

# Journal of Multidisciplinary Dental Research

ISSN 2277-3525

Special Edition 2019

## SPECIAL EDITION QUEST - 2019



A publication of the International Dental Educationists' Association (IDEA)

# JOURNAL OF MULTI-DISCIPLINARY RESEARCH

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**T**he aim of this special edition of JMDR is to encourage the future generation of leaders in Dentistry to hone their skills in the art and science of Dentistry and to provide them a forum to face the future challenges of dental education and research in a world free of borders.

The JMDR is an official publication of the International Dental Educationists Association. IDEA is an apolitical think-tank of likeminded Dental Research Scientists and Health Educationists spread around the globe. IDEA sponsors a unique annual undergraduate student symposium in the first week of March where undergraduate students from about 25 nations showcase research study designs in original research, innovation, descriptive research, reviews and experimental research including level one drug trials. This also serves as an excellent networking event for the student delegates.

This special edition of JMDR is dedicated to the young international dentist; to provide them with a forum to foster critical research appraisal and to provide a bridge between theory, basic science and dental research.

I am proud to present to the reader the research projects of our young future dentists which were presented at Quest 2019.

Quest 2020 is expected to attract more than 1000 student delegates from India, Sri Lanka, Hong Kong, Japan, Hungary, Scandinavia, Egypt, Thailand and Malaysia. I do hope that this special edition will encourage the student fraternity to better their scientific temper and stimulate original research.

**Dr. Sunil Muddaiah**  
Chairman, Editorial Board

## Mr. K. M. KUSHALAPPA

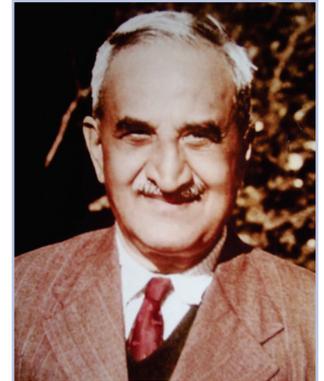
**Mr. K. M. Kushalappa** was a pious, generous and selfless soul.

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.



## Mrs. Ponamma Kushalappa

Mrs. Ponamma 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.





**Dr L P Samaranayake**

Professor Emeritus & Immediate Past Dean of Dentistry,  
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Professor, College of Dental Medicine  
University of Sharjah, UAE



**Dr Raghunath Puttaiah BDS, MPH**

Tenured Associate Professor  
Department of Diagnostic Sciences  
A&M College of Dentistry  
Dallas, Texas, USA



**Dr Dhirawat Jotikasthira**

Professor, Department of Orthodontics and Pediatric Dentistry  
Chiang Mai University, Thailand  
President –elect (2018-2020)  
Thai Association of Orthodontists (ThaAO)



**Dr Satoshi Nagasaka BA, DDS, PhD**

Director/Professor, Center for International Exchange  
Director of TU Refugee Project Team  
Tsurumi University (TU), Japan



**Dr Norashikin Binti Abu Bakar**

Lecturer & Paediatric Dentist  
Faculty of Dentistry  
Universiti Teknologi Mara , Malaysia



**Dr Mochamad Fahlevi Rizal**

Professor, Pediatric Dentistry  
Universitas Indonesia  
Jakarta



**Dr P. P. Sianita Kurniawan**

Professor, Dept. of Orthodontics  
Faculty of Dentistry, Moestopo University  
Jakarta, Indonesia



**Dr Ilham Binti Wan Mokhtar**

Head, Special Child Care Centre  
UiTM University, Malaysia

# INNOVATIONS IN DENTISTRY

Sl. No	Code	Title	Name	College	Pg. No.
	ID01	Gravity Light in Dentistry	1. Kavyashree M 2. Betty K. Joy	CIDS	7
	ID02	A Comparative Evaluation of Sealability of Nano-Silver Modified and Graphite Modified Endodontic Sealer – An In Vitro Study	Chethan Kumar S	CIDS	7
	ID03	Solar Powered Laser	1. Chandana Menon 2. Josna George 3. Prarthana Sudeep	CIDS	8
	ID04	Needle Prick – Free Gloves	1. Shahla Nazreen 2. Ayshath Hiba Moideen 3. Anjitha VC	CIDS	8
	ID05	Ozone – The Ultimate Disinfectant	1. Padma Shwetha S 2. Indra A	CIDS	9
	ID06	Ergonomics: Elevating Dentistry to Excellence	N. Theertha Devaiah	CIDS	9



## Gravity Powered dental chair

**Students** : M. Kavyashree and Betty K. Joy  
**Supervisor** : Dr. Shashidara R  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### Abstract:

Light is very necessary in dental procedures. In rural areas there is lack of electricity and light source. Its difficult to perform any procedure without light.

In this project we are trying to introduce GRAVITY LIGHT in the dental chair and we are also trying to run the dental chair by using gravitational energy.

The reason for generating power using gravity is that it is available all over the earth and renewable source of energy. In this project ,the gravitational energy is converted into electric energy which helps in production of light by using synchronous motor.

GRAVITY LIGHT is a gravity-powered lamp designed by the company Deciwatt for use in developing nations, as replacement for kerosene lamps. It uses a bag filled with rocks or earth, attached to a cord, which slowly descends similar to the weight driven in a cuckoo clock. This action powers the light for up to 20-30 minutes.



## A Comparative Evaluation of Sealability of Nano-silver modified and Graphite modified Endodontic Sealer-An in vitro study

**Students** : Chethan Kumar S.  
**Supervisor** : Dr. K.C. Ponnappa & Dr. Neha  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### Abstract:

**Introduction:** Favorable apical seal of root filling materials is a crucial factor for a successful endodontic treatment.

**Aim:** The aim of this in vitro study is to compare the dye micro leakage of Nano-silver Modified ZOE sealer and Graphite Modified ZOE sealer with standardized ZOE sealer.

**Materials and Methods:** Fourteen extracted single-rooted teeth were collected and were cleansed as per OSHA norms and randomly divided into three experimental groups of 4 each, Group 1 for standard ZOE sealer, Group 2 for Nano-silver modified ZOE sealer, Group 3 for Graphite modified ZOE sealer and 1 positive and negative control each. They were decoronated at the CEJ, working length determined and Cleaning and shaping was done. Obturation was done on three groups with respective sealers. After 24 hours, all the samples were coated with varnish and immersed in methylene blue dye for 24 hours. The teeth were then longitudinally sectioned and dye leakage was assessed using stereomicroscope. The statistical analysis was done.

**Results:** To be Tabulated.

## Solar Powered Laser

**Students** : Chandana Menon, Josna George, Prarthana Sudeep and Reetu Ben Joseph  
**Supervisor** : Dr Sharath Uthappa  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### Abstract:

LASER (or) Light Amplification by Stimulated Emission of Radiation is a device that emits light through a process of optical amplification based on the stimulated emission of electromagnetic radiation.

The laser has many applications in dentistry. It can be used both on hard and soft tissues.

In hard tissues, it is used for caries prevention, bleaching, restorative removal and curing, cavity preparation, dentinal hypersensitivity, growth modulation and other purposes.

Soft tissue application includes wound healing, removal of hyper plastic tissue to uncover the impacted or partially erupted tooth, photo dynamic therapy for malignancies, photo stimulation of herpetic lesions. Use of lasers has proved to be an effective tool to increase efficiency, specificity, ease, cost and comfort in dental treatment.

The new innovation brought into the field of conventional lasers in dentistry is solar powered and camera oriented diode laser which is erbium based. It eliminates the use of water jet spray seen in normal dental airtors and the use of local anesthesia during operative procedures.

*The advantages are –*

- Faster
- Efficient
- Accurate procedure
- Easy to handle
- Mobile
- Cost effective

## Needleprick- Free Gloves

**Students** : Shahla Nazreen, Ayshath Hiba Moideen and Anjitha VC  
**Supervisor** : Dr Shashidara R  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### Abstract:

Needlestick injuries are known to occur frequently in health care settings and can be serious. Eventhough universal guidelines have decreased the risk of needlestick injuries it continues to afflict the health care professionals in much alarming rate, since needleprick cannot be prevented completely.

So our aim is to design a glove with a feasible material which would prevent needleprick at the same time which would be biocompatible with the skin. If our aim is accomplished we would prevent needleprick and thus parenteral diseases like HIV, Viral Hepatitis etc.

## Ozone-the Ultimate Disinfectant

**Students** : Padma Swetha. S and Indra. A  
**Supervisor** : Dr. Shashidara. R  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### Abstract:

Ozone is a gas at ambient temperatures and pressures with a strong odor. Ozone can be produced as a gas from oxygen in air, or concentrated oxygen. Ozone is an oxidant. Ozone is the second most powerful oxidant in the world and can be used to destroy bacteria, viruses, and odors. Ozone comes into contact with cellwall, a reaction called oxidative burst occurs which injures the cellwall of bacteria by creating a tiny hole. The bacterium begins to lose its shape while ozone molecules continue creating holes in the cellwall. The bacterial wall can no longer maintain its shape and the cell dies. Based on this antibacterial property of ozone, it can be used to sterilize root canals during biomechanical preparation. There is already a ozone delivering device in the market called Healozone, which is cost ineffective.

So, we hereby, is innovating a cheaper ozone delivering device to sterilize root canals and also comparing the sterilizing action of ozone with chlorhexidine.

## Ergonomics: Elevating Dentistry To Excellence

**Students** : N. Theertha Devaiah  
**Supervisor** : Dr. Shashidara. R  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### Abstract:

The purpose of this study is to analyse and assess knowledge and application of the CONCEPT OF ERGONOMICS among dental students; so that a dental practitioner can have general awareness of the concept of ergonomics as well as its risk factors.

The successful application of ergonomics assures high efficiency and productivity; avoidance of illness and injuries; and increased satisfaction among professionals.

But on the other hand, unsuccessful/ absent application can lead to musculoskeletal disorders over a period of time.

This study involves the use of particular software application relying to the concept of ergonomics. The software aids in analysing the posture of a particular subject, and further notifies the inappropriate, inconvenient or awkward positions followed/ practiced if any.

Thus this study helps in analysing and ultimately improving the work efficiency and productivity among dental professionals.



# ORIGINAL RESEARCH



## ABSTRACTS

Sl. No	Code	Title	Name	College	Pg. No.
	ORP01	Perception Tolerance of Students At Faculty of Dentistry, Prof.Dr.Moestopo University On Convex Facial Profile	Hana Cynthia Maudina	University of Prof. Dr. Moestopo (Beragama), Indonesia.	15
	ORP02	Ethical Perspectives of Dentists On Thalaikoothal - A Form of Euthanasia in The Name of Custom.	Pratheek Shetty	AJ Institute of Dental Sciences	16
	ORP03	New Era in Orthodontics	1. Ashovardhini P S 2. Sweta Nahar	SDM College of Dental Sciences and Hospital Dharwad	17
	ORP04	Quest For Formalin Substitute - A Natural Approach	1. K Sai Kalyan 2. Karthik Prabhulinga Angadi	Ramaiah University of Applied Sciences	
	ORP05	A Novel Technique For Fabricating A Hollow Maxillary Obturator Using Brown Sugar- An Invitro Study	Aiswarya Premanand	Ramaiah University of Applied Sciences	
	ORP06	Estimation of serum copper and zinc levels in oral submucous fibrosis: An absorption spectroscopy study	1. Nidhi Santhosh 2. Nida Abid	Ramaiah University of Applied Sciences	17
	ORP07	Troubleshooting in Immuno histochemistry With Their Remedies	1. Priya Biradar 2. Neha S Rathod	Ramaiah University of Applied Sciences	18
	ORP08	Toothkart	1. Ignatius Fernandes 2. Mythri P	SDM College of Dental Sciences and Hospital Dharwad	18
	ORP09	Ergonomics : Elevating Dentistry to excellence	N. Theertha Devaiah	CIDS	19
	ORP10	Raman Microspectrometry: An Alternative Method of Age Estimation from Dentin and Cementum	1. Afifa Shafi 2. Sushma	Ramaiah University of Applied Sciences	19
	ORP11	Comparative Evaluation of The Microleakage in Class 2 Cavities Restored With Four Different Restorative Study: An In-Vitro Study	1. Tanya Chondamma 2. Apoorva D	CIDS	20
	ORP12	Comaparative Cheilosopic Study In Gender Identification	1. Kanika Singh 2. Jiya Mukhopadhyay	SJM Dental College & Hospital, Chitradurga	20
	ORP13	Comparison and Evaluation of Mitotic Figures In Oral Epithelial Dysplasia Using Crystal Violet and Feulgen Stain	1. Gayathri S Uchil 2. Archana Nayaka AM	Ramaiah University of Applied Sciences	21
	ORP14	Effects of Music Listening On Physiological Parameters In Patients Undergoing Now Surgical Periodontal Therapy	1. Ananya KY 2. Sanjana S	CIDS	21
	ORP15	Thread Seal Tape : For Today's Dentistry	Aishwarya Chavan	SDM College of Dental Sciences and Hospital Dharwad	22
	ORP16	Cocktail of Periodic Acid Schiff and Papanicolaou (Pas-Pap) - A Novel Staining Technique For The Identification of Leukemic Eosinophils	Nanditha Nagarajan	Ramaiah University of Applied Sciences	22
	ORP17	Knowledge, Attitude and Practice of Hand Hygiene Among The Dental Students of Coorg Institute of Dental Sciences, Virajpet	Sadiya Afrin	CIDS	23

Sl. No	Code	Title	Name	College	Pg. No.
	ORP18	Gravity light in dentistry	Betty Joy Kavya Shree	CIDS	
	ORP19	Thread Seal Tape : For Today's Dentistry	Anusha Katageri	SDM College of Dental Sciences and Hospital Dharwad	
	ORP20	Assessment of Ph and Pathogenes In Smokeless Tobacco Products Available In Mangalore City, Karnataka, India.	Dewan Chengappa B D Shravya M	AJ Institute of Dental Sciences	23
	ORP21	Evaluation of Serum Lipids and Lipoproteins As Prognosticators In Leukoplakia	1. Heba Azhar 2. Nutan Mishra	Ramaiah University of Applied Sciences	24
	ORP22	Age Estimation Using Radiographs	Reiyna G Nair	CIDS	24
	ORP23	Lawsonia Inermis (Henna)– An Innovative Natural Substitute For Eosin Stain	1. Gowthami.B 2. Upasana Das	Ramaiah University of Applied Sciences	25
	ORP24	Prevalence of Traumatic Injury In 12-13 Years In Virajpet	Tony Joseph	CIDS	25
	ORP25	Comparison of Staining Efficacy Between Turmeric and Eosin: A Histological Study	1. Neelanshi Kulshrestha 2. Kumari Bhavya	Ramaiah University of Applied Sciences	26
	ORP26	Impact of tobacco use on oral health and total antioxidant capacity among traffic and crime law enforcement personnel of India	Pooja Vinod	CIDS	26
	ORP27	Potency of Expired Antibiotics	1. Shahla Nazreen 2. Ayshath Hiba Moideen	CIDS	27
	ORP28	Practice of Self-Medication In Symptomatic Oral Mucosal Lesions Among Patients Visiting A Dental Hospital In South Coorg – A Cross Sectional Study	Sushmitha P	CIDS	27
	ORP29	Comparative effects of various antibiotics on bacteria affecting the oral cavity	K. M. Kushalappa Jayalakshmi J.	CIDS	28
	ORP30	Dentelf-I-E-D	N. Pratheeksha Kalappa	CIDS	28
	ORP31	A tooth mirror advancing towards digitalization	Bhagya Lakshmi K.	Ramaiah University of Applied Sciences	29
	ORP32	Effectiveness of an interactive educational method to teach tobacco cessation counseling in dental school	Prajwal G.	CIDS	30
	ORP33	Effect of Dietary Beverages on Dental Hard Tissues – A Tri-Microscopic Study	1. Shivani R M 2. Priyanka Yadav	Ramaiah University of Applied Sciences	31

## Perception Tolerance of Students At Faculty of Dentistry, Prof. Dr. Moestopo University On Convex Facial Profile

Student : Hana Cynthia Maudina

College/ University : Faculty of Dentistry, Prof. DR. Moestopo University



### ABSTRACT

**Background:** The purpose of orthodontic treatment, in addition to functional consideration of the teeth, is an aesthetic aspect, because good functional correction without accompanying aesthetic improvements can reduce patient satisfaction. One of the aesthetic aspects is facial profile. Patients with class II malocclusion often come for orthodontic treatment because they are not satisfied with their profile. However, individual perceptions of facial profiles vary depending on education, experience, thinking ability and the aesthetic concepts they have. This can be the basis for consideration of treatment plans to get results according to patient expectations

**Objective:** The purpose of this study is to determine the degree of convexity of facial profiles of patients with class II malocclusion who can be tolerated by students at Faculty of Dentistry, Prof. DR. Moestopo University.

