

Name : Palak Kaul
Guide : Dr. Dhanuja Rani J
Institution : Government Dental College and Research Institute, Ballari



ABSTRACT

The severe acute respiratory syndrome (SARS) coronavirus-2 is a novel coronavirus belonging to the family Coronaviridae and is now known to be responsible for the outbreak of a series of recent acute atypical respiratory infections originating in Wuhan, China. The disease caused by this virus, termed coronavirus disease 19 (COVID-19), has rapidly spread throughout the world at an alarming pace and has been declared a pandemic by the WHO on March 11, 2020. Although much has been discovered regarding the transmission and presentation, less is known about the pathophysiology of COVID-19. Studies have indicated a strong immunological basis of COVID-19 infection. Not only does it weaken the immune system causing multi-organ involvement (especially lungs, heart, kidney, gastrointestinal and hepatic system, brain and skin) but also helps in its progression and spread to other individuals. Advances in viral genetic sequencing and technology have certainly paved the way for the development of a vaccine for COVID-19, with many pharmaceutical corporations already having started human trials.

In this review, an update on the pathophysiology of COVID-19 has been described.

“ORAL HEALTH FOR WHEELING WARRIORS”

Name : Niharika T P
Guide : Dr. Jithesh Jain, Dr. Kathiresan R
Institution : Coorg Institute of Dental Sciences, Virajpet

**ABSTRACT:**

Over 1 billion people, about 15% of world's population have some form of disability. Among them between 110 to 190 million people experience functional disabilities.

People with special needs are almost twice as likely to develop oral health problems.

This may be due to the multidimensional barriers they come across in accessing dental services and therefore they manifest increased incidence of dental caries, periodontal diseases, oro-facial trauma, drug induced gingival hyperplasia and other oral health problems.

Hence people with special needs require greater degree of care and attention compared to normal individuals.

To conclude, A standardized and more organized approach to oral health care for special needs group is required to ensure a more accessible, equitable, and technologically appropriate provision of care, so as to rehabilitate them and to enhance their quality of life through their improved oral health.

ORAL HEALTH AND COVID-19

Name : Padma Swetha.S, Indra.A
Guide : Dr. Bhakti
Institution : Coorg Institute of Dental Sciences, Virajpet

**ABSTRACT**

The appearance of C-virus has caused an unpredictable pandemic in the modern era. Despite of the pulmonary changes, there are many oral effects of COVID-19 that are reported. Saliva act as the mode of virus transmission and also the possibility of salivary glands as a reservoir. Oral effects like oral dryness, vesiculobullous lesions, apthous like lesions, burning sensation and dysguesia are reported.

The purpose of this e-poster is to summarise the effects of COVID-19 on oral health.

LASERS IN ORTHODONTICS

Name : Haripriya H.R.
Guide : DrVikram Susil
Institute : Coorg Institute of Dental Sciences, Virajpet



LASER: Light amplified by stimulated emission of radiation. They are introduced as upcoming tool in dental specialties. Its application in orthodontics is currently being evolved to benefit the patient with atraumatic and painless treatments, besides other advantages.

Several types of dental lasers are now available, with the diode laser being of particular interest for a orthodontic clinician. This poster evaluates the effectiveness and efficacy of laser technology in orthodontic treatment, the advantages, disadvantages of lasers, its types and possible uses in clinical orthodontics.

FORENSIC “ORTHO”DONTOLOGY

Name : Harsha K.H., Jayalakshmi J
Guide : Dr. Vikram Susil
Institute : Coorg Institute of Dental Sciences