**Materials and methods:** The subjects were 67 students consisting of 35 students in academic program and 32 students in the professional program at Faculty of Dentistry, Prof. DR. Moestopo University who had participated in this cross-sectional study. All of these students were asked to assess six variations of facial profile convexity, A1 to A5, using a visual analog scale and giving reasons. Furthermore, statistical tests are conducted to obtain the mean and standard deviation to rank the results obtained.

**Results:** The study showed that all participants chose variations of convexity A 1 as the most unattractive facial profiles and variations of convexity A 5 as the most attractive facial profiles. The angle of the A5 profile's convexity was 148°.

**Conclusion:** The facial profile with an angle of convexity 148° has an aesthetic quality that can still be tolerated by all students who participated in this study. The increase in angle of facial convexity is in line with increase in facial attractiveness and perceptions expressed by all subjects.

## Ethical Perspectives of Dentists On Thalaikoothal - A Form of Euthanasia In The Name of Custom

**Student** : Pratheek Shetty  
**Supervisor** : Dr. Vijaya Hegde  
**College/ University** : AJ Institute of Dental Sciences, Mangalore

### ABSTRACT

**INTRODUCTION:** In the South Indian State of Tamil Nadu, in certain districts a form of geronticide or involuntary euthanasia called Thalaikoothal where the elders are forced to undergo the procedure against their will in case they fall ill or are incapacitated for a reason. The elderly person is given an extensive oil bath early in the morning and subsequently made to drink glasses of tender coconut water which results in renal failure, high fever, fits, and death within a day or two. This technique may also involve a head massage with cold water, which may lower body temperature sufficiently to cause heart failure. Alternative methods involve force feeding cow's milk while plugging the nose, causing breathing difficulties or use of poisons.

**BACKGROUND:** Thalaikoothal is an involuntary euthanasia in a current debate in the country which is practiced in South Indian State of Tamil Nadu, in certain districts.

**OBJECTIVES:** The objective of the study was to assess the ethical perspective of Dentists and Dental students about the practice of involuntary euthanasia called Thalaikoothal.

**MATERIALS AND METHODS:** A cross sectional questionnaire based study was conducted among Dentists and Dental students. Informed consent was obtained. An online survey form was used to collect data. A close ended questionnaire using Likert scale containing questions assessed the ethical perception regarding Thalaikoothal. Descriptive data was obtained which were statistically analysed.

**RESULTS:** The result of the study showed that the professionals were against the act as it is violating all the principles of ethics.

**CONCLUSION:** Right to life is a natural right and right to die is not a natural right and no one has the right to finish their life in unnatural way. Thus the practice of Thalaikoothal is illegal and unethical.

## Invisalign-New Era in Orthodontics

**Students** : Ashovardhini P S and Sweta Nahar  
**Supervisor** :  
**College/ University** : SDM College of Dental Sciences and Hospital, Dharwad



**Abstract:** Today's technology offers man pleasing ways to improve the look and feel of your smile. Gone are the days where orthodontic treatments are painful and very inconvenient. The latest developments afford easy methods to straighten teeth. Among these improvements, include the top flight innovation known as Invisalign.

Invisalign can enhance your smile. By gradually moving the misaligned teeth to its ideal position, this state-of-the-art product can improve the look, feel, and function of your smile. Using clear, invisible plastic, this teeth-straightening treatment is the most sought after solution for many.

Forget traditional aligners. Leave your plan to use bulky metal braces. Stop thinking about uncomfortable wires. When it comes to enhancing the appearance of your teeth, look to Invisalign to straighten and beautify your smile. It is the best orthodontic treatment that ever happened.

## Estimation of serum copper and zinc levels in oral submucous fibrosis: An atomic absorption spectroscopic study.

**Students** : Nidhi Santhosh, Nida Abid  
**Supervisor** : Dr. Dominic Ausustine  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru



### ABSTRACT

**Background and objectives:** Biochemical derangements of microelements although reported in oral cancer is poorly understood in oral submucous fibrosis (OSMF). The present study was carried out to estimate and compare the serum copper and zinc levels among different histopathological stages of OSMF with that of healthy controls.

**Materials and methods:** Thirty histopathologically diagnosed cases of OSMF and 30 healthy controls reporting to MS Ramaiah Dental Hospital, Bengaluru, were included in the study. The histopathological staging of OSMF was done as per criteria given by Pindborg and Sirsat (1966). Blood samples were collected and the serum copper and zinc levels were estimated using atomic absorption spectroscopy.

**Results:** The mean serum copper levels showed an increasing trend from stage I to IV while zinc levels showed a decreasing trend from stage I to IV in OSMF patients.

**Conclusion:** The serum copper and zinc levels in OSMF showed a significant difference in comparison to that of controls and between the histopathological stages. These findings indicate that serum copper and zinc may have a contributory role in the etiopathogenesis of OSMF.

**Clinical relevance:** Although the role of the trace elements as etiological factors is minor, derangements noted in the serum copper and zinc levels could be correlated with diseased progression and possibly explain the transformation of OSMF into malignancy. Thus, they can be used as prognostic markers and can be of value for proactive intervention.



## Troubleshooting in Immunohistochemistry with their Remedies

**Students** : Priya Biradar and Neha S Rathod  
**Supervisor** :  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### Abstract:

**Aim:** The aim of the present study was to review the importance of various steps involved in immunohistochemistry (IHC) and highlight the troubleshootings encountered at each phase of the procedure with possible remedies.

**Introduction:** Immunohistochemistry is often employed to explore tissue/cell antigens that vary from amino acids, proteins, infectious agents, and specific cellular group in health and disease. It is a vital tool for scientific research and also an adjunct technique for the exclusion of differential diagnosis that may be missed by routine stains. Although IHC is well practiced, there are several hurdles that could be encountered during each step of immunohistochemical procedure, i.e., preparation of slide to incubation with antibodies, interpretation and quantification of the desired expression that finally influences the staining of tissue.

**Clinical significance:** An accurate and proper diagnosis of a pathology is key for the successful treatment by a clinician/ surgeon, as IHC acts as an adjunct in the diagnosis of challenging lesions. Hence, it is absolute necessary for a pathologist to have a thorough knowledge of immunohistochemical procedure and remedies to overcome the hurdles encountered during the procedure to obtain an ideal IHC-stained slide for diagnosis.

## Toothkart

**Students** : Ignatius Fernandes and Mythri P  
**Supervisor** :  
**College/University** : SDM College of Dental Sciences and Hospital, Dharwad



**Abstract :** The success of re-implantation of exarticulated tooth relies primarily on the medium of transportation and the swiftness of which it is carried. The knowledge, the attitude and employment of proper medium of transportation and the rapidity of the transport decides the prognosis for the exarticulated tooth. The aim of this presentation is to enumerate the various transit medium of transportation for the exarticulated tooth and the same needs to be brought to the knowledge of the lay person and create awareness on the medium and method of preservation and restoration. Though this knowledge is commonplace in the dental professional, the same may not be the case with the common person. Thus the itemization and specification of the medium of transit of the exarticulated tooth based on the availability of natural and synthetic products at the site of the trauma is essential. The success of re-implantation of the exarticulated tooth is determined by the medium and the immediate or swift treatment of the exarticulated tooth by a dental professional. Owing to the common finding of the medium of transit of the avulsed tooth, it is definite that a majority can be re-implanted with success thus helping the dental professional to bring back the smile of the patient.

## Ergonomics: Elevating Dentistry To Excellence

**Student** : N. Theertha Devaiah  
**Supervisor** : Dr. Shashidara. R & Dr. Archana Krishnan  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



**Abstract:** The purpose of this study is to analyse and assess knowledge and application of the CONCEPT OF ERGONOMICS among dental students; so that a dental practitioner can have general awareness of the concept of ergonomics as well as its risk factors.

The successful application of ergonomics assures high efficiency and productivity; avoidance of illness and injuries; and increased satisfaction among professionals.

But on the other hand, unsuccessful/ absent application can lead to musculoskeletal disorders over a period of time.

Thus, this study helps in analysing ergonomic practices being carried out among dental students (undergraduates and postgraduates) and rectify the same, in order to prevent musculoskeletal disorders and improve the work efficiency among dental professionals.

## Raman Microspectrometry: An Alternative Method of Age Estimation from Dentin and Cementum

**Students** : Afifa Shafi S and Sushma MV  
**Supervisor** :  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### ABSTRACT :

**Introduction :** Raman spectroscopy is simple, quick, sensitive and non-destructive form of tissue examination that provides vital data about the structure, molecular composition and interactions within a sample. The human hard tissues like teeth and bone are able to resist decay for long even after other tissues are lost, thus have valuable forensic importance.

**Aim :** To ascertain the known age of the teeth by analyzing dentin and cementum using Raman microspectrometry and assess the accuracy of age estimation by comparison of dentin with cementum.

**Materials and Methods :** The sound permanent extracted tooth specimens (40) of age ranging between 12-74 years were collected and sectioned longitudinally and different dentinal and cemental areas were analyzed by Raman microspectrometry. The spectra of dentin and cementum were used as predictors of age estimation. For each sample, ratio were obtained for dentin and cementum areas, and Pearson's correlation coefficient was calculated. Ratios, which had a correlation coefficient greater than 0.40 were used for further statistical analysis.

**Results :** A significant correlation was observed between the actual chronological age and predicted age of the individual using dentinal areas of the tooth. A closest to the estimated result was achieved, with an error of three years between predicted and actual chronological age.

**Conclusion :** Raman microspectrometry may be considered as an alternative to the conventional method of age estimation and contribute to the identification of individuals.

## Comparative evaluation of the microleakage in Class II cavities restored with four different restorative materials- In-vitro study

**Students** : Tanya Chondamma and Apoorva Dillikumar  
**Supervisor** : Dr. K.C. Ponnappa and Dr. Salin Nanjappa  
**College/university** : Coorg Institute of Dental Science, Virajpet



### ABSTRACT:

**Introduction:** The advent of the esthetic era and advances in adhesive technology saw the emergence of restorative materials that can preserve the health of the pulp and maintain the tight seal between the tooth and the restorative material. One of the outcomes of these researches is a new restorative material Cention-N.

**Aim:** To evaluate and compare the marginal microleakage of CENTION-N with Silver Amalgam, GIC and Light cured Composite Resin using Stereo microscopy.

**Methodology:** Fifty freshly extracted human premolars were collected and divided into two groups with 40 specimens under the experimental group and 10 specimens under the control group. Teeth were cleansed as per OSHA norms. Standardized mesio-occlusal [MO] and disto-occlusal [DO] cavities were prepared on each tooth. The cavities were randomly divided into 4 sub-groups. Sub-group I: restored with Cention-N, sub-group II: restored with Amalgam, sub-group III restored with Light-cured composite resins and sub-group IV restored with GIC. The specimens were thermocycled and a layer of nail varnish was applied on the tooth surface. The samples were then immersed in Rhodamine dye solution for 24 hours, sectioned and observed under stereo microscope (x10).

**Statistical Analysis:** The statistical analysis was done using Chi-Square test.

**Results:** The control group III showed minimal leakage whereas Group IV showed complete leakage. Microleakage at the gingival margin was significantly lesser in Cention-N when compared with Silver Amalgam and GIC. When Cention-N was compared with Resin Composites, the results were not significant.

**Conclusion:** Hence Cention-N can be used as a posterior restorative material for class II cavities.

## Comparative Cheiloscopy Study In Gender Identification

**Students** : Kanika Singh and Jiya Mukhopadhyay  
**Supervisor** :  
**College/University** : SJM Dental College & Hospital, Chitradurga



**Abstract :** Forensic odontology is the area of dentistry concerned with the examination, evaluation and presentation of dental evidence in criminal or civil legal procedures in the interest of justice. Cheiloscopy is a forensic investigation technique that deals with the identification of human based on lip traces (wrinkles and grooves visible on the lips) and these grooves are heritable and are supposed to be individualistic. However, as far as the legal matters Indian Judicial system are concerned, this technique needs to be used more frequently in routine civil and criminal litigations. Hence this study was conducted on lip patterns for gender identification.

## Comparison and Evaluation of Mitotic figures in Oral Epithelial Dysplasia using Crystal Violet and Feulgen stain

**Students** : Gayathri S Uchil and Archana Nayaka A M  
**Supervisor** :  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### ABSTRACT:

**Introduction:** Routine staining procedures often pose a problem in differentiating a mitotic cell from an apoptotic cell, deteriorating the reliability of histology grading. Although various new methods have been recommended for identifying mitotic figures (MFs) in tissues, the time factor and cost makes them less feasible. Thus, an attempt was made to evaluate the efficacy of crystal violet and Feulgen reaction in identifying MFs and also to see for any variation in the number of MFs in various grades of Epithelial dysplasia.

**Objectives:** 1. Using crystal violet and Feulgen stain in the identification and counting of MFs on diagnosed cases of epithelial dysplasia and thereby to evaluate their efficacy.

2. To evaluate the variation in the number of MFs in various grades of epithelial dysplasia.

**Materials and methods:** The study sample includes retrieval of 30 formalin fixed paraffin embedded tissue sections diagnosed for different grades of epithelial dysplasia (WHO grading system, 2005) from the archives, Department of Oral Pathology, MSRDC, Bengaluru. Ten tissue sections each of mild, moderate and severe epithelial dysplasia were stained with H&E, Feulgen and 1% crystal violet stains and the number of MFs were counted. Five cases of cervical carcinoma were taken as control. Stained sections were compared, and data obtained was statistically analyzed using the Kruskal-Wallis test.

**Results:** A significant increase in the number of MFs ( $p = 0.02$ ) was observed in Feulgen stained sections as compared to H&E stain.

**Conclusion and Clinical relevance:** Feulgen stain can be considered as a simple, reliable, cost-effective and reproducible method of staining MFs.

## Effects of Music On Physiological Parameters In Patients Undergoing Surgical Periodontal Treatment

**Students** : Ananya.K.Y and Sanjana.S  
**Supervisor** : Dr. Saumiya  
**College/Univeristy** : Coorg Institute of Dental Sciences, Virajpet



### Abstract :

**Introduction:** Surgery and anesthesia provoke anxiety in almost all the patients, causing increased sympathetic activity leading to increase in HR, BP. Music is one of most practical and easy to use application to reduce anxiety.

**Methodology:** A comparative study of 5 patients who are exposed to arbitrary forms of music before, during and after the treatment and 5 patients were blinded and were not informed that the music is part of study. Anxiety level was checked, along with BP, pulse.

**Results:** There was a statistically significant decrease in the HR and BP in patients who were under musical therapy compared to patients without musical therapy.

**Conclusion:** Music is a non invasive and low cost intervention that can be easily implemented in pre operative settings.



## Thread Seal Tape: For Today's Dentistry

**Student** : Aishwarya Chavan and Anusha Katageri  
**Supervisor** :  
**College/University** : SDM College of Dental Sciences and Hospital, Dharwad



**Abstract:** Dental procedures are ever developing, reason for this can be attributed to newer materials with better handling properties and our ability to manipulate them more effectively. As a result various techniques and materials are evolving to aid in obtaining predictable results in the field of dentistry. One such material being Polytetrafluoroethylene, which is a synthetic fluropolymer, best known brand of PTFE is Teflon.

**Aim:** This presentation aims to review the use of Teflon tape(plumbers tape)to assist in various dental procedures, when compared to other available materials.

**Methodology:** The paper uses case studies, to analyse the effectiveness of usage of Teflon tape in various dental procedures.

**Findings:** Teflon shows various properties that enhance the quality of dental procedures. It is hydrophobic, non sticky , thin and stretchy material which is highly resistant to high temperature and it has low co-efficient of friction with excellent dielectric and insulating properties.

**Conclusion:** The paper presentation brings to focus the importance of highly versatile, readily available, simple, cost effective material-Teflon tape in dentistry, further expanding the clinicians armamentarium.

## Cocktail of Periodic Acid Schiff and Papanicolaou (pas-pap) - A Novel Staining Technique For The Identification of Leukemic Eosinophils

**Student** : Nanditha Nagarajan  
**Supervisor** : Dr. Dominic Ausustine  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru



### ABSTRACT :

**Background:** Tissue eosinophilia may be caused due to reactive, neoplastic or idiopathic reasons. Reactive eosinophils in allergic and inflammatory conditions are transient and recruited from the circulation in response to various stimuli, whereas neoplastic eosinophils of leukemias and haematological malignancies, are involved in the pathogenesis of the disease. The differentiation of reactive from neoplastic eosinophils has a serious implication on the treatment and prognosis of diseases. However, both these types of eosinophils display variation in morphology and staining characteristics in routine histopathology leading to a diagnostic dilemma.

**Aim:** To evaluate the efficacy of special stains for the demonstration of eosinophils in normal/reactive lesions and leukemias.

**Materials and methods:** A retrospective study comprising of 20 histologically diagnosed cases each of reactive oral lesions and leukemias were obtained from institutional archives. These tissue sections were subjected to staining with routine and special stains – Carbol chromotrope, Congo red, Leishman's stain, PAS-PAP and Periodic acid Schiff (PAS). Statistical analysis was done using Pearson's Chi-square test to compare the various parameters in evaluation of the staining efficacy. Results: Carbol chromotrope and Congo red staining showed increased staining efficacy in normal/reactive eosinophils while Periodic Acid Schiff -Papanicolaou (PAS-PAP) followed by Periodic Acid Schiff (PAS) and Leishman's stain showed enhanced features like homogeneity, specificity, increased staining intensity, enhanced nuclear and cytoplasmic details in Leukemic eosinophils.

**Conclusion:** Combined PAS-PAP is a novel and cost-effective staining technique in differentiating reactive and leukemic eosinophils. It is significant in recognizing leukemic eosinophils of routine biopsies and alerts the clinician to rule out any underlying malignancies.

## Knowledge, Attitude & Practice of Hand Hygiene Among The Dental Students of Coorg Institute of Dental Sciences, Virajpet.

**Student** : Sadiya Afrin  
**Supervisor** : Dr. S. Vinod Thangaswamy  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### Abstract:

**Introduction:** Hands are known to be the reservoir of bacteria & are implicated in bacterial cross-transmission which enhances nosocomial infection. Hand washing is considered the first mean to prevent nosocomial infection with authentic efficiency.

**Aims & Objective:** Aim of this study is to assess the knowledge, attitude & practice of hand hygiene among the dental students of Coorg Institute of Dental Sciences, Virajpet.

**Methodology:** Two hundred students were randomly selected to answer the self administered questionnaire on the awareness of hand hygiene. All students voluntarily participated in the survey. The questionnaire collected data on knowledge, attitude & practice pertaining to hand hygiene.

**Results:** Two hundred questionnaires were distributed among dental students of Coorg institute of dental sciences, Virajpet. Only one hundred & eighty were responded. Amongst which only 10% of them received formal training in hand hygiene. Only 65% of them are aware of proper hand hygiene technique. approx.80% are satisfied with their knowledge based on alcohol-based hand rub & hand hygiene.

**Conclusion:** Dental colleges should focus on constantly motivating students in practicing the correct hand washing technique & strictly adhere to monitor the hand hygiene protocol.

## Assessment of Ph and Pathogenes In Smokeless Tobacco Products Available In Mangalore City, Karnataka, India.

**Students** : Dewan Chengappa B D and Shravya M  
**Supervisor** : Dr. Pooja Shetty  
**College/University** : AJ Institute of Dental Sciences, Mangalore



### ABSTRACT :

**Introduction:** The vast majority of people use tobacco products well before age of 18 years. An estimated 1 million Indians die annually from tobacco related diseases. Increased alkalinity promotes the absorption of nicotine and facilitates its dependence. Pathogenic microorganisms may be associated with smokeless tobacco products during process of handling, processing, manufacturing, storage, or packaging which may pose serious health consequences to consumers.

**Objective:** To assess pH and presence of different pathogenic microorganisms among different smokeless tobacco products available in Mangalore city.

**Methodology:** Smokeless tobacco products commercially available in local market of Mangalore, India were examined. Two popular brands each of Ghutka, Khaini, Zarda and Unprocessed Tobacco were used for the study. An extract of each of the product was prepared and pH was determined in Triplicates at room temperature using a pH meter. One gram of each sample was transferred into 1 ml of Brain Heart Infusion broth and 1 &#956;l a 1:100 dilution of the solution was used to inoculate culture media for bacterial and fungal growth.

**Results:** The pH of smokeless tobacco extracts ranged from 5.16 to 8.89 and Genus Bacillus, Klebsiella and Aspergillus fumigates was isolated.

**Conclusions:** The alkaline pH of smokeless tobacco products leads to increased nicotine absorption and facilitate increased addiction. The pathogenic microorganisms isolated adds to the detrimental effects of tobacco on health. These findings are in support of the public health issues, where consumers, particularly the youth must be made aware of the additional health hazards from consuming tobacco.

## Evaluation of Serum Lipids and Lipoproteins as Prognosticators in Leukoplakia

**Students** : Heba Azhar and Nutan Mishra  
**Supervisor** :  
**College/Univeristy** : MS Ramaiah Dental College, Bengaluru

### Abstract:

**Background:** Despite many adjunctive techniques to monitor transformation of leukoplakia to oral squamous cell carcinoma (OSCC), the mortality rate is on the rise. Incidentally, patients diagnosed with oral potentially malignant disorders (OPMDs) and oral cancers manifest with low cholesterol levels. Given a thought, hypolipidemia may be a useful adjunctive tool as it reflects the initial changes within the neoplastic cells, thus giving a red alert in malignant transformation of leukoplakia at the earlier stage.

**Aim:** To evaluate the feasibility of serum lipid profile (HDL, LDL, VLDL) as an adjunct early marker for malignant transformation of leukoplakia to OSCC. Also, the serum cholesterol, triglycerides and lipoprotein levels between patients of leukoplakia, OSCC and age matched healthy control groups were compared.

**Materials and Methods:** The study group comprised of selected 30 individuals which included 10 each of histopathologically confirmed OSCC, leukoplakia and healthy controls. Following a written consent, venous blood was collected 12 hours post fasting and centrifuged. The serum cholesterol, triglycerides and HDL were estimated by enzymatic and colorimetric methods. The results were statistically analyzed.

**Results:** OSCC patients demonstrated significantly lower mean serum cholesterol level (151.60 mg/dl) than the control group (183.70 mg/dl). The mean cholesterol level in leukoplakia patients (173.90 mg/dl) was lower than that of control group (183.70 mg/dl) but higher than that of the OSCC group (151.60 mg/dl).

**Conclusion:** Convenience, universal availability, patient compatibility and simplicity being the merits of serum lipid profile make it a feasible adjunctive prognosticator in leukoplakic patients.

## Age Estimation Using Radiographs

**Student** : Reiyana G Nair  
**Supervisor** : Dr. Shashidara R & Dr. Archana V.K.  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT :

This paper work highlights the chronological age estimation of an individual using dental radio graphs of third molars using pulp/tooth area ratio.

## Lawsonia inermis (Henna)– An Innovative Natural Substitute for Eosin Stain

**Students** : Gowthami. B and Upasana Das  
**Supervisor** :  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### Abstract:

**Background:** Synthetic dyes are being replaced by natural dyes, as they are less toxic, biodegradable and ecofriendly. Haematoxylin and eosin are the routinely used wherein eosin is a synthetic stain. Hence Lawsonia inermis extract was made to substitute eosin.

**Aim:** The study aims to analyze the use of Lawsonia inermis extract as a possible substitute for eosin stain in paraffin-embedded oral tissues.

**Methodology:** The stain was extracted using maceration and Soxhlet method. Four micro sections of 20 paraffin-embedded normal oral mucosal tissues and Oral squamous cell carcinoma tissues were stained using the extract and counterstained to haematoxylin and studied for its staining efficacy.

**Results:** The staining efficacy of Soxhlet method was better than maceration method by 20%, however, statistically the results were insignificant. It was found that mordant reduces the staining efficacy of henna. Comparable results were found when henna stain was compared to eosin

**Conclusion:** In this era of increasing importance to ecology, henna may well prove to be an effective alternative to eosin in histological sections of normal and pathological tissues as both the stains gave comparable results. Clinical significance: Natural stain can be used in place of eosin with equal efficiency. Also henna being highly biocompatible and universally available so can be employed in high scale as in screening camps.

## Prevalence of Traumatic Injury In 12-13 Years In Virajpet

**Student** : Tony Joseph  
**Supervisor** : Dr. Ananda S.R.  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

**Background:** Childhood injuries are relatively common among physically active children. Traumatic dental injuries can be categorized as a childhood injury, whose magnitude is often found to be unparalleled as it can affect many areas in respect to the child, such as behavior, attendance in school, negative outlook from peers, etc. TDI can occur at any point in life, but are more prone to play sports, fights, etc. As children show of this age (10-13) show the height of growth and development, TDI can potentially affect growth and development, the consequences of TDI may be severe. Hence, it is important to study and analyze the prevalence of TDI in 12-13 old children.

**Aim:** To assess the prevalence of the TDI among 10-13 year old school children in virajpet, coorg and also to assess the risk factors associated with trauma such as overjet, lip coverage to malocclusion.

**Methodology:** A cross sectional study was conducted among both private and government schools in Virajpet, Karnataka. A cluster random sampling technique was adopted to select the children who have experienced TDI lip coverage, overjet and malocclusion were recorded. Lip coverage were recorded on visual inspection and are adequate if lip covers the maxillary incisors if two-thirds of the crown was exposed and visible. Overjet was recorded using CPI probe as described in 1997 who basic oral health guidelines. Malocclusion was assessed by Angles classification.

**Results:** The overall prevalence of fracture was found to be 25.5% and was more prevalent among 13 year old children. Prevalence of TDI was found to be more in males and more among the upper class of social status.

## Comparison of Staining Efficacy between Turmeric and Eosin: A Histological Study

**Students** : Neelanshi Kulshrestha and Kumari Bhavya  
**Supervisor** :  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### Abstract:

**Introduction:** Turmeric-Curcuma longa is a natural dye and has been used for various purposes since centuries. The global interest to use biodegradable materials; natural dyes/stains has evoked curiosity to explore its staining efficacy. Limited studies have been performed to determine the efficacy of turmeric as a stain for formalin fixed paraffin embedded sections that are routinely stained with Hematoxylin and Eosin (H&E) This study highlights on the comparison of turmeric extraction methods namely. Also, the staining of turmeric extracts on pathological tissues has not been tried earlier.

**Aim:** To compare two different extraction methods for turmeric namely the maceration and soxhlet, to compare efficacy of turmeric stain with synthetic eosin in normal and pathological tissues.

**Materials and Methods:** Curcuma longa was dried, powdered and extracted by maceration and soxhlet techniques. Tissue sections were stained with and without the mordant potash alum in normal and pathologic tissues. The staining intensity, efficacy of prepared turmeric stain with that of eosin were compared by appreciating the respective tissue structures stained by both the components. The statistical analysis was carried out by Chi-square test.

**Results:** Statistically significant results were observed in sections stained by maceration technique than that of the soxhlet. Comparable results were obtained in normal and pathologic tissue sections stained with H&T (TEM) with conventionally employed H&E stain.

**Conclusion:** Turmeric extract can be used as an adjunct stain to eosin, a synthetic stain.

## Impact of tobacco use on oral health and total antioxidant capacity among traffic and crime law enforcement personnel of India

**Student** : Pooja Vinod  
**Supervisor** : Dr. Bhakti Sadhu  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

**Background:** Law Enforcement Personnel have round the clock busy work schedule and irregular shifts which leads to neglecting regular diet and indulging in adverse habits. Total antioxidant capacity presents clinical significance in evaluation of antioxidant status of saliva under normal and pathological situations. The aim was to assess and compare dental caries, periodontal status and Total Antioxidant Capacity of saliva among the Traffic and Crime Personnel using tobacco in Mangalore city, India.

**Methodology:** A cross sectional study was conducted among 292 participants. Permission from District Commissioner, Ethical approval and informed consent was obtained prior to the start of the study. Dental caries and periodontal status was recorded. Saliva samples were collected in sterile containers to assess total antioxidant capacity. Data was collected, coded and fed in SPSS (Statistical Package for Social Sciences) version 16 for statistical analysis.

**Results:** Tobacco, alcohol and oral mucosal conditions was observed in 37.33%, 28.77% and 3.77% of the study subjects respectively. Majority of them used cigarettes followed by paan and gutka. Prevalence of oral mucosal conditions was 9.2% and 0.5% among tobacco users and non-users respectively and this difference was statistically significant. About 69.7% of the participants had calculus among tobacco users. TAC was lower in traffic personnel compared to crime and DMFT index scores was higher in Traffic compared to crime( $p < 0.05$ ).

**Conclusion:** Prevalence of dental caries, periodontal diseases, oral mucosal conditions and and tobacco use was high among tobacco users. Efforts need to be focused on raising Police Personnel's awareness towards oral health care.

## Potency of Expired Antibiotics

**Students** : Shahla Nazreen & Ayshath Hiba Moideen  
**Supervisor** : Dr. Shashidara. R  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### Abstract:

Antibiotic medication are widely used in treatment and prevention of bacterial infections. It is true that effectiveness of the drug may decrease overtime but much of the original potency still remains even a decade after expiration date. The concern that expiration dating may markedly underestimate the actual shelf life of drug products has been always an issue. The expiration of drugs is adjudged by stability tests.

Our research is to check the potency of expired antibiotics, see if the expired antibiotics still have the same potency so that we continue using it and determine the benefits and risks associated with lengthening expiration dates to subsequently conduct longer stability testing.



## Practice of Self Medication In Symptomatic Oral Mucosal Lesions Among Patients Visiting A Dental Hospital In South Coorg – A Cross Sectional Study

**Student** : Sushmitha. P  
**Supervisor** : Dr. Veena S. Narayanan  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT :

**Introduction:** Self-medication for common ailments is a widespread practice in India. Self-medication can pose certain adverse effects to the health. In dentistry self-medication for odontalgia is frequent and various studies have been performed for evaluation of the same in various parts of the country. But very few studies have focused on self-medication practices in symptomatic oral mucosal lesions.

**Aims and objectives:** To estimate the prevalence of self-medication practice among the patients visiting a dental hospital in South Coorg.

**Methodology:** The study population was formed by the outpatients visiting the Department of Oral Medicine and Radiology, Coorg institute of Dental Sciences, Virajpet in this cross sectional study. A proforma was designed which included a questionnaire containing 9 questions regarding self-medication. The evaluator interviewed the participants and entered their response in the proforma.

**Statistics:** The data obtained will be subjected to statistical analysis using SPSS software version 23.0. Prevalence of self-medication among patients and demographic characteristics of the study population will be calculated. Chi square test will be applied to test the association between the variables.  $P \leq 0.05$  will be considered for statistical significance.

**Result:** 35% of the population were self medicating and the result was statistically significant. Among that prevalence of self medication was high among females, and also was high among rural population. Patients with aphthous ulcer showed a high tendency of self medicating followed by patients with traumatic ulcer. Anesthetic gel was found to be the most commonly used self-medicating agent.

**Conclusion:** Overall prevalence of self medication practice was found to be 35%. These results cannot be directly compared with any other studies as this is the first study which is done on self medication for oral mucosal lesion. This study was done on grave concern in patients with potentially malignant disorders or early cancer, as it could delay the diagnosis.

## Comparative Effects of Various Antibiotics on Bacteria Affecting The Oral Cavity

**Student** : K.M.Kushalappa and Jayalakshmi J.  
**Supervisor** : Dr. Shashidhara R and Dr. Archana  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### Abstract:

Ever since antibiotics were discovered in 1928, humanity has spent countless hours trying to develop faster-acting and more efficient forms of antibiotics. However, as research progress we find that a growing population is developing resistance to antibiotics.