ABSTRACT

Accurate comparison of the ante mortem photographs and the skull of a deceased person is dependent upon suitable superimposition techniques and a post mortem dentition which is comparable to the situation obtaining in the individual at the time of death. One of the best and the easiest diagnostic aids used in identifying the deceased are the facial and intraoral photographs. While the extra oral photographs can be used to directly identify the face in recognizable faces, the intraoral photographs are of more value in completely disfigured faces, as there may be certain classical hard tissue findings such as fluorosis, enamel decalcification, enamel cracks and fractures, tooth attrition, abrasion, lower canine's anatomy, to name a few. A three dimensional view of the maxillary and mandibular arches through models, help us assess certain features of the malocclusion, morphology and anatomy of teeth such as enamel abrasion, attrition and fractures. In particular, the rugae area, intercanine width, lower canine size and shape can be better assessed on a model which are of great help in age and sex determination of the victim. Radiographs such as the OPG, lateral cephalogram, IOPAR, occlusal radiographs etc are routinely used as essential and supplemental diagnostic aids in orthodontic patients. Comparison of such ante mortem radiographs with the post mortem radiographs is the most accurate and reliable method of identifying remains.

ARTIFICIAL INTELLIGENCE IN HEALTH CARE

Name : Jahnvi G., Prakruthi P.

Institute : Rajarajeshwari Dental College, Bangalore

Artificial intelligence refers to the idea of machines being capable of performing human tasks. AI is the research field that studies and develops technological systems that can solve complex tasks in ways that would traditionally need human intelligence. The artificial intelligence can generate a huge reform in almost every industry. Despite all the potential AI have not by large entered routine dental practice. However when you look at the brighter side of a thing you should acknowledge that there is a darker side to it. Similarly despite several advantages that AI offers it also has several disadvantages that we can't ignore some of the major disadvantages of AI implementation are : High cost of implementation, doesn't improve with experience, lacks creativity, risk of unemployment and ultimately can't replace humans. This abstract is mainly about the used and hurdles of using AI.

BONYDIARY

Name : Kavya S

Guide : Dr. Priya N S

Institute : V S Dental College & Hospital, Bangalore



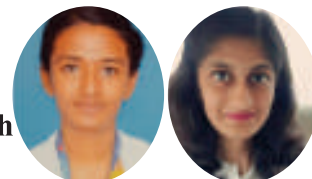
Bone provides more functions other than just being a structural framework of the body. Bone is a multifunctional tissue providing functions like mechanical support for joints, tendons and ligaments, protect vital organs from damage, and act as a reservoir for calcium and phosphate in the preservation of normal mineral homeostasis. This article mainly focuses on fun facts, few bone related diseases. This poster highlights on bone and its importance in oral health.

E-POSTERS CASE REPORT

Sl. No.	TOPIC	PRESENTER/S	COLLEGE	Pg. No.
1	Patient-specific implant in a young adult with post traumatic facial deformity.	Giftty F.R. Esha Verma	Sri Ramachandra Institute of Higher Education and Research	128
2	Central giant cell granuloma	Abirami. M	Sri Ramachandra Institute of Higher Education and Research	128
3	“Derailing Black Mucor” – A Post Covid dilemma”	Nandhini. M	Sri Ramachandra Institute of Higher Education and Research	129
4	Noche of extrinsic and intrinsic muscles in tongue cancer	Neha Deenadayalan Nikita Santa Santhosh	Sri Ramachandra Institute of Higher Education and Research	129
5	Oroantral fistula	Mahishalini Anandhan	Mahe Institute of Dental Sciences	130
6	Anterior maxillary distraction	Aditya. V Ajay. R	Sri Ramachandra Institute of Higher Education and Research	131
7	It's All in the Nerve-Schwannomas of oral cavity- Our experience	Aparajita Dolkhey Bhimireddy Tanmayee	Sri Ramachandra Institute of Higher Education and Research	132

PATIENT-SPECIFIC IMPLANT IN A YOUNG ADULT WITH POST TRAUMATIC FACIAL DEFORMITY

Name : Gifty F.R., Esha Verma,
Guide : Dr. J. Naveen Kumar, Dr. S Jawahar Babu
Institution : Sri Ramachandra Institute of Higher Education and Research



Abstract:

The reconstruction of maxillofacial defects is gruelling for most surgeons. Inadequately reduced facial fractures can result in a wide range of severe secondary deformities. The involvement of zygoma is a rare entity and is often difficult to treat due to the unique structural, functional, and aesthetic properties of the zygoma. Implants are apt for managing purely cosmetic defects. On the other hand, functional deficits generally require mobilization, correction, and subsequent fixation.