**AIM:** The aim of our study is to compare the antibiotic prescribed by the practitioner to 15 other antibiotics and observe which of the antibiotics are best acting in the chosen case.

**METHODOLOGY:** The first step of our study is to identify the patients that are suffering from oral diseases/infections that will need the prescription of antibiotics. Once the patients have been identified, they will be informed of the study we are conducting. Care is taken to make them aware that their identity and personal details will not be included in the study.

The next step involves the process of taking a bacterial swab from the lesion. As soon as the specimen is collected, the swab is placed in an air-tight container and immediately taken to the microbiology laboratory for culturing.

The bacterial specimen is then cultured on a Nutrient Agar Medium as we did not want to be selective in our culturing method. A lawn culturing technique is used in the study. The culture media is then allowed to develop in an incubator for 24 hours. The study includes both aerobic and anaerobic culturing of the bacteria.

Our study involves testing the bacteria isolates of obtained organisms against 15 different antibiotics that are commonly prescribed.

Once the bacteria have been satisfactorily cultured, an Antimicrobial Sensitivity Test will be carried out in which small strips of the aforementioned antibiotics will be placed in the culture discs. After a 24 hour period, the radius of inhibition around the antibiotic strip will be measured. The extent to which the different antibiotics have inhibited the growth of the bacteria will then be compared and tabulated.

In addition, bacterial sensitivity test will be conducted to ascertain the specific bacteria that is present in the culture media.

## Dentelf-I-e-D

**Student** : N. PRATHEEKSHA KALAPPA  
**Supervisor** : Dr. Archana Krishnan  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### Abstract:

This paperwork throws light on the positive side of the very social epidemic selfies, on how we can try and prove selfies to be a source of ante mortem records. With this we can also show the role of anterior dentition in post mortem identification. The study is carried out by collecting selfies from student volunteers, taking alginate impressions of the same and getting dentition cast out of it. After this the dentition cast and the selfie is compared with an effort to create a positive identity.

## “A tooth mirror advancing towards digitalization”

**Student** : Bhagyalakshmi K

**Supervisor** :

**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### ABSTRACT :

**Background:** Despite breakthrough in science and technology, natural calamities and crimes continue to persist in human life. Identification of human remains is an essential for various reasons including legal, criminal, humanitarian and social grounds. Dental remains can be used for identification as they are biologically stable and contain information about physiological, chronological and pathological events in the life of an individual, which remains as marker within the teeth. Various methods are currently employed in forensic odontology for personal identification like ante mortem dental charts, rugoscopy, denture labeling, DNA analysis from dental pulp, bite mark analysis etc. Recently there is growing interest in the study of enamel rod end patterns. These enamel rod end patterns are termed as tooth prints and the study of these prints is known as Amelogyphics. The tooth prints are unique, exhibiting dissimilarity between the teeth of different individuals and of the same individual. Hence this is valuable tool in forensic science for personal identification. Moreover minimal research is carried out for identification of individual using Amelogyphics and none of the existing literature focuses its application on age estimation of an individual.

**Aim & objectives:** To evaluate the role of tooth prints in identifying an individual with gender determination and age estimation

**Materials and Methods:** 50 freshly extracted teeth were collected, among them 30(females) and 20( males). These extracted teeth were sorted according to age group, and were grouped as group I- 20-30 yrs, Group II- 30-40 yrs, group III-40-50 yrs and group IV- > 50yrs. Teeth were polished and kept in sodium hypochloride for 20 seconds to avoid any contamination during acetone itching. The cellulose acetate peel technique will be employed to record enamel rod end patterns and obtained patterns will be analyzed under compound microscope (40X). The photomicrographs will be taken and the patterns will be analyzed using Verifinger standard SDK version 5.0 software.

## Effectiveness of an interactive educational method to teach tobacco cessation counseling in dental school

**Student** : Prajwal G  
**Supervisor** : Dr Bhakti Sadhu  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### Abstract:

**Background:** India has the highest tobacco related deaths in the world and it is expected to increase in future. Dentists play an important role in promoting healthy lifestyle by incorporating tobacco cessation programs in to their practice. Studies have shown incompetency in TCC training and knowledge. Using different methods in training will develop skills which will lead to lifelong learning and better preparation of students for their professional careers. The aim of my study was to assess and compare the effectiveness of an interactive educational method in teaching Tobacco Cessation Counselling (TCC) among the final year students of Coorg Institute of Dental Sciences(CIDS), Virajpet, Karnataka.

**Methodology:** An interventional study conducted among final year BDS students of CIDS. Ethical approval and informed consent was obtained prior to the start of the study. Problem Based learning method used for TCC training. Questionnaire was used to assess the knowledge and attitude on TCC before and after training. SPSS was used for statistical analysis.

**Results:** Pre training results showed lack of knowledge, confidence and time among the students in conducting TCC. When asked if smoking is a private matter, before the training majority of the students agreed to the statement. Knowledge and attitude both had shown statistical significant difference between pre and post training in TCC.

**Conclusion:** Study reveals there is a need to develop innovative and educational initiatives. It is very important for the students to know how to overcome the gap between the theoretical knowledge and the practical aspect of TCC.

## Effect of dietary beverages on dental hard tissues – A tri-microscopic study

**Students** : Shivani R M and Priyanka Yadav  
**Supervisor** :  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### ABSTRACT :

**Background:** The longevity of the tooth depends on the structural integrity of enamel and dentin which is affected by consuming acidic beverages that have a rapid rate of demineralization. An attempt was made to analyze the erosive capacities of various acidic beverages.

**Aim:** The study aimed to estimate the mean weight reduction and evaluate the surface characteristic changes in enamel and dentin following exposure to acidic beverages and dietary preservatives.

**Methodology:** 50 extracted human permanent teeth were sectioned longitudinally, pre-weighed, randomly grouped and placed in 9 acidic beverages with predetermined pH (200 ml) i.e 3 commercially available fruit juices, 3 dietary preservatives and 3 carbonated drinks. 2 specimens were removed randomly from these acidic beverages time intervals of 12, 24, 48 and 96 days. The specimens were re-weighed to calculate the mean weight loss and were viewed under a stereomicroscope to assess surface changes. Ground sections were viewed under a compound microscope and a polarizing microscope to assess the demineralization pattern and changes.

**Result:** Results are awaited as the final phase of the study is ongoing.

**Conclusion:** The most potent acidic beverage with maximum demineralizing effect was determined. The present study made use of three different types of microscopes and provided a versatile picture of demineralizing effect of acidic beverages on enamel and dentin.

**Clinical Significance:** The current study thus provides significant evidence regarding the most potent acidic beverage that causes destruction of the tooth structure by demineralization. Awareness regarding the demineralizing potential of acidic beverages has been created.



# TECHNICAL NOTE

Sl. No	Code	Title	Name	College	Pg. No.
	TNP01	Child Abuse and Neglect – A Scenario	Nancy S. Thomas Meghna S. Harish	CIDS	35



## Child Abuse and Neglect: A Scenario

**Students** : Nansy. S. Thomas and Meghna. S. Harish  
**Supervisor** : Dr. Shanthala B.M.  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Child abuse is harm to, or neglect of, a child by another person whether an adult or child, it can be physical, emotional, sexual, educational, poisoning.

The primary responsibility of protecting a child from abuse and neglect lies with the families or primary caregivers. However dental professionals can observe such injuries in the course of dental treatment and are within the scope of identification.

Problems of child abuse remains hidden for so many reasons such as child's own emotions or lack of acceptance by the caregivers. Hence this remains dormant and continues to affect the child resulting in permanent characteristic changes in personality of the child.





# CASE REPORTS

Sl. No	Code	Title	Name	College	Pg. No.
1.	CRP01	Diagnostic Panel of Markers CD45, CD20, CD3, CD138, and CD56 For Oral Solitary Plasmacytoma of Bone	1. Larissa 2. Ashfiya	Ramaiah University of Applied Sciences	39
2.	CRP02	Managament of Treacher Collins Syndrome With Distraction Osteogenesis	1. Sushmitha P 2. Tanya Chondamma	CIDS	
3.	CRP03	Odontogenic Keratocyst – An Invisible Cyst	Shivang Pandey	SDM College of Dental Sciences & Hospital Dharwad	39
4.	CRP04	Bilateral Osteoporotic Lesions of The Jaws In Sickle Cell Anemia	1. Sitara Subbiah 2. Monica Ramachandran	CIDS	40
5.	CRP05	A Case of Dual Pathology In A 35-Year Old Man	Vineeth V	SDM College of Dental Sciences & Hospital Dharwad	40
6.	CRP06	Variations In Inferior Alveolar Nerve	1. Uzma Fathima 2. Showryavardhan	CIDS	41
7.	CRP07	Prevelance of Mesiodens and Its Effects	Apoorva D	CIDS	41



## Diagnostic Panel of Markers CD45, CD20, CD3, CD138, and CD56 for Oral Solitary Plasmacytoma of Bone

**Students** : Larissa and Ashfiya  
**Supervisor** :  
**College/University** : M.S. Ramaiah University of Applied Sciences, Bengaluru

### ABSTRACT:

**Introduction:** Solitary plasmacytoma of bone (SPB) is a rare entity often encountered in vertebrae and less frequently in long bones. Its presence in jaws is extremely rare, accounting for 4.4% of cases only. About 5% of patients with plasma cell dyscrasias present with SPB.

**Aim:** This presentation aims to emphasize on the role of immunophenotyping in plasmacytic malignancies.

**Case report:** An elderly male patient reported with a chief complaint of growth in the anterior region of the lower jaw for 3 months. The histopathological features were suggestive of a pyogenic granuloma. Serological investigations revealed seropositivity for human immunodeficiency virus (HIV)-1 antibody with hypergammaglobulinemia and hypoalbuminemia. Histopathology of excisional biopsied tissue revealed a round cell malignancy with plasmacytic morphology. Further, to arrive at a specific final diagnosis, immunohistochemistry (IHC) was employed with a panel of markers CD45, CD20, CD3, CD138, and CD56. This panel enabled us to establish a final diagnosis of SPB with clinicopathologic correlation.

**Conclusion:** The present case posed a diagnostic dilemma with overlapping features of non-Hodgkin's lymphoma (NHL), multiple myeloma (MM), extramedullary plasmacytoma (EMP), and plasmablastic lymphoma (PBL). A thorough clinico-radiological, serological, and IHC panel helped to diagnose the present case. The CD56 enabled differentiation between SPB and PBL.

**Clinical significance:** Timely diagnosis of malignant lesions is an essential concern for effective management. Thus, we emphasize that the IHC is a valuable investigative tool in the diagnosis of round cell tumors with plasmacytoid morphology.

## Odontogenic Keratocyst – An Invisible Cyst

**Students** : SHIVANG PANDEY and Ankita Sinha  
**Supervisor** :  
**College/University** : SDM College of Dental Sciences and Hospital, Dharwad



### ABSTRACT:

**Introduction:** Odontogenic keratocyst (OKC) an intraosseous odontogenic lesion with a noteworthy potential for growth, expansion and local invasion, bulk of these cystic tumors arise sporadically and solitarily in jaws of middle-aged individuals. Though controversies still exist on the nomenclature, the neoplastic behaviour is accepted by all. Neoplastic nature is based on studies suggesting the aggressive behaviour, histology and genetics. Multiple lesions are commonly being associated with NBSCS (Nevoid Basal Cell Carcinoma Syndrome).

**Material & methods:** Retrospectively 10 cases of OKC were reviewed and the clinical details like age, gender, site, clinical presentation. Radiographic details like uni or multilocular radiolucency, borders and association with impacted were noted and histopathological features included parakeratinized or orthokeratinized were noted in detail.

**Results:** Age group ranged from 13-80yrs, with male predominance of 6 cases and female 4 cases. Common site affected was posterior mandible in 8 cases and 2 cases noted in maxilla in the anterior region. Radiographically 9 cases showed unilocular radiolucency and 1 case presented as multilocular. Of 9 cases 2 were associated impacted tooth mimicking dentigerous cyst and one case resembled radicular cyst. of 10 cases one case was ortho-keratinized & rest were parakeratinized of which one reported with recurrence with 3 years duration after treatment.

**Conclusion:** Correct diagnostic modality will help to distinguish OKC and from other odontogenic lesion. As OKC is a locally destructive and known to associate with aggressive behavior and increase chances of recurrence. Meticulous surgical treatment is required to prevent recurrence.

## Bilateral Osteoporotic Lesions of The Jaws In Sickle Cell Anaemia

**Students** : Sitara Subbiah and Monica.R  
**Supervisor** : Dr. K.C. Ponnappa & Dr. Salin Nanjappa  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT :

Osteoporotic bone marrow defects of the jaws have been reported as a poorly demarcated radiolucency that mainly affect the posterior aspect of the mandible. Since the osteoporotic bone marrow defects are rarely included in the differential diagnosis of radiolucent lesions of the jaws, the knowledge of the clinical, radiographic and histopathological characteristics in association with an accurate examination, are mandatory, in order to distinguish it from other most common intrabony lesions as odontogenic tumors or cysts. A case of osteoporotic bone marrow defect occurring bilaterally in the mandible and the maxilla of a 56 year old female patient previously diagnosed with Sickle Cell Anaemias presented reinforcing its diagnostic criteria and treatment modality.

## A case of dual pathology in a 35-year old man.

**Student** : Vineeth. V  
**Supervisor** :  
**College/University** : SDM Dental College, Dharwad



### ABSTRACT:

A 35-year-old male presented with a 6-month history of a white patch and a non-healing ulcer on the left lateral border of the tongue. He had a history of tobacco chewing. Extra oral examination revealed cervical lymphadenopathy. Intraoral examination revealed a well-circumscribed ulcero-proliferative speckled lesion with everted, irregular and raised margin. The lesion measuring 1.5 cm by 2 cm in the greatest dimension, extending to the floor of the mouth with a punched out ulcer on the posterior-lateral aspect of the tongue. Incisional biopsies from superior and inferior aspect of the lesion revealed a well differentiated invasive squamous cell carcinoma and a necrotizing tuberculous granulomatous lesion. After the wide excision of the lesion with left hemi-glossectomy and modified radical neck dissection the lymph nodes from level I-IV revealed well-formed multiple necrotizing granulomatous inflammation with palisading epitheloid and Langhans'giant histiocytes. Mycobacterium tuberculosis (MTB) infects one third of the world's population and is the second leading cause of death from an infectious disease after HIV. The present case shows the co-existent oral squamous cell carcinoma with tuberculous granulomatous infection. One should always consider the possibility of dual pathology as in the present case mainly due to cancer induced immune suppression. Granulomatous inflammation may be found in the lymph nodes draining the primary tumour either with or without metastatic cancer. It has been observed in many malignancies e.g. breast carcinoma, gastric, colonic and laryngeal cancer. Reports in the oral cavity are rare, only a few cases have been documented in literature.

## Variations In Inferior Alveolar Nerve

**Students** : Uzma Fathima and Showryavrdhan  
**Supervisor** : Mr. Bhanuprasad  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT :

**Introduction:** Sound knowledge of anatomical variations that could be encountered during surgical procedures is helpful in avoiding surgical complication. This paper includes variations of the lingual nerves associated with inferior alveolar nerve. Though understanding of variant anatomy of the lingual and inferior alveolar nerves may determine the success of procedural anesthesia



**Conclusion:** An understanding of anatomical variations is imperative, as without adopting alternate anesthesia techniques such variations may potentially thwart a clinician from achieving successful pain control. In addition by performing thorough diagnostic and presurgical evaluation of the associated neurovasculature, clinicians will not only be able to assess any anatomical variants present, but also be able to better influence outcomes of surgical procedures infratemporal fossa or mandible.

## Prevalence of Mesiodens and Its Effects.

**Student** : Apoorva. D  
**Supervisor** : Dr. Shanthala B.M.  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Supernumerary teeth are one of the most widely reported and significant anomaly in patients affecting the primary and early mixed dentition. The etiology of supernumerary teeth is unclear. The most frequent type of supernumerary tooth is the mesiodens, located between the central incisors in the anterior maxilla.

Review on mesiodens reports that it has a prevalence of 0.15% and is common in males than in females. Mesiodens, is often located on the palatal side of the root of a deciduous tooth. Mesiodens can occur individually or as multiples, may appear unilaterally or bilaterally, and often do not erupt. On the basis of the morphology, it can be conical, supplemental and tuberculate type. Supernumerary teeth results in a variety of complications such as impaction of adjacent teeth, crowding, spacing, displacement and rotation of central incisor, occlusal interferences, caries and esthetic concerns.

Aim of this presentation was to assess the prevalence of mesiodens reporting to the department in the duration of 10 years. (2009-2019)

A retrospective study was conducted using patient's data sheet for previous 10 years. It was observed in the age group 7-12 years of conical form and were non syndromic. The male: female ratio was 2.3:1 with prevalence rate of 0.020 and predominance in Kerala population. 63.6% patients had malocclusion due to the mesiodens

The treatment of mesiodens varied from simple extraction, wait for its eruption and extraction or surgical exposure under sedation techniques but the timing of extraction, type of extraction and co-operability of the pediatric patient has to be considered.



# REVIEW PAPER



## ABSTRACTS

Sl. No	Code	Title	Name	College	Pg. No.
1.	RP01	Dental Caries and Vitamin D Deficiency in Children: A Systematic Review and Meta-analysis	1. Nurfarrahana Binti Mohd Sapawi 2. Aziatul Akmal Binti Rohazak	Universiti Teknologi Mara Malaysia	47
2.	RP03	Virtopsy A New Era In Forensic Odontology	Navya K	Govt. Dental College Bangalore	47
3.	RP02	Effects of Antihypertensive Drugs on Alveolar Bone Loss in Patients with Chronic Periodontitis: A Retrospective Study	1. Nik Aiman Ishtafa Bin Khairuddin 2. Christabel Lai William	Universiti Teknologi Mara Malaysia	48
4.	RP04	Critical Appraisal of Classification Systems In Oral Submucous Fibrosis.	1. Priyanka M 2. Netra CA	SDM College of Dental Sciences & Hospital Dharwad	48
5	RP05	Nanotechnology	1. Anjana 2. Samhita	VS Dental College	
6	RP06	Proliferative Verrucous Leukoplakia: An enigmatic lesion	Praveen P	SDM College of Dental Sciences & Hospital Dharwad	49
7	RP07	Laser Phototherapy In Periodontics	Kavyashree M Betty K. Joy	CIDS	49
8	RP08	Chemiluminescent light system as a clinical tool in the diagnosis of potentially malignant and malignant lesions	1. Manish Dongre 2. Shubham Jain	SDM College of Dental Sciences & Hospital Dharwad	50
9	RP09	Tumor markers in oral squamous cell carcinoma	Navya V.S. Shreyansh Nanaiah	CIDS	50
10	RP09A	Journey into the shadow world of ghost cells	1. Runal Sarkar 2. Shayari Kolathaya	NSDM College of Dental Sciences & Hospital Dharwad	51
11	RP10	Oral Manifestations of Zika Virus Infection – A dental Perspective	1. Harshitha M 2. Jui Rajeev Joglekar	MS Ramaiah University of Applied Sciences	51
12	RP11	Unraveling Gummy Smile By Botulinium Toxin	Athul Ramesh Aswathi Pradeep	CIDS	52
13	RP12	Robotics in dentistry	1. Arpitha 2. Sayana	VS Dental College	
14	RP13	A tooth mirror advancing towards digitalization	Bhagya Lakshmi	KMS Ramaiah University of Applied Sciences	
15	RP14	Oral Manifestations: A gateway to diagnose Chikungunya Fever	Khazi Ahamed Asifa	MS Ramaiah University of Applied Sciences	52
16	RP15	An Early Catch of Dengue Fever Through Oral Cavity	1. Agnivesh Prakash 2. Sanvika Brunda Renuk	MS Ramaiah University of Applied Sciences	53

## ABSTRACTS

Sl. No	Code	Title	Name	College	Pg. No.
17	RP16	Effects of Female Sex Hormones on the Periodontium	1. Poojitha 2. Anusha Goil	MS Ramaiah University of Applied Sciences	53
18	RP17	Prophylactic extraction of impacted 3rd molars: A necessity or absurdity?	1. Harsha RS 2. Rohit John	SDM College of Dental Sciences & Hospital Dharwad	
19	RP18	Bite Block Therapy	Haripriya H.R. Neha S.M.	CIDS	54
20	RP19	This review aims to discuss the structure, origin of Toto bodies and demonstrate the possible theories responsible for its formation.	1. Zeba 2. Meghana	MS Ramaiah University of Applied Sciences	54
21	RP20	Dental Tissue Rejuvenation	1. Shailaja Hunur 2. Sahana Gangadhar	SDM College of Dental Sciences & Hospital Dharwad	55
22	RP21	Haemostatic property of herb Bletilla Striata and its application in dental surgery	Niharika K G	MS Ramaiah University of Applied Sciences	55
23	RP22	Role of Stem Cell In Prosthodontics	Kavanashree A.M. Shabnam Shirin	CIDS	56
24	RP23	Silver Diamine Fluoride – An anti- carious bullet	Ananditha Stephen	MS Ramaiah University of Applied Sciences	56
25	RP24	Dermatoglyphics	1. Shubham Apurve	VS Dental College	
26	RP25	Robotic dentistry - from fiction to reality	Kaaviya KS	JSS Dental College & Hospital	57
27	RP26	TMD and Occlusal Splint Therapy - and Over View	1. Aayushi S Chirania 2. Pallavi.S.N	SDM College of Dental Sciences & Hospital Dharwad	57
28	RP27	Neurofibroma	1. Rajaram 2. Sabin	VS Dental College	
29	RP28	Green synthesis of silver nanoparticles using Psidium guajava leaf extract	Niharika TP Mariya M Jose	CIDS	58
30	RP29	Aptasensors: An Apt Approach To Oral Diagnosis	Nandhita Murugavel	Govt. Dental College Bangalore	58
31	RP30	3D printing – the future of dentistry	Sanjana Madarapu	JSS Dental College & Hospital	58
32	RP31	Salivary Pacemaker : A Tool to Drool	Sheetal K. Raju	Government Dental College Bangalore	

## Dental Caries and Vitamin D Deficiency in Children: A Systematic Review and Meta-analysis

**Students** : Mohd Sapawi N, Rohazak A.A, Hussein A.S,  
Mohd Yusof M.Y.P

**Supervisor** :

**College/University** : Faculty of Dentistry, Universiti Teknologi MARA, Malaysia

### ABSTRACT:

**Objectives:** The relationship between dental caries and vitamin D deficiency in children is controversial. This meta-analysis aimed to systematically evaluate published evidence on the association between dental caries and vitamin D deficiency in children.

**Methods:** Science Direct, PubMed/Medline and Scopus databases were searched up to Jan 2018 for relevant studies using search terms including "vitamin D"; "dental caries" and "children". Case-control and cross-sectional studies investigation the relationship between dental caries and vitamin D deficiency in children were included. Meta-analysis was done using RStudio version 0.97.551-2009-2012 RStudio, Inc. software. Odds ratios (ORs) with 95% confidence intervals (CIs) were pooled using random effect models. Heterogeneity was assessed by calculating I-square ( $I^2$ ).

**Results:** Five studies met the inclusion criteria. There was no significant association between vitamin D deficiency and dental caries in children, the overall OR and 95% CL was 0.99 (0.82-1.17) with a Chi-Square ( $\chi^2$ ) statistic for heterogeneity of 2.09 and four degree of freedom ( $P > 0.05$ ). The heterogeneity across studies was not significant ( $I^2 = 0.01\%$ ). Funnel plot and the Egger regression test revealed the absence of a publication bias.

**Conclusions:** This meta-analysis indicated that dental caries is not associated with vitamin D deficiency in children. Further studies are required to assess such association in the future.

## Virtopsy A New Era In Forensic Odontology

**Student** : Navya

**Supervisor** :

**College/University** : Government Dental College, Bengaluru



### ABSTRACT:

Forensic odontology has been emerging as a major branch in forensic science, as teeth is resistant to degradation. The traditional internal autopsy procedure consist of body mutilating technique, virtopsy is a step ahead to this .Virtopsy is a word combining 'virtual' and 'autopsy' , basically consisting of body volume documentation and analysing it using CT, MRI, microradiology, 3D body surface documentation using forensic photogrammetry and 3D optical scanning. This is a new approach for systematically comparing radiologic and surface scanning findings with those obtained in traditional autopsy.

It has specific dental applications in detection of fracture line, identification of primary and secondary trauma and localization of the depth of foreign body. Dental identification procedures include comparison between post mortem and ante mortem data, development of dental post-mortem victim details and deoxyribonucleic acid techniques. It has special advantages like digital storage of data, forensic evidence is not damaged, no risk of infection, high acceptance by relatives. Thus this paper aims to stimulate multidisciplinary research to develop improved tools and protocols for virtopsy and to stress the role of forensic odontology in this field

## Effects of Antihypertensive Drugs on Alveolar Bone Loss in Patients with Chronic Periodontitis: A Retrospective Study

**Students** : William C, Khairuddin N.A.I, Ibrahim O.E, Al-Bayaty, F.H  
**Supervisor** :  
**College/University** : Faculty of Dentistry, Universiti Teknologi MARA, Malaysia

### ABSTRACT:

**Objectives:** This retrospective study aims to evaluate the possible effects of antihypertensive drugs on alveolar bone loss in patients with chronic periodontitis.

**Methods:** 50 patients on antihypertensive drugs selected as the experimental group and 50 patients with chronic periodontitis with no known systemic illnesses as control group were randomly selected as the study samples. Orthopantomographs (OPG) were obtained, calibration and assessment of alveolar bone loss (ABL) was performed by using the computer software program available in the faculty, through radiographic linear measurement procedure. Premolars, first and second molars were measured from the most apical point to the cemento-enamel junction (CEJ) for mesial and distal aspects in the form of millimetres and percentile of the root length. Data was statistically analyzed using independent t-test and ANCOVA in SPSS V23 with significance at  $p < 0.05$ .

**Results:** A total of 2428 sites were measured. Analysis has shown that there is significant difference in alveolar bone loss in experimental group and control group ( $p = 0.002$ ). Bone loss in the experimental group was less ( $16.28 \pm 9.48$ ) compared to the control group ( $22.66 \pm 12.58$ ). Within the experimental group, there was no significant difference for the duration of antihypertensive drug intake. However, the bone loss was more among the males ( $19.71 \pm 11.22$ ) than the females ( $12.99 \pm 5.99$ ).

**Conclusion:** Antihypertensive drugs appear to have a positive effect on alveolar bone loss progression. Patients under these drugs exhibit lower levels of bone loss compared to those who are not.

## Critical Appraisal of Classification Systems In Oral Submucous Fibrosis

**Students** : Priyanka.M and Netra CA  
**Supervisor** :  
**College/University** : SDM College of Dental Sciences, Dharwad

### ABSTRACT:

Oral sub mucous fibrosis is a generalized pathological state of the oral mucosa associated with a significantly increased rate of a cancer, characterized by inflammation and progressive fibrosis of the submucosal tissues resulting in marked rigidity and trismus. The etiology of the disease over the intervening years was thought to be multifactorial and several agents have been implicated, including the consumption of large amount of chillies, nutritional deficiencies, genetic predisposition and autoimmune diseases. Conclusive evidence now exists indicating that OSMF is caused by areca nut a masticatory substance used predominantly by people of south and Southeast Asian ethnicity. It is considered as a potentially malignant disorder because of its high rate of transformation into malignancy.

OSMF still remains dilemma to the clinician due to elusive pathogenesis and less well defined classification systems. Over the years many classification systems have been documented in medical literatures based on clinical, histopathological or functional aspects. However none of their classifications have achieved universal acceptance. Here in this paper an attempt is made to provide and update the knowledge of classification system on OSMF so as to assist the clinician, researches and academics in the categorization of these potentially malignant disorders in order to help in easy detection and subsequent management and thus reducing the mortality due to cancer.

## Proliferative Verrucous Leukoplakia: An enigmatic lesion

**Student** : PRAVEEN P  
**Supervisor** : Dr. Kiran Kumar  
**College/University** : SDM College of Dental Sciences and Hospital, Dharwad



### ABSTRACT:

Proliferative verrucous leukoplakia (PVL) is a rare form of oral leukoplakia, which was first described in 1985 by Hansen et al. PVL is a disease with aggressive biological behaviour due to its high chances of recurrence and a high rate of malignant transformation upto 70%. PVL is observed more frequently in elderly women over 60 years and tobacco use does not seem to have a significant influence. It develops initially as a white patch or a plaque of hyperkeratosis and eventually becomes a multifocal disease with confluent, exophytic and proliferative features with resistant to all therapeutic procedures making it more and more difficult to control. The PVL may go through a stage indistinguishable from verrucous carcinoma but may later develop dysplastic changes or transform into full-fledged squamous cell carcinoma usually within 8 years of initial diagnosis. The aetiology of PVL remains unclear as well as its management and diagnosis, which is usually retrospective, late and poorly defined, lacking consensus criteria. The present paper reviews the etiology, presentation, prognosis and recent development in the early diagnosis of this enigmatic disease.

## Laser Phototherapy In Periodontics

**Students** : Kavyashree M and Betty K Joy  
**Supervisor** : Dr. Uthappa K.B.  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Treatment protocols with low-level Laser (also called 'soft laser therapy) have been used in health care systems for more than three decades. Bearing in mind the suitable sub-cellular absorption and the cellular-vascular impacts, low-level laser may be a treatment of choice for soft tissues. Low-level lasers have played crucial and colorful roles in performing periodontal surgeries. Their anti-inflammatory and painless effects have been variously reported in in-vitro studies. The therapy performed with low-level lasers is called as LLLT. LLLT devices include the gallium arsenide, gallium aluminum arsenide infrared semiconductor (gallium-aluminum-arsenide), and helium-neon lasers. The output powers range from 50 to 500 mW with wavelengths in the red and near infrared of the electromagnetic spectrum, from 630 to 980 nm with pulsed or continuous-wave emission. The application of LLLT has become popular in a variety of clinical applications in periodontics including promotion of wound healing and reduction of pain following nonsurgical and surgical procedures.

## Chemiluminescent light system as a clinical tool in the diagnosis of potentially malignant and malignant lesions

**Students** : Manish Dongre and Shubham Jain  
**Supervisor** : Dr Prashant Prabhu  
**College/University** : SDM College of Dental Sciences and Hospital, Dharwad

### ABSTRACT:

Oral cancer is one of the most common cancers in India. Historically, the screening of patients for signs of oral cancer and potentially malignant lesions has relied upon the conventional oral examination. A variety of commercial diagnostic aids and adjunctive techniques are available to potentially assist in the screening of healthy patients for evidence of otherwise occult cancerous change or to assess the biologic potential of clinically abnormal mucosal lesions. Various clinical diagnostic methods available are Toluidine blue, ViziLite Plus with TBlue, ViziLite, Microlux DL, Orascoptic DK, VEL scope, Oral CDx and brush biopsy. In this review we try to focus on the use of chemiluminescent light system (ViziLite®) as an effective tool in the early detection of these lesions with its advantages and limitations.

## Tumor Markers in Oral Squamous Cell Carcinoma

**Students** : Navya V. S. and Shreyana Nanaiah  
**Supervisor** : Dr. S. Vinod Thangaswamy  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Sensitive and reliable early diagnostic markers for oral squamous cell carcinoma (OSCC) remain unavailable. Early identification of recurrence for OSCC is also a challenge. Effective screening to identify high-risk patients will allow clinicians to provide an early and appropriate treatment to patients without delay and also reduce the risk of recurrence of OSCC. In the recent years, there is a renewed interest about tumor markers, providing window of opportunity for management of cancer patients by enhancing the efficiency in detection and treatment plan.