Traditionally, osteotomies mobilising the zygoma played a major role in treating secondary deformities. The use of pre-made alloplastic implants and autogenous grafts is often associated with resorption, infection, and displacement. Recent technological advances have led to the use of patient-specific implants (PSIs) in reconstructive surgery. Using a custom computer-designed PSI in this case helped us alleviate guesswork leading to a much more desirable outcome compared to typical treatment protocol.

Use of computer-designed PSI has shown to enable a more accurate reconstruction of maxillofacial defects, eliminating the usual complications seen in preformed implants and resulting in higher patient satisfaction.

CENTRAL GIANT CELL GRANULOMA

Name : ABIRAMI.M
Guide : Dr. K. SANTHOSH KUMAR
Institution : Sri Ramachandra Institute of Higher Education and Research



Abstract :

Tumors of maxillofacial region in pediatric age group is quite rare. Most of the odontogenic tumors usually occurs on pediatric age population like keratocystic odontogenic tumor, ameloblastoma and dentigerous cyst. WHO has defined central giant cell granuloma (CGCG) as "A localized benign but sometimes aggressive, osteolytic proliferation consisting of fibrous tissue with hemorrhage and hemosiderin deposits and presence of osteoclast-like giant cells with reactive bone formation." It usually affects younger age under the age of 30 and commonly affects mandible than maxilla. This poster highlights about a rare case of central giant cell granuloma in the left mandibular posterior region in a 12 year old child treated successfully with the segmental resection with the help of newer diagnostic advancements in maxillofacial surgery such as pre-operative 3D planning.

“DERAILING BLACK MUCOR” – A POST COVID DILEMMA”

Name : Nandhini M

Institution : Sri Ramachandra Faculty of Dental Sciences



Coronavirus disease 2019, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has been sweeping across the globe. One may suffer mild to moderate respiratory issues if infected with COVID-19, but in many cases, the virus is affecting a patient's overall well-being and aggravating other severe diseases, as well. After months of research, it is now known that apart from attacking the respiratory tract, COVID also affects blood vessels and the body's defense mechanism drastically. In latest medical news we could find alarming affliction that a lot of hospitals in India reporting multiple cases in recovering coronavirus patients, who were diagnosed with the deadly fungal infection popularly titled as the “black fungal disease”. Most commonly reported are pulmonary and rhino-orbital mucormycosis.

This poster is about a rare clinical case presentation of Mucormycosis in a post Covid recovered diabetic patient, who developed osteomyelitis of maxilla along with an invasive systemic spread. The poster also throws light on the pathogenesis of this curious case and its possible mitigation measures. Though it is a highly fatal condition, a high index of suspicion, early diagnosis, and appropriate management can improve the prognosis.

NICHE OF EXTRINSIC AND INTRINSIC MUSCLES IN TONGUE CANCER

Name : Neha Deenadayalan, Nikitha Santhosh

Guide : Dr. S. Elengkumaran

Institution : Sri Ramachandra Faculty of Dental Sciences

Tongue cancer is the most common cancer in the region of oral cavity. The management of tongue cancer is challenging because of its highly muscular structure and vascularity. The muscles of tongue comprised of four intrinsic and extrinsic muscle. Invasion of the extrinsic lingual muscles is a criterion for the upstaging of cancers of the oral cavity. By identifying a number of anatomical landmarks, it is possible to deduce which muscles are present in histological sections and therefore state categorically whether they are involved by tumour, thus helping to figure out the appropriate treatment plan.

This article describes a case report of Ca Right lateral border of tongue and its surgical management.