Tumor markers are substances that are produced either by the tumor itself or by the body in response to the presence of cancer or certain benign conditions that can aid in the diagnosis of cancer. These markers may be employed to predict primary or secondary tumor risk. Tumor markers cannot be maneuvered as fundamental modalities for the diagnosis of oral cancer. It cannot be used as a sole diagnostic tool but can be used as an adjunct to routine histopathology using eosin and hematoxylin stain. Its main profitability in clinical medicine has been a laboratory test to support the diagnosis; further detailed studies are required to determine their practical usefulness in clinical workflow.

## A Journey into the shadow world of ghost cells

**Students** : Runal Sarkar and Shayari Kolathaya N  
**Supervisor** :  
**College/University** : SDM college of Dental Sciences and Hospital, Dharwad

### ABSTRACT:

The ghost cells are enlarged, ballooned, ovoid or elongated, elliptoid with eosinophilic cytoplasm, but without a nucleus leaving only a faint outline, hence the term "ghost". In routine H and E staining these cells give a shadowy appearance so they are also called as shadow cells or translucent cells. The appearance of these cells varies from lesion to lesion involving odontogenic and nonodontogenic lesion. The outlines of ghost cells sometimes be blurred, and hence that groups of them appear fused. Ghost cells may undergo calcification and lose their cellular outline to form sheet-like area. Highman and Ogden (1944) first described ghost cell in pilomatricomas. Ghost cells are characteristically seen in CCOT, craniopharyngiomas and pilomatricomas. Other lesions exhibiting ghost cells are odontomas, dentinogenic ghost cell tumor, dentinogenic ghost cell carcinoma, ameloblastoma, ameloblastic fibroma. Controversy arises because of the fact that there are varying opinions by several investigators regarding the true characteristics of ghost cells in these lesions. The nature of ghost cells are described by various authors as a form of true keratinization, prekeratin, result of coagulative necrosis, Enamel or dentinal matrix and so on.

Though ghost cells are demonstrable in a wide range of keratinizing odontogenic lesions but there is no difference regarding age/sex of patients and site of predilection from non-keratinizing odontogenic tumors nor do they exhibit different clinical behaviour. The present poster presentation attempt to clear the illusions and controversies surrounding ghost cells.

## Oral Manifestations of Zika Virus Infection – A dental Perspective

**Students** : Harshitha M and Jui Rajeev Joglekar  
**Supervisor** :  
**College/University** : Faculty Of Dental Sciences, M S Ramaiah University, Bengaluru

### ABSTRACT:

**Background:** Zika (ZIKV) virus belongs to genus Flavivirus. It was first identified in 1947 in rhesus monkeys, and later in 1952 in humans in Uganda and United Republic of Tanzania. An infected female Aedes mosquito acts as a vector for its transmission.

**Aim:** This paper focuses on the measures to be taken by a dental professional in a dental setting to prevent the spread of ZIKV.

**Conclusion:** The dental professionals must be able to provide appropriate information and resources to patients who may be infected by ZIKV and must take all precautions necessary to prevent its transmission. Since there are no vaccines or cures for the disease, there is a rising need to prevent its spread in human population.

**Clinical Significance:** Due to similar symptoms, ZIKV is often confused with Dengue fever. The disease causes mild symptoms like fever, maculopapular rash, arthralgia, etc. The symptoms last for 1-2 weeks during the active phase of the virus. The disease is not fatal but causes congenital birth defects as it has the capacity to cross the placental barrier. In the oral cavity, it invades the gingival connective tissue and propagates causing hyperemia and petechiae. It can also enter the oral cavity by infecting the salivary glands to release viral particles into the saliva. Thus, saliva serves as a critical mode of human-human transmission.

## Unraveling Gummy Smile By Botulinum Toxin

**Students** : Athul Ramesh and Ashwathi Pradeep  
**Supervisor** : Dr. Goutham Reddy and Dr. Vikram S  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

**Background and Objectives:** Gummy smile is a problem in dynamic relationship of the lips to the upper incisors. Different treatment modalities have been used in the past for its correction, which were invasive and time consuming. Recently Botulinum toxin A injection has been used as an alternative. This study was aimed at assessing the effect of Botulinum toxin type A in the correction of gummy smile.

**Materials and Methods:** Ten patients with a gingival display of 3mm were selected. Photographs were recorded just before the injection on 14th, 30th, 60th and 90th day. 2.5 units of BTX-A was injected under sterile conditions at four sites, two on each side of the face. Software-based measurements were done to minimize errors.

**Results:** Average pre-injection gingival display was 4.7+/-1.05mm. at 2 weeks post-injection, mean gingival display had declined to 0.9+/-0.7mm, which was statistically very significant; it gradually increased to the average of 3.7mm on day 90.

**Discussion:** From the study it was inferred that botulinum toxin was very effective in eliminating gummy smile even though the effect was temporary; the effect persisted for only about 3 months.

## Oral Manifestations: A gateway to diagnose Chikungunya Fever

**Student** : Khazi Ahamed Asifa  
**Supervisor** :  
**College/University** : Faculty of Dental Sciences, MS Ramaiah University



### ABSTRACT:

**Background:** Chikungunya fever is transmitted by the mosquito *Aedes aegypti* and has reached epidemic proportions since the last few years. In 2005, India experienced more than 13 lakhs of Chikungunya infected cases presenting clinically with a triad of fever, joint pains and aculopapular rash. As the diagnosis of this infection is challenging, there is a need for the health care professionals to be aware of the oral manifestations for the appropriate treatment delivery.

**Aim:** This review aims to highlight the oral manifestations of Chikungunya fever thereby creating awareness among the oral health care professionals.

**Conclusion:** Some of the oral manifestations of this disease include dysgeusia, aphthous like ulcers, gingivitis, crusted lesions, depigmented macules on the lips, mucosal pigmentation, candidiasis, arthralgia of the temporomandibular joint, etc. It is a rapidly spreading disease that mimicks dengue fever and other viral infections. Therefore oral features may provide a clue to carry out further investigations.

**Clinical significance:** Awareness about the oral manifestations of Chikungunya fever among the health care providers helps in its early diagnosis. Preventive measures are necessary to be advocated to the public by educating them on vector control measures like the use of insecticides. Although it is a self-limiting disease, palliative measures to ease the patient in distress due to oral pain should be employed.

## An Early Catch of Dengue Fever Through Oral Cavity

**Student** : Agnivesh Prakash  
**Supervisor** :  
**College/University** : Faculty of Dental Sciences, M S Ramaiah University, Bengaluru

### ABSTRACT:

**Background:** The overall incidence of dengue, as well as the explosive outbreaks of dengue, has been increasing dramatically over the last several years. Data suggests an estimated 50-100 million cases of dengue fever and 500,000 cases of dengue hemorrhagic fever occur worldwide, with 22,000 deaths (mainly in children). Dengue is a mosquito borne viral disease with fatal potential complications. Caused by the *Aedes aegypti* mosquito, Dengue is an eye for concern as it can also lead to significant morbidity and mortality and therefore requires an early and correct diagnosis. Oral cavity is said to be the mirror of the whole body as many systemic infections first show their manifestations here.

**Aim:** The aim of this presentation is to create awareness among dental professionals about the oral manifestation of dengue infection with emphasis on early diagnosis

**Conclusion:** Patients with Dengue infections have gingival bleeding as the most common oral manifestation and is often mistaken for platelet abnormalities and haemorrhagic disorders. In the future, dengue infection will continue to be an important public health problem worldwide. The diagnosis of dengue infection will still remain as the most important issue in clinical management of dengue cases.

**Clinical significance:** As dental professionals, it is essential to identify the oral presentations of dengue since the oral cavity is a common site of hemorrhage and may be the only early manifestation of the disease. Early and accurate diagnosis of this disease can save time by best possible intervention and could be lifesaving.

## Effects of Female Sex Hormones on the Periodontium

**Students** : Poojitha and Anusha Goil  
**Supervisor** :  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### ABSTRACT:

**Background:** Hormones are specific regulatory molecules that have potent effects on the major determinants of the development and the integrity of the skeleton and oral cavity. The main cause of periodontal disease is dental plaque. Along with the pathogenic bacteria, an important factor for the incidence of periodontal disease is the susceptibility of the host. This susceptibility of the host is altered due to certain female sex hormones in various ways.

**Aim:** This presentation focuses on how these hormones influence the periodontium at different life stages such as puberty, menstruation, pregnancy and menopause.

**Conclusion:** Hormones influences the periodontium at different stages of female reproductive life. In pregnancy comprehensive prenatal health care should include an assessment of oral health ,but this is often overlooked. In post menopause stage potential mechanisms by which host factors may influence onset and progression of periodontal disease directly or indirectly include underlying low bone density in the oral cavity, bone loss as an inflammatory response to infection, genetic susceptibility, and shared exposure to risk factors. Systemic loss of bone density in osteoporosis, including that of the oral cavity, may provide a host system that is increasingly susceptible to infectious destruction of periodontal tissue.

**Clinical Significance:** Hormonal influences may appear in oral tissues before other systemic manifestations are apparent. Therefore, it is our responsibility to recognize and vary treatment based on the individual female and the stage of her life.

## Bite Block Therapy

**Students** : Haripriya H.R. and Neha S.M.  
**Supervisor** : Dr. Gayathri K. and Dr. Unni P.  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Bite blocks are small clear acrylic blocks that are typically placed on the back of two of your anterior teeth or the posterior teeth. They were used by dentists working on children and other patients who had difficulty in keeping their mouths wide open and steady during dental procedures or during procedures where the patient is sedated. This presentation describes the usage of bite blocks, not only in keeping the mouth open, but also, in dysarthria, apraxia, open bites and many other conditions.

## Structure, origin of Toto bodies and possible theories responsible for its formation

**Students** : Zeba and Meghana  
**Supervisor** :  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### ABSTRACT:

**Aim:** This review aims to discuss the structure, origin of Toto bodies and demonstrate the possible theories responsible for its formation.

**Background:** The eosinophilic Toto bodies are characterized by homogenous or irregular masses varying in size and number. These unusual bodies are found in the top most layers of oral epithelium and derive its name "mucopolysaccharide keratin dystrophy" based on the nature of its composition. The incidence and severity of Toto bodies have been correlated with the amount of the inflammatory response present in the connective tissue. These bodies have various theories of origin like fibrin, keratin, mucins and glycoproteins.

**Review Results:** To demonstrate the nature of these eosinophilic bodies, two cases – pyogenic granuloma and oral squamous cell carcinoma were studied using special stains. It was observed that Toto bodies were positive for Periodic acid-Schiff (PAS), Modified Papanicolaou (PAP), Masson's Trichrome and combined PAS-PAP staining techniques. However, staining with Alcian blue, Congo red, Mucicarmine and Toluidine blue were negative for Toto bodies.

**Conclusion:** It may be concluded that Toto bodies can be best identified using Masson's trichrome stain followed by combined PAS-PAP, PAS and PAP which characterizes them mainly as glycoproteins and keratins.

**Clinical Significance:** The presence of Toto bodies is indicative of inflammatory reaction and their differential staining in the positive stains depends on the nature and severity of inflammation present in a lesion.

## Dental Tissue Rejuvenation

**Students** : Shailaja Hunur and Sahana Gangadhar  
**Supervisor** : Dr. Shruti B Patil  
**College/University** : SDM College of Dental Science and Hospital, Dharwad



### ABSTRACT:

Human body performs many functions for its maintenance and survival. One among which is to undergo rejuvenation following trauma or disease. This is possible due to the presence of unique set of cells called 'STEM CELLS'. Stem cells are characterized by their potential to self-replicate and their capacity to give rise to differentiated cells. Stem cells biology is an essential part of regenerative dentistry. Stem cells can easily be isolated and stored. They have wide range of application.

Ectomesenchymal stem cells are multipotent stem cells which can differentiate into variety of cell types. The potential mesenchymal stem cells for tooth regeneration mainly include stem cells from human exfoliated deciduous teeth [SHEDs], adult dental pulp stem cells [DSPCs], stem cells from the apical part or the papilla [SCAPs], periodontal ligament stem cells [PDLSCs] etc..

These stem cells have high proliferative and differentiating capacity, they can be easily isolated, stored and easily accessible. These benefits can well be applied in various clinical situations as biological restorative material to regenerate dental tissues minimizing the usage of artificial restorative materials. The study of biology of stem cells is thus the hallmark in the recent emerging field of regenerative dentistry.

## Haemostatic property of herb Bletilla Striata and its application in dental surgery

**Student** : Niharika K G  
**Supervisor** : Dr. Dominic Augustine  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru



### ABSTRACT:

**Background:** Dentist perform variety of surgical procedures frequently such as exodontia, tissue biopsy, placement of intraosseous implants and periodontal surgeries requiring haemostatic agents by the chairside. Bleeding intraoperatively and postoperatively in oral surgery poses a great threat to patient and can lead to serious untoward consequences if not controlled. The dental clinician should be familiar with range of haemostatic agents available and their mechanism of action, application and contraindications. Bletilla Striata is a hyacinth orchid which has recently come into light because of its haemostatic effect.

**Aim:** The aim of this review is to highlight the haemostatic effect of Bletilla Striata nano particle as a haemostatic gel.

**Conclusion:** Available haemostatic agents used in dentistry are ineffective at trending cases of severe bleeding and are expensive or raise safety concerns. There have been reports of adverse reactions like giant cell granuloma, hematoma formation, foreign body reactions, toxic shock syndrome, tissue necrosis. Literature review has shown Bletilla Striata has wound healing, anti-ulcer, anti-inflammatory, and anti-inflammatory property.

**Clinical Significance:** Considering the inexpensive, low cost, non-toxic and long shelf life of Bletilla Striata it can offer a great potential it can be used as alternative haemostatic agent during surgical procedures.

## Role of Stem Cells In Prosthodontics

**Students** : Kavanashree A.M. and Shabnam Shirin  
**Supervisor** : Dr. Gayathri K. and Dr. Unni P.  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

In recent years, the field of dentistry has embossed its presence by taking major leaps in research and further bringing it into practice. The most valuable ongoing research in regenerative dentistry is the study on stem cells. It was instituted that stem cell grow rapidly and have the potential to form specialized dentin, bone, and neuronal cells. In this presentation we describe the advancements of stem cell based therapies, which could help in treating damaged teeth, palatal and soft tissue defects by inducing bone regeneration.

## Silver Diamine Fluoride – An anti- carious bullet

**Student** : Ananditha Stephen  
**Supervisor** :  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### ABSTRACT:

**Background:** Dental caries is one of the most common bacterial infections affecting the hard tissues of teeth. Its prevalence in preschool children is as high as 40-50%. Most decayed tooth are left untreated due to pain, anxiety and need to visit the dentist multiple times. Innovative approaches are required to improve this situation. With the gaining popularity of minimally invasive techniques in dentistry a more conservative approach is necessary. Literature suggests that dentinal caries can be arrested without restoration in primary teeth using silver diamine fluoride.

**Aim :** The aim of this review is to highlight the effectiveness of silver diamine fluoride in arresting dentinal caries in pre-school children.

**Conclusion :** Existing procedures in dentistry are painful, time consuming, cumbersome, damages more tooth structure and decreases patient co- operation. Topical application of silver diamine fluoride can arrest dentinal caries in primary tooth as it's a bacterisidal agent and reduces the growth of cariogenic bacteria. It also inhibits demineralisation and promotes remineralisation of enamel and dentine, also hampers degradation of dentine collagen. It may also find its application as an indirect pulp capping agent.

**Clinical significance :** Considering its inexpensiveness, operator friendly, painless and conservative approach it can be used to enhance dental caries management in community as well as routine and special child. It can also be used to prevent new carious lesion formation in high risk individuals thereby, increasing patient comfort and developing a positive attitude towards dental treatment.

## Robotic Dentistry - From Fiction To Reality

**Student** : Kaaviya KS  
**Supervisor** : Dr. Sunila B S  
**College/University** : JSS Dental College and Hospital, Mysuru



### ABSTRACT:

Robots, the most wonderful invention of human being, with the necessary technologies being developed and experimented have made its way into dentistry. With unmatched precision and ability to work without fatigue, robots serve to be the most useful applications of robotic technology. Artificial intelligence and robotic assistants have been used to aid dentists with procedures like implant surgery, root canal therapy as well as training students. Yomi, the first robotically assisted dental surgical system, received approval from the U.S. Food and Drug Administration and is expected to improve the success of dental procedures. Moreover, nanobots are being explored in the detection of bacteria, viruses, DNA as well as in the diagnosis and treatment of oral cancer without any side effects. The reduced duration of orthodontic therapy, rapid occluding of dentinal tubules and induction of needle free local anesthesia by nanobots add very much compliance to patients. The main aim of this paper is to review the possible innovative applications of robotics in future dentistry.

## TMD and Occlusal Splint Therapy- and Over View

**Students** : Aayushi S Chirania and Pallavi.S.N  
**Supervisor**  
**College/University** : SDM College of Dental Sciences, Dharwad



### ABSTRACT:

**Introduction:** Temporomandibular disorders include a wide range of conditions associated with orofascial, head and neck pain and dysfunctions. These conditions can be related to masticatory or neck muscles, the central and peripheral nervous system or the TMJ. Myofascial pain could be considered the most common form of a chronic TMD. Several diagnostic treatments have been suggested by various authors for musculoskeletal disorders of the temporomandibular region, reflecting the different theories of etiology probably responsible for the various signs and symptoms. Difficulty in determining the etiology and the possibility that the symptoms are secondary to some other disorders of TMJ or muscles of mastication, initial treatment given should be reversible.



An occlusal splint is removable device usually made of acrylic that fits over the occlusal and incisor surfaces of the teeth in one arch creating precise occlusal contact with the teeth of the opposing arch. The use of occlusal splints either alone or in combination with other treatment modalities is the most common form of pain management in patients with temporomandibular disorders (TMD).

Occlusal splint therapy is chosen for the treatment of dysfunctions. It is relatively simple, reversible, noninvasive and costs less than other treatments.

**Conclusion:** Hence this presentation gives an over view about the clinical efficacy of different type of occlusal splint therapy in the management of myofascial pain dysfunction syndrome.

## Green Synthesis of Silver Nanoparticles Using Psidium Guajava Leaf Extract

**Students** : Mariya M Jos and Niharika T P  
**Supervisor** : Dr. Austin Richard  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

**Methodology:** Silver nanoparticles are prepared by treating 20 ml of 1mM of AgNO<sub>3</sub> (Merck Solution) with 0.2 ml of Psidium guajava leaf extract and stirred for 10 minutes at 30 degree Celsius. The solution appeared light yellow color and then changed to reddish brown color. This solution was kept at 4 degree Celsius for further use.

**Inference:** From this study, we report a very simple, rapid, cost-effective and environment friendly route for green synthesis of silver nano particles using Psidium guajava leaf as reducing as well as capping agent. AgNP has been proved to be biocompatible with mammalian cells suggesting that its application on dental materials does not present a threat to human health. Incorporation of AgNPs into dental materials such as composite resin, endodontic materials, acrylic resin and implants are emphasized. However more studies are necessary to determine the optimal concentration of this silver compound in order to guarantee the anti-microbial effect without increasing its cytotoxicity and to investigate the Ag ion release and long term properties of the new AgNP containing dental materials.

## Aptasensors: An apt approach to oral diagnosis

**Student** : Nandhita Murugavel  
**Supervisor** :  
**College/University** : Government Dental College and Research Institute, Bengaluru

### ABSTRACT:

Early detection of precancerous and cancerous conditions not only saves countless lives, but also vastly improves the quality of such lives. Early detection is one of the primary intents behind recent innovations such as biosensors. Aptasensors constitute a novel subset of the analytical devices known as biosensors. Aptasensors contain synthetic DNA that can assume 3D shapes to bind to a multitude of biochemical species. Its ability to bind to tumorigenic proteins allows it to be usable for both diagnosis and treatment. Its capacity as an ancillary device is promising, and it's economic nature along with its reusability promise it to be a boon to the developing diagnostics of oral health.

## 3D printing- the future of dentistry

**Student** : Sanjana Madarapu  
**Supervisor** :  
**College/University** : JSS Dental College, Mysuru



### ABSTRACT:

Imaging techniques in the field of medicine have progressed significantly in the past few decades. With the advent of MRI and CBCT, the art of diagnosis was revolutionized. However, we are limited to view a 3-dimensional structure in a 2-dimensional screen. An emerging technique called 3D printing or prototyping, or additive technology overcomes this disadvantage by producing three dimensional customized objects. These structures produced from FDA approved materials serve greatly for diagnosis, treatment and educative purposes.

3D printing enables to produce structures made of bio materials in relatively low cost. Not only this technology makes dentistry more affordable, it also reduces the time consumption and adds convenience to the patient. It has ample of applications in the fields of prosthodontics, orthodontics, implantology, diagnostic imaging, restorative dentistry and instrument manufacturing. Its efficiency, flexibility and superior material utilization makes 3D printing fore runner of digital medicine and the future of dentistry. My paper is going to outline the importance of 3D printing in today's world.

## E-POSTERS

# ORIGINAL RESEARCH

Sl. No	Code	Title	Name	College	Pg. No.
1.	OEP01	Characterization of Fluorescent Porcine Dental Pulp Cell Line On Mineral Trioxide Aggregate	Tamaki Hattori	Tsurumi University, Japan	61
2.	OEP02	Hypersensitive Dentin- Current Management Trend	1. Komal R. Rayabagi 2. Anusha I. Katageri	SDM College of Dental Sciences & Hospital Dharwad	62
3.	OEP03	Staining Efficiency of Rose extract compared with Eosin	1. Deepak. R 2. Dheeraj. A. Kumar	Ramaiah University of Applied Sciences	62
4.	OEP04	Oral Nutrition - Saviour ..... of Healthy Life	1. Sesham Lavanya 2. Nandita Hegde	SDM College of Dental Sciences & Hospital Dharwad	63
5.	OEP05	PECAM-1 Overexpression Signifies Aggressive Biological Behavior of Oral Lichen Planus - A Pilot Study	1. Diya Jayanath 2. Anisha Fernandes	Ramaiah University of Applied Sciences	63
6.	OEP06	Unprecedented Approach To Caries Excavation	Shruti Vishwakarma	SDM College of Dental Sciences & Hospital Dharwad	64
7.	OEP07	BURN VICTIM - Identification in forensic odontology with root canal treatment	Maria Yoeffha Kumaralasari	Maharasawati	64



## Characterization of Fluorescent Porcine Dental Pulp Cell Line on Mineral Trioxide Aggregate

**Student** : Tamaki Hattori  
**Supervisor** : Dr. Satoshi Nagasaka  
**College/University** : Tsurumi University, Japan

### ABSTRACT:

**Objectives:** Our study is to prepare fluorescent porcine dental pulp cell line and to characterize it on mineral trioxide aggregate(MTA).

**Methods:** Red fluorescence protein, DsRed, was introduced into immortalized cells (PPU-7) by lipofection method and cloned (DsRed-PPU-7) by limiting dilution method. MTA was mixed with distilled water and formed by a mold of silicon (MTA-disk). (1) MTA-disk was immersed in cell culture medium and DsRed-PPU-7 was seeded on it (MTA-DsRed-PPU-7). Following the culture for additional 5 days, cell proliferation and gene expression of MTA-DsRed-PPU7 were analyzed. (2) To investigate the effect on cell proliferation, MTA-disk was immersed in cell culture medium for 1 day or 7 days and DsRed-PPU-7 was seeded on the disk.

**Results:** The DsRed-PPU7 maintained stable fluorescent chromogenic, high alkaline phosphatase activity, mineralization ability and high expression level of dentin sialophosphoprotein mRNA suggesting that it has a characteristic of odontoblastic-like cells. The observation by fluorescence microscopy showed that MTA-DsRed-PPU-7 possessed the same shape as when it adhered to the culture plate. (1) By day 3 to 5 of the culture, MTA-DsRed-PPU-7 rapidly decreased, but its proliferation recovered after day 5. Doubling time of the cells was calculated from the cell growth curve was almost equal to the culture plate. (2) Even when immersed for 1 day or 7 days, MTA-disk had no effect on cell proliferation of DsRed-PPU-7.

**Conclusion:** These results suggest that the influence of MTA was temporary, and then proliferated normally. This study was funded by JSPS KAKENHI Grant-in-Aid for Scientific Research (C) (18K09627).

## Hypersensitive Dentin- Current Management Trend

**Students** : Komal R. Rayabagi and Anusha I. Katageri  
**Supervisor** :  
**College/University** : SDM College of Dental Sciences and Hospital, Dharwad



### ABSTRACT:

Dentin hyper sensitivity is common clinical condition associated with exposed dentinal surfaces. It can affect patients of any age group and most commonly affects canines and premolars of both arches. This poster concisely reviews the path physiological mechanism and clinical management of the dentinal hypersensitivity. Treatment of dentinal hypersensitivity should start with an accurate diagnosis. Differential diagnosis should be made and all other probable causes should be made excluded.

An often neglected phase of clinical management of Dentinal hypersensitivity is the identification and treatment of the causative factors of dentinal hypersensitivity. By removing the etiological factors the condition can be even prevented from occurring or recurring. There are various treatment modalities available which can be used at home or may be professionally applied. The "at home" desensitizing agents include tooth paste, mouth washes or chewing gums and they act by either occluding the dentinal tubules or by blocking the neural transmission.

This poster discusses the use of casein that is, milk products like butter, cheese, cultured dairy frozen desserts, ice creams, milk, non dairy beverages, milk powder in subsiding dentin hypersensitivity.

## Staining Efficiency of Rose Extract Compared With Eosin

**Students** : Deepak.R and Dheeraj. A. Kumar  
**Supervisor** :  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### ABSTRACT:

**Background:** Natural extract dyes are eco-friendly and non-hazardous when compared to synthetic stains. Routinely, H & E stain is used to stain oral tissues. Eosin is a synthetic stain and attempts have been made to substitute eosin with a natural dye, one among which is the rose extract. Staining using rose extract is economical, easily available and has not been explored before.

**Aim and objective:** The study aims to compare between two different extraction methods for rose namely, maceration and soxhlet, to compare staining efficacy of rose with and without mordant, to compare efficacy of rose extracts with synthetic eosin in normal oral tissues.

**Materials and Methods:** Rose was dried, powdered and extracted by maceration and soxhlet techniques. Tissue sections were stained with and without the mordant potassium alum. Hematoxylin and rose (H & R) and hematoxylin and eosin (H & E) stained normal oral tissues were compared. Statistical analysis was done using Chi square test.

**Result:** Statistically significant results were observed in sections stained by soxhlet method than that of maceration, sections stained by rose extract with mordant (REM) was comparatively better than those stained with rose extract alone, the normal tissues stained with H & R gave comparable result with H & E.

**Conclusion:** Rose extract with mordant can be used as a substitute to eosin for the staining of oral tissues.

**Clinical Significance:** Natural substitute for synthetic eosin

## Oral Nutrition – Saviour ..... of Healthy Life

**Students** : Sesham Lavanya and Nandita Hegde  
**Supervisor** :  
**College/University** : SDM College of Dental Sciences and Hospital, Dharwad



### ABSTRACT:

Nutrition concerns the assimilation of food and its effects on the metabolic process of the body. Your general health and the health of your teeth and gums too. Oral health is related to diet in many ways, for example: nutritional influence on craniofacial development, oral cancer and oral infectious diseases. Dental disease impact considerably on self-esteem and quality of an association between nutrition, diet and dental diseases and to present dietary recommendations for their prevention. Nutrition, the food you choose and how often you eat them can affect affects the teeth during development and malnutrition may exacerbate periodontal and oral infectious diseases. Many researchers believe that the disease progresses faster and is potentially more severe in people with poor nutrition. Dental diseases include dental caries, developmental defects of enamel, dental erosion and periodontal disease. Approximately 5% of cancer diagnosis is related to individuals having poor dietary habits. Despite a low mortality rate dental disease, they have a considerable impact on self-esteem, eating ability, nutrition and health in humans. Teeth are important in enabling consumption of a varied diet and in preparing the food for digestion. As oral health is a part of general health its important to maintain oral health to prevent malnutrition.

## PECAM-1 overexpression signifies aggressive biological behavior of oral lichen planus - A pilot study

**Students** : Diya Jayanath and Anisha Fernandes  
**Supervisor**  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

### ABSTRACT:

**Context:** The etiopathogenesis of oral lichen planus (OLP) is still debatable. According to literature, many studies have illustrated OLP as a T&#8209;cell&#8209;mediated chronic autoimmune disease. Currently, there is increased evidence of chronic inflammation in OLP and its association with vascular adhesion molecules (VAMs).

**Aim:** The aim of this study was to evaluate the expression of VAM (PECAM&#8209;1) in OLP.

**Setting and Design:** Tissue samples involved 20 archival cases of histopathologically confirmed OLP (n = 15) and normal mucosa (n = 5) as controls.

**Materials and Methods:** The sections were subjected to immunohistochemical analysis using antibody to PECAM&#8209;1. Brownstaining of the endothelial cells of blood vessels was considered positive. The expression of PECAM&#8209;1 in OLP was statistically analyzed using Wilcoxon sign&#8209;rank test.

**Results:** The expression of PECAM&#8209;1 in OLP was statistically significant when compared with normal mucosa (P < 0.05).

A statistically significant difference was also observed in PECAM&#8209;1 expression between the reticular type and erosive type of OLP.

**Conclusion:** PECAM&#8209;1 was found to be overexpressed in OLP; difference in PECAM&#8209;1 expression was noted between the reticular and erosive types. The VAMs could be exploited as a possible therapeutic target in OLP to modulate the disease process thereby reducing the dependency on corticosteroids

## Unprecedented Approach To Caries Excavation

**Students** : Shruti Vishwakarma  
**Supervisor** : Dr. Mahantesh Yeli  
**College/University** : SDM College of Dental Sciences and Hospital, Dharwad



### ABSTRACT:

Conventional paradigm towards caries management necessitates removal of all infected tissue, extending the cavity margins upto sound structures. By this, in the case of deep carious lesions the aim of removing bacteria superordinates the aim of not harming pulp during tissue removal. Thus majority of times vital tooth has to undergo RCT or pulpotomy, thus decreasing the survival rate thereby increasing treatment complexity and cost by several folds.

Stepwise removal of carious tissue is performed in two visits. Firstly, demineralised soft dentin is left pulpally & hard dentin is left peripherally. A temporary restoration is placed for 12 months. In this period sealed bacteria are deprived of nutrition and their number is reduced, simultaneously remaining carious dentin is remineralized and reactionary dentine development is stimulated. In the next visit a permanent restoration is placed by selective removal till firm dentine remains pulpally.

Partial removal of caries involves complete removal of carious tissue from the cavity walls but limited removal from the pulpal and axial wall for establishing areas of bond formation with resin based materials or providing complete seal and marginal integrity with silver based materials. It works on the same principle as Stepwise removal but this is done under a single visit. Experimental studies support better prognosis by this method.

Hence, the purpose of this poster is to change the approach taken regularly by all dental professionals and opt for a less invasive carious tissue management by preserving tooth tissue and retaining teeth long term.

## Burn Victim Identification In Forensic Odontology With Root Canal Treatment

**Students** : Maria Yosefha Kumalasari, Dewa Made Wedagama and Ni Wayan Arni Sardi  
**Supervisor**  
**College/University** : Fakultas Kedokteran Gigi, Universitas Mahasaraswati, Indonesia

### ABSTRACT:

Victim identification is very important to do as it is an act of humanity. Problems will arise when a visual identification cannot be done, therefore a dental identification is the feasible option. The purpose of root canal treatment is to keep the teeth sealed in its place, thus the method can be used as way to identify burn victim by matching ante mortem and post mortem data. This study aimed to determine whether root canal treatment can be used to identify burn victims. This study is an experimental research using Federer sampling formula. Included in the study were 27 samples that were divided into 3 groups in which each group were going through torching treatment at temperature of 300oC, 450oC and 500oC. The data were analyzed using Chi-Square statistical test. The result showed significance value of  $>0.05$  which meant there was no either compaction of root canal filling, melting of root canal filling, or shrinkage of tooth size. Based on the results of this study, we can conclude that root canal treatment can be used as a method to identify burn victims.