OROANTRAL FISTULA

Name : Mahishalini Anandhan
Guide : Dr.Teenuthomas
Institution : Mahe Institute of Dental Sciences



Abstract:

Introduction: 55 year old male patient has been diagnosed with oroantral fistula following the extraction. It is the pathological space created between the maxillary sinus and the oral cavity

Methods :

Pedicled buccal pad of fat

Results:

Management of large communication is better to be done with Pedicled buccal pad of fat sandwiched under the mucoperiosteal rotation advancement flap . Patient has been recalled after 2 weeks . Socket was healed

Discussion:

This procedure can be employed when all the methods had failed to yield proper result. Communication of > 5mm tract excised. Flap elevated. Periosteal membrane on under surface of the flap noted. Reflect flap posterior and superior to zygomatic buttress .Incision on periosteal layer. Slow traction was done with non toothed forceps. Herniated buccal pad of fat. Suture in two layers - sandwiched 1. under buccal pad of fat 2. Over mucoperiosteal flap. The site was healed after 10 days.

ANTERIOR MAXILLARY DISTRACTION**Name : Aditya.V, Ajay.R****Guide : Dr. Vignesh Kailasam, Dr.C.Siva Subramanian****Institute : Sri Ramachandra Institute of Higher Education and Research****Abstract**

Anterior maxillary segmental distraction is an effective surgical procedure in the treatment of maxillary hypoplasia secondary to cleft lip and palate with its unique advantage of maintaining the velopharyngeal function makes this procedure widely applied.

Although surgical techniques and methods have been greatly improved in the last decade, maxillary advancement through distraction osteogenesis is widely accepted bone elongation procedure that can be performed during growing stages.

Female patient aged 14 yrs reported to the department with chief complaint of mild retrusion of upper jaw. On examination patient had unilateral cleft lip and palate defect with associated midface deficiency and maxillary hypoplasia. Her dental findings were narrow and collapsed arch with crowding

Patient had a mild class III skeletal profile. Anterior maxillary distraction was considered as her treatment taking into account the nature of cleft and age of the patient. Distractor screw was fabricated prior to the surgery. Patient was referred to surgery. An osteotomy cut was placed between the 2nd premolar and 1st molar and the distractor screw was cemented to the tooth. Post latency phase, the distractor was activated to move the anterior part of the maxilla in a horizontal plane with a new bone formation at the site distracted.

Post distraction, the anterior part of the maxilla was displaced sufficiently to get a positive overset with a good improvement in the facial profile. This in turn brought a good fullness in her midface with an overall enhancement of the facial appearance. Following distraction, fixed orthodontic appliance was used to align the teeth in the newly formed bone.

Patients with cleft lip and palate are mostly associated with maxillary hypoplasia in 3 dimensions. Maxillary distraction osteotomy increases the length of the maxilla and induces mucosa extension.

“IT'S ALL IN THE NERVE- SCHWANNOMAS OF ORAL CAVITY- OUR EXPERIENCE”

Name : Aparajita Dolkhey, Bhimireddy Tanmayee
Guide : Dr. A. Pearlcid Siroraj
Institution : Faculty of Dental Sciences, Sri Ramachandra Institute of
Higher Education and Research, Chennai

**Abstract:**

Schwannoma, also called neurilemmoma or neurinoma, is a benign tumor of neurogenic origin, arising from the myelin sheath of a neuron. Although relatively uncommon, head and neck region is the most common site with 25-48% cases of schwannoma. However, intraoral schwannoma account for only 1%. Intraorally, tongue is the most common site, followed by palate, lips, floor of the mouth and intraosseous lesions of posterior mandible. Malignant transformation of the lesion is uncommon, making conventional surgical excision the treatment of choice.

In this case series, we present three cases of histologically proven schwannoma, successfully treated by us, occurring at three rare sites, namely, lip, floor of the mouth and inferior alveolar canal.

Dentists should be aware of this rare benign neoplasm which might mimic as other common benign neoplasms of oral cavity. This particular benign lesion has very minimal chances of recurrence and cases of malignant transformation though rare, have been reported. Hence, patients with schwannoma have to be followed up on a regular basis.

E-POSTERS

TECHNICAL NOTE

Sl. No.	TOPIC	PRESENTER/S	COLLEGE	Pg. No.
1	3D and 4D printing combined with tissue engineering in prosthodontics	Vignesh P Sanjesh. M	Sri Ramachandra Institute of Higher Education and Research	136
2	Santosh Technique - Cowhorn Forceps for third molar impaction	Sayantan Bhattacharya	Sri Ramachandra Institute of Higher Education and Research	137
3	Dental Radiology Clinics in Covid-19 era	Aamina Hyder Tanya Jain	Sri Ramachandra Institute of Higher Education and Research	137
4	Virtual implant planning	Aswin D S Keshav Kumar M S	Sri Ramachandra Institute of Higher Education and Research	138
5	The plethora of the miniscule-nanobots	Adelyn Jerusha F Adrija N	Sri Ramachandra Institute of Higher Education and Research	138

3D AND 4D PRINTING COMBINED WITH TISSUE ENGINEERING IN PROSTHODONTICS.

Name : Sanjesh.M, Vignesh P

Guide : Dr. Anusha. S

Institution : Sri Ramachandra Faculty of Dental Sciences

Sri Ramachandra Institute of Higher Education and Research



ABSTRACT

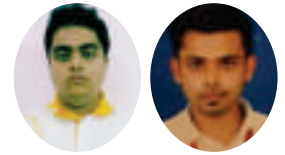
Introduction: Tissue loss due to trauma, disease or congenital abnormalities is a major health care problem worldwide. When this occurs in the craniofacial region, it induces serious physiological and psychological consequences on patients. Reconstruction of the craniofacial area to its aesthetic and functional level is therefore a desire of affected patients. The purpose of this poster is to incorporate tissue engineering along with 3D and 4D printing and its potential applications in prosthodontics.

Methods Used: 3D printing is used as a method for tissue engineering, this technology allows the production of an individualized 3D object based on a material of choice, a specific computer-aided design and precise manufacturing. 3D printing, is already in use for manufacturing of surgical guides, implant placement, surgeries involving cancer patients and for fabrication for maxillofacial process after radiation therapy. It also enables fabrication of complex forms by addition of different materials layer by layer. This has been further enhanced and 4D printing is getting evolved.

4D printing uses: incorporates materials which have the potency to change shape or color and they become bioactive and perform an indicated function when a response to an external stimuli. 3D and 4D printing have been applied in tissue engineering for the production of patient specific scaffolds which can be used for targeted tissue reconstruction.

Conclusion: 3D and 4D printing methods when used in tissue engineering help in regaining lost tissue and also help in the regeneration of function of the tissue which aids in improved function and esthetic outcome for a patient with maxillofacial defect in prosthodontics.

Keywords: 3D printing, 4D printing, tissue engineering, tissue regeneration.

SANTOSH TECHNIQUE - COWHORN FORCEPS FOR THIRD MOLAR IMPACTION**Name : Sayantan Bhattacharya and Soumik Kundu****Institution : Sri Ramachandra Institute of Higher Education and Research****Abstract:**

Impaction is one of the difficult and technical surgical procedure of oral cavity. Most of the soft impaction of upper and lower third molar always requires an open surgical method. Lots of morbidity following open surgical method to overcome this, we introduce a lower cowhorn forceps technique as a closed method for vertical and soft tissue impaction of upper and lower third molars. This technique gives excellent result without any complications.

“DENTAL RADIOLOGY CLINICS IN COVID-19 ERA”**Name : Aamina Hyder, Tanya Jain****Guide : Dr.K. Subadra****Institution : Sri Ramachandra Dental College, SRIHER****ABSTRACT:**

The COVID-19 pandemic outbreak has brought significant challenges to the global system including the practice of Oral and Maxillofacial Radiology. Similar to medical field, in dental field the role of Oral and Maxillofacial Imaging is indispensable in diagnosis and treatment of elective as well as emergency cases. Among various possible routes of transmission of COVID-19, saliva seems to be common factors between disease transmission and Oral Imaging. Hence Oral Radiology offices can be nidus for the spread of infection if strict precautions are not considered. Considering the gravity of COVID-19 and its potential to spread in the dental radiology office, an attempt has been made to throw light in the poster on how to compact COVID-19 in Oral Radiology by modifying in layout.

VIRTUAL IMPLANT PLANNING

Name : Keshav Kumar M S, Aswin D S

Guide : Dr. R. Shakir Ahmed

Institution : Sri Ramachandra Institute of Higher Education and Research

Abstract:

Clinical prosthodontics during the past decade has significantly improved and developed according to the advancements in science and patients's demands and needs. Dental implants have gained increasing popularity over the years as they are capable of restoring the function to near normal in both partial and completely edentulous arches. According to AAID around 3 million patients are undergoing Dental Implant Surgery (DIS). Virtual reality technologies are used in order to improve the human image interpretation and planning performance. This methods described are based on computer tomography (CT) data of the mandible and of the maxilla. Our technical note is on modelling of implants which allows interactive three-dimension manipulation of the anatomic model and real-time manipulation of virtual implants. A spline-based reconstruction method is described to assess the implant site in a clinically oriented view with regard to bone structures and angulation. The goal of this poster is to provide a forum on discussion on Virtual Implant planning.

Keywords: Treatment, Planning, Virtual reality, Implantology

THE PLETHORA OF THE MINUSCULE- NANOBOTS

Name : Adelyn Jerusha F, Adrija N

Guide : Dr. Kapil. R

Institution : Sri Ramachandra Institute of Higher Education and Research (DU)



Abstract :

As the saying goes , “Great things come in small packages”, Richard Feynman, one of this century's most brilliant theoretical physicist and original thinkers in his lecture titled, “There's plenty of room at the bottom” conceived the idea and study of nanotechnology. Minimally invasive technique is the current buzz word for diagnosis as well as treatment of ailments which can be achieved by the upcoming field- nanorobotics, interconnecting various areas of science and technology.

Nanobots are smart molecular machines ranging in size from 0.1-10 micro meter. Their characteristic abilities include swarm intelligence, cooperative behavior, self assembly and replication, nano information processing and programmability. This area of study is replete with potential applications. It is incorporated into almost every aspect of dental care, including the initial anaesthesia given orally by a dentist at the start of a procedure. Nanobots can potentially increase the success rate of root canal procedure with it's micro camera that provides visualisation of the root. Other potential applications range from tooth repositioning, dental cosmetic work, or even it's incorporation into a mouthwash or toothpaste to enhance daily dental care. They can autonomously detect cancerous cells and release stored therapy at the site.

The treatment using nanobots will be highly specific, and as the diagnosis is more accurate, it would be custom made for the particular subject. A day will soon come when nano dentistry will succeed in maintaining near perfect oral health through the aid of nano-robotics.

QUEST WINNERS

ACADEMIC PRESENTATIONS (Virtual Events) – FREE PAPERS

Prize	Name of the Participant	College
ORIGINAL RESEARCH		
1st	Ain Ashraf Rizwal and Nursyereen Azahar	Faculty of Dentistry, UniversitiTeknologi MARA, Malaysia
	Pratheeksha Kalappa	Coorg Institute of Dental Sciences
	Parnika Misra	Coorg Institute of Dental Sciences
	Namira Fateen K & Nidadavolu Lakshmi Neha	Sri Ramachandra Faculty of Dental Sciences, Chennai
2nd	Nurfar'ain Binti and Hamizah Binti	Faculty of Dentistry, UniversitiTeknologi MARA, Malaysia
	Nanthini P & Nadha Shakir,	Sri Ramachandra Faculty of Dental Sciences, Chennai
	Janani S & Ishwarya S	Sri Ramachandra Faculty of Dental Sciences, Chennai
	Shreenijha Ramkumar & Swetha Venkatakrishnan	Sri Ramachandra Faculty of Dental Sciences, Chennai
	Monica R and Sitara Subbiah,	Coorg Institute of Dental Sciences

REVIEW		
1st	Mehul Bagmar R & Manasa S	Sri Ramachandra Faculty of Dental Sciences, Chennai
	Aishwarya S	Sri Ramakrishna Dental College and Hospital, Coimbatore
	Z. Mohammed Ziyad & Aayush Deb	Sri Ramachandra Faculty of Dental Sciences, Chennai

	Sanskriti Singh	V S Dental College & Hospital, Bangalore
	Alakananda S	Coorg Institute of Dental Sciences
2nd	Nandhini M & Janani P	Sri Ramachandra Faculty of Dental Sciences, Chennai
	Ashmitha M	VS Dental College and Hospital, Bangalore
	Jennifer Peo and Gayathri S Chandran	Coorg Institute of Dental Sciences
	Anam H N	V S Dental College & Hospital, Bangalore

CASE REPORT

1st	Akshayaa Rajeshwari and Asifa Munaf	Sri Ramachandra Faculty of Dental Sciences, Chennai
2nd	Maria Sharon and L Preethi Valentina	Sri Ramachandra Faculty of Dental Sciences, Chennai
	Smrithi N.S,	Sri Ramakrishna Dental College and Hospital, Coimbatore

TECHNICAL NOTE

1st	Anna Lorraine & Rajani	Coorg Institute of Dental Sciences
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E-POSTER

ORIGINAL RESEARCH

1st	Janson Ng	The University of Hong Kong, Hong Kong
2nd	Pratheeksha Kalappa	Coorg Institute of Dental Sciences
	Nguyen Quoc Hoan	School of Odonto-Stomatology, Hanoi Medical University, Vietnam

REVIEW		
1st	Prachi Tipare	MGM Dental College, Navi Mumbai
	Manasa S	Sri Ramachandra Faculty of Dental Sciences, Chennai
	Parnika Misra	Coorg Institute of Dental Sciences
	Sudharshan VP & Teenu Mariya	Coorg Institute of Dental Sciences
	Haripriya H.R	Coorg Institute of Dental Sciences
	Niharika T P	Coorg Institute of Dental Sciences
2nd	KeerthiLaxmi M & Keerthana Ravi	Sri Ramachandra Dental College, Chennai
	Apoorva Nilay Dhopta	VSPM Dental College, Nagpur
	Nivetha Manoharan & Moushmi K	Sri Ramachandra Faculty of Dental Sciences, Chennai
	Jyoti Devaramani & Lena Elizabeth	Coorg Institute of Dental Sciences
	Hemantha Siva Sai P	Government Dental College and Research Institute, Ballari

CASE REPORT		
1st	Nandhini M	Sri Ramachandra Faculty of Dental Sciences, Chennai
2nd	Aparajita Dolkhey & Bhimi Reddy Tanmayee	Sri Ramachandra Faculty of Dental Sciences, Chennai
	Mahashalini Anandhan	Mahe Institute of Dental Sciences

TECHNICAL NOTE		
1st	Adelyn Jerusha F & Adrija N	Sri Ramachandra Faculty of Dental Sciences, Chennai
2nd	Aamina Hyder & Tanya Jain	Sri Ramachandra Faculty of Dental Sciences, Chennai

OTHER EVENTS

TABLE CLINIC (Virtual Event)

Prize	Name of the Participant	College
1st	Devin Hendrawan	Universitas Indonesia
	Priskilla Gita Pitaloka	
	Fathrani Lutfhi Hafizah	
	Ishwarya S	Sri Ramachandra Dental College, Chennai
	Janani S	
	Nandhini N	
2nd	Mariya M Jos	Coorg Institute of Dental Sciences, Virajpet
3rd	Samiksha Ghagre	VSPM Dental college and Research Center, Nagpur
	Apoorva Nilay Dopte	
	Kshitija Dhoke	
	Parnika Misra	Coorg Institute of Dental Sciences, Virajpet
	Harshakeerthi D	
	Channabasava R H	

GRAY'S ANATOMY (Offline Event)

Prize	Name of the Participant	College
1st	Chethan. S	Coorg Institute of Dental Sciences, Virajpet
2nd	Padma Swetha. S	Coorg Institute of Dental Sciences, Virajpet
	Sushma Shree	
3rd	Sitara Subbiah	Coorg Institute of Dental Sciences, Virajpet

DR SHERLOCK (Virtual Event)

Prize	Name of the Participant	College
1st	Theertha Devaiah	Coorg Institute of Dental Sciences, Virajpet
	Padma Swetha	
	Mahalakshmi	
2nd	Ananya Sharma	Subharti Dental College and Hospital
	Tanishqa Bhatra	
	Tanvee Nagpal	
3rd	Dimas Aditya	Universitas Indonesia, Jakarta
	Devin Hendrawan	
	Vincent Gerald Jr	

PICTIONARY (Offline Event)

Prize	Name of the Participant	College
1st	Sitara	Coorg Institute of Dental Sciences, Virajpet
	Samantha	
	Monica	
	Tarini	
	Pavithra	
2nd	Mahalakshmi	Coorg Institute of Dental Sciences, Virajpet
	Kavanashree	
	Haripriya	
	Richa	
	Theertha Devaiah	
3rd	Adhila	Coorg Institute of Dental Sciences, Virajpet
	Yadeeda	
	Shamma	
	Neha	
	Sithara	

QUIZ (Offline Event)

Prize	Name of the Participant	College
1st	Shreya Santhosh	Coorg Institute of Dental Sciences, Virajpet
	Shilu Sabu	
	Padma Swetha	
2nd	Sreelakshmi C C	Coorg Institute of Dental Sciences, Virajpet
	Pavithra	
	Tarini	
3rd	Parnika	Coorg Institute of Dental Sciences, Virajpet
	Nabha	
	Swetha	

COLLAGE (Virtual Event)

Prize	Name of the Participant	College
1st	Neha Chowdary Koganti	Government Dental College and Research Institute, Bellary
	Rishitha	
	Spurthi	
	Brundha	
	Monisha	
2nd	Vaishali Naik	Sri Siddhartha Dental College, Tumkur
	Shobana Marimuttu	
	T.P Sowmya	
	Sai Akshita	
	Vishalakshi	
3rd	Shrusti Nugganatti	PMNM Dental College and Hospital, Bagalkot
	Sakshi M Osval	
	Soumya N Sajjan	
	Sharvari Umrani	
	Nandini Govannavar	
	Theertha Devaiah	Coorg Institute of Dental Sciences, Virajpet
	Kavana	
	Mahalakshmi	
	Haripriya	
	Richa	

PEDAGOGY (Offline Event)

Prize	Name of the Participant	College
1st	Niharika T P	Coorg Institute of Dental Sciences, Virajpet
2nd	Pratheeksha Kalappa	Coorg Institute of Dental Sciences, Virajpet
3rd	Shabnam Shirin	Coorg Institute of Dental Sciences, Virajpet
	David Paul	

SPELLATHON (Virtual Events)

Prize	Name of the Participant	College
1st	Aishwarya A Nair	Sri Ramakrishna Dental College And Hospital, Coimbatore
	Annie Sheirly	
	Priyanka.G	
	Harini Chakrika.M	
2nd	Tanishqa Bhatra	Subharthi Dental College, Meerut
	Ananya Sharma	
	Tapasya Bhardwaj	
3rd	Shreya Ban	GDC, Bellary
	Jeevan A.S	
	Palak Kaul	

HEALTH AWARENESS DOCUMENTARY (Virtual Events)

Prize	Name of the Participant	College
1st	Saveri	SGT, Gurgaon
	Shallry	
	Tanisha	
	Sneha	
	Digvijay	
2nd	Abida Sadaf	A B Shetty Memorial Institute of Dental Sciences
	Aditi Agarwal	
	Amritha Murali	
	Aiswarya K	
	Albin K Mathew	
	Niharika T P	Coorg Institute of Dental Sciences, Virajpet
	Sanjana S	
	Uzma Fathima	
	Reiyna G Nair	
	Ananya KY	
3rd	Kabilesh	MS Ramaiah Dental College
	Adithya	
	Sanjana	
	Malavika Manu	VSDC, Bangalore

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