## E-POSTERS

# TECHNICAL NOTE

Sl. No	Code	Title	Name	College	Pg. No.
1.	EPTN01	Bio-mimetics	1. Varun Malagimani 2. Nikhith Navin Kumar	SDM College of Dental Sciences & Hospital Dharwad	67
2.	EPTN02	3D Printing Applications In Orthodontics	1. Impana Vijaykumar 2. Anusha Mundargi	SDM College of Dental Sciences & Hospital Dharwad	67
3.	EPTN03	A Ray of Hope: Disinfection of Root Canals Using Lasers	1. Parvathi Sudeep 2. Reshma Haridas	CIDS	68



## Bio-mimetics

**Students** : Varun Malagimani and Nikhith Navin Kumar  
**Supervisor** :  
**College/University** : SDM College of Dental Sciences, Dharwad



### ABSTRACT:

Bio-mimetic materials are widely used nowadays because of their excellent properties, such as bio-compatibility and good physico-chemical properties. These materials have helped in transformation of dentistry. All these are attributed because of its success in functioning as long-lasting aesthetic, restorative materials, cements, root repair materials, root canal sealers, filling materials, and antibacterial properties. Every person desires that whatever is to be restored shall be restored in such a way that it resembles the natural structure. Bio-mimetics satisfies this principle.



## 3D Printing Applications in Orthodontics

**Students** : Impana Vijaykumar and Anusha Mundargi  
**Supervisor**  
**College/University** : SDM College of Dental Sciences and Hospital, Dharwad

### ABSTRACT:

3D printing has now taken a new stage in dentistry where in exact dimensions, replica, accuracy of dental restoration prosthesis and appliances can be delivered in the best comfort and in the need of patient. This scientific tool has got its wide spread applications including in orthodontics. The present paper will highlight various possibilities and future endures using 3D technology using 3D printing in orthodontics. 3D printing is the process of making 3D objects from the digital file. The STL format is then sent to 3D printers where the layer by layer an entire 3D object is formed. Its advantage is being enhanced in treatment procedures faster and more precision treatment to the patients with superior technology many of the orthodontic appliances such as retainers, function appliances, clear aligners, expansion devices, brackets, wires and indirect bonding in lingual orthodontics can be done.

## A Ray of Hope: Disinfection of Root Canals using Laser

**Students** : Parvathi Sudeep and Reshma Haridas  
**Supervisor** : Dr. K.C. Ponnappa  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Every year, millions of teeth are treated and more importantly saved with root canal treatment, which becomes necessary when the dental pulp, the living tissue deep inside the tooth, becomes inflamed or infected. Like every other conventional treatment procedure with disadvantages, even the conventional root canal treatment has its own demerit in the form of excessive post – operative bleeding and inadequate removal of bacterial contaminants in the bacterial space.

In today's world, Light Amplification by Stimulated Emission of Radiation (LASER) are even replacing drills and other traditional tools for some dental procedure. They can also be utilized in root canal spaces to remove bacteria and infected material with greater accuracy, thus preserving more of the healthy tooth structure. There are even reports of less bleeding intra – operatively and reduced infection post – operatively.

## E-POSTERS

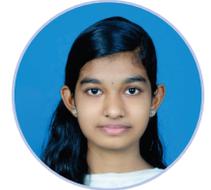
# CASE REPORTS

Sl. No	Code	Title	Name	College	Pg. No.
1.	EPCR01	Low grade mucoepidermoid carcinoma mimicking a mucocele with an unusual whorling of tumor cells	1. Amrita Menon 2. Akansh Roy	SDM College of Dental Sciences & Hospital Dharwad	71
2.	EPCR02	Granular cell ameloblastoma of mandible - Report of a case with an emphasis on its multiple recurrence.	1. Asiya Begaum Sayed 2. Divya Shonima	SDM College of Dental Sciences & Hospital Dharwad	71
3.	EPCR03	Unusual odontogenic cyst with diverse histological features	1. Savarna Goswami 2. Dr. Kiran Kumar (Faculty)	SDM College of Dental Sciences & Hospital Dharwad	72
4.	EPCR04	A Midline Swelling of The Mandible: A Case Report	1. Anand Chowdhary 2. Ankita Sancheti 3. Dr. Roshni Monteiro (PG Student) 4. Dr. Swetha Acharya (Faculty)	SDM College of Dental Sciences & Hospital Dharwad	72
5.	EPCR05	Unusual Report of Localized Oral Amyloidosis of Buccal Mucosa	1. Alpana Rani 2. G. Mridula 3. Dr. Roshni Monteiro 4. Dr. Swetha Acharya (Faculty)	SDM College of Dental Sciences & Hospital Dharwad	73
6.	EPCR06	Lichen Planus	1. Kaveri Malaghan 2. Ponnapati Bala Manvitha	SDM College of Dental Sciences & Hospital Dharwad	73
7.	EPCR07	A rare case of Langerhans cell histiocytosis of the mandible in an adult	1. Alen Davis 2. Ananya	SDM College of Dental Sciences & Hospital Dharwad	



## Low grade mucoepidermoid carcinoma mimicking a mucocele with an unusual whorling of tumor cells

**Students** : Amrita Menon, Akansha Roy  
**Supervisor**  
**College / University** : SDM College of Dental Sciences, Dharwad

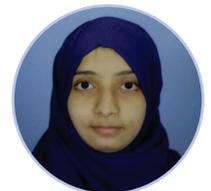


**ABSTRACT:**

Malignant neoplasms of the salivary glands are rare and represent 3 to 5% of all malignant tumors that occur in the head and neck region. Mucoepidermoid carcinoma (MEC) accounts for approximately 30% of all malignant salivary gland neoplasm (MSGN) that originates in both major and minor glands. MEC is the most frequent MSGN in the oral cavity. Minor salivary gland tumor also appears as asymptomatic swellings, which are sometimes fluctuant and have a blue or red colour that can be mistaken clinically for a mucocele. Although the lower lip, floor of mouth, tongue and retromolar areas are uncommon sites salivary glands neoplasia. MEC is composed of varying proportions of mucous, epidermoid, intermediate, columnar and, clear cells and often demonstrate a prominent cystic growth pattern. This epithelial tumor derived from the reserve cells of the excretory duct, manifests variable biologic aggressiveness, basically showing correlation with its histological features and is graded by a 3-tiered system- low, intermediate and high. Present report illustrates a case of a 21year old male patient who presented with a swelling in right lower back region of jaw since 6 months. Intraoral examination revealed a painless, fluctuant bubble of 2x1cm with clear boundaries in the right retromolar region, which was diagnosed as mucocele clinically. Excised mass revealed typical features of low MEC along with spindling and whorling of tumor cells. IHC of SMA was done to exclude pleomorphic adenoma. This report emphasizes the importance of early diagnosis and proper management of such deceptive presentations.

## Granular cell ameloblastoma of mandible - Report of a case with an emphasis on its multiple recurrences.

**Students** : Asiya Begaum Sayed and Divya Shonima  
**Supervisor**  
**College/University** : SDM College of Dental Sciences, Dharwad



**ABSTRACT:**

Ameloblastoma is a most common benign odontogenic tumor with an variable aggressive biological behavior, and their surgical treatment frequently results in failure for the postoperative recurrence. It accounts for approximately 10% of all tumors originating from gnathic bones. It exhibits diverse microscopic patterns which occurs either singly or in combination with other patterns. Granular cell ameloblastoma is a rare condition, accounting for 3.5% of all ameloblastoma cases that shows marked transformation in the cytoplasm of tumor cells, which are usually stellate reticulum like cells. The transformed cells possess very coarse, granular, eosinophilic cytoplasm. The "granular change" is thought to be due to a dysfunctional status of neoplastic cells, and the pathogenesis of this tumour seems to be age-related. Ultrastructural, histochemical, and immunohistochemical studies have revealed that cytoplasmic granularity is caused by overload; however the mechanism involved remains poorly understood. The present case report describes a case of granular cell variant of ameloblastoma with desmoplasia affecting a 50-year old male.

## Unusual odontogenic cyst with diverse histological features

**Student** : Savarna Goswami  
**Supervisor** : Dr.Kiran Kumar  
**College/University** : SDM College of Dental Sciences, Dharwad

### ABSTRACT:

An unusual odontogenic cyst, which was originally believed to be a dentigerous cyst clinically associated with an impacted mandibular third molar, histologically demonstrated the characteristics of a dentigerous cyst, glandular odontogenic cyst and odontogenic keratocyst. The cyst lining was predominantly composed of reduced enamel epithelium type with some mucous cells, goblet and ciliated cells. Characteristic histopathologic features of a glandular odontogenic cyst like variable thickness of nonkeratinized stratified epithelium with superficial layer of epithelium consisting of columnar or cuboidal cells, ciliated and goblet cells. The epithelium also had glandular or pseudoglandular structure, with intra-epithelial crypt or microcyst formation. There were epithelial plaques and glandular structures with eosinophilic secretions. There were few areas the lining composed of parakeratinized stratified squamous epithelium being separated from the underlying capsule as in an odontogenic keratocyst. These histologic diversities were interpreted as a reflection of the pluripotentiality of the epithelial remnants of the mandibular third molars or dentigerous cyst epithelium. However, the varied histopathological features in the present case did not specify any one type of cyst and so a final diagnosis of odontogenic cyst was made. The present poster presentation reports an unusual odontogenic cyst with diverse histological features.

## A Midline Swelling of The Mandible: A Case Report

**Students** : Anand Chowdhary and Ankita Sancheti  
**Supervisor** : Dr. Swetha Acharya  
**College/University** : SDM College of Dental Sciences, Dharwad



### ABSTRACT:

The aneurysmal bone cyst (ABC) is an uncommon lesion found mostly in skeletal bones, majority occurring in the long bones and spine. In spite of being characteristically cystic and blood filled, the term “aneurysmatic” indicates the radiographic appearance of a “blow-out” effect or expansion of the affected bone as suggested by Jaffe and Lichtenstein. The ABC of the jaw is a pseudocyst comprising 5% of all the lesions of the cranial and maxillofacial bones. It is most common in regions where there is a relatively high venous and marrow content and has preponderance for the body, ramus and angle of the mandible. Although regarded as probably reactive, the true nature remains uncertain. ABCs exist in two clinicopathological forms—as a primary or as a secondary lesion arising from another osseous condition like fibrous dysplasia, cementifying fibroma, central giant cell granuloma (CGCG) etc. Grossly, ABCs are spongy, haemorrhagic masses covered by a thin shell of the reactive bone. Microscopically, the lesions consist of many capillaries and blood-filled spaces of varying size lined by flat spindle cells and separated by delicate loose-textured fibrous tissue. Most lesions contain small multinucleate cells and scattered trabeculae of osteoid and woven bone. Some solid areas contain sheets of vascular tissue, with multinucleate giant cells, fibroblasts, haemorrhage and hemosiderin, resembling giant cell granuloma of the jaws. This report illustrates a case of ABC with CGCG in a 15-year- old female who presented with a midline mandibular swelling, which was provisionally diagnosed as fibrous dysplasia.



## Unusual Report of Localized Oral Amyloidosis of Buccal Mucosa

**Sudents** : Alpana Rani and G. Mridula  
**Supervisor** : Dr Roshni Monteiro  
**College/University** : SDM College of Dental Sciences and Hospital, Dharwad



### ABSTRACT:

Amyloidosis represents a group of conditions in which there is extracellular deposition of amorphous fibrillar proteins, termed 'amyloid'. This rare disease results from a sequence of changes in protein folding and occurs in response to various cell dyscrasias or inflammatory conditions. Amyloid deposits can be localised or systemic, and can be large to impair normal tissue function. Localised amyloidosis (LA) is a rare subtype of amyloidosis, which only involves a limited site without any systemic disease and has an excellent prognosis. LA is mainly caused by the AL (immunoglobulin light chain Amyloid) amyloid, which is produced and deposited in local sites (Monoclonal B cells or plasma cells in lesion area secreting monoclonal immunoglobulin light chain into the immediate vicinity). LA affecting the head and neck is uncommon and usually benign. Oral amyloidosis (OA) occurs mostly as LA, although when present in tongue, it may be linked to the systemic disease. Localized oral amyloidosis (LOA) is relatively rare, accounting for less than 9% of cases. OA is less frequent, and usually appears as multiple yellow-white soft nodules, widespread purple bulla-like masses, ecchymosis, papules and ulcer, which frequently involves, floor of mouth, gingival and buccal mucosa. Symptoms include bleeding, painless nodules, sores and swelling. Differentiating OA from a tumor is clinically difficult and requires a biopsy. This presentation illustrates a report of 66-years-old male who underwent a series of investigations to confirm the diagnosis of LOA, a rare entity, which was provisionally diagnosed as lichenoid reaction of left buccal mucosa.

## Lichen Planus

**Students** : Kaveri Malaghanand Ponnepati Bala Manvitha  
**Supervisor**  
**College/University** : SDM College of Dental Sciences, Dharwad

### ABSTRACT:

The term 'Lichen Planus' was coined by Erasmus Wilson in 1869. It is a common mucocutaneous disease, it affects 0.5%-1% of the world's population. It is a common chronic dermatologic disease that often affects the oral mucosa. It can cause Bilateral white striations, papules or plaques in the oral cavity. It is a T cell mediated immune response. It can also be caused by stress, allergens, viral infection. Incidence of Oral squamous cell carcinoma is seen in patients with Oral Lichen Planus. 0.3%-3% cases undergo malignant transformation. There are three types- reticular, erosive, and atrophic. Middle aged people are generally affected with female predominance. WICKHAM'S STRIAE is a characteristic clinical feature in oral mucosa. They are whitish lines visible in the papules. Extra oral lesions include glans penis, nails, scalp. On histopathological examination, atrophic keratinized stratified squamous epithelium with saw tooth like rete pegs, infiltrate of predominantly T-lymphocytes is present sub adjacent to the epithelium and melanophages are seen. Treatment modalities: corticosteroids, antihistamines, retinoids, nonsteroidal creams, ultraviolet light therapy. Natural treatment: turmeric, epsom salt baths, oats, tea tree essentials oils-based mouth washes and stress management, folate rich food can also be used.



E-POSTERS  
**REVIEWS**



# ABSTRACTS

Sl. No	Code	Title	Name	College	Pg. No.
1.	REP01	Caries infiltration technique	1. Tanushree S Rao 2. Shruti Srivastava	Government Dental College Bangalore	
2.	REP02	Smart Materials In Restorative Dentistry	1. Samantha Ganapathy 2. Tarini Subbiah	CIDS	79
3.	REP03	Macrouniverse of Microbodies	Aiswarya Premanand	Ramaiah University of Applied Sciences	79
4.	REP04	The Facts, Stats and Dangers of Soda Pop	1. Anitta Augustine 2. Mariya M Jose	CIDS	79
5.	REP05	Neoneurogenesis In Cancer : Pathogenesis and Therapeutics	1. SYEDA ZUMRA 2. T'seng Yan Soun	SDM College of Dental Sciences and Hospital Dharwad	80
6.	REP06	Peek (S) In Prosthodontics	1. Chethan Kumar 2. Neha Nizar	CIDS	80
7.	REP07	Nuclear Medicine In Dentistry : New A venues To Explore	1. Thejaswini MJ 2. Lina Priya	SJM Dental College & Hospital Chirtadurga	81
8.	REP08	Digital Thermal Imaging( DTI) – as novel technique for early detection of oral cancer	1. Anushka Nair 2. Sagarika Manmohan	Ramaiah University of Applied Sciences	
9.	REP09	Use of Silver Nanoparticle In Dental Products	1. Vijay Singh Jadoun 2. Poukhuan	Panmei Dayananda Sagar College of Dental Sciences	81
10.	REP10	Analgesics In Dentistry	1. Merin Alphonsa Johnson 2. Sneha Pankajakshan	CIDS	82
11.	REP11	Radiation Hazards	1. Vasanth Kumar Kr 2. M S Yousuf	SJM Dental College & Hospital Chirtadurga	82
12.	REP12	Impression Free Models	1. Anushka Bobde 2. Tsering Dolma	CIDS	83
13.	REP13	Embracing Dentistry The Virtual Way – Digital Dentistry	Sanjana Madarapu	JSS Dental College and Hospitals, Mysuru	83
14.	REP14	Laser Therapy On Soft Tissues	1. Nawar Jabeen Ptp 2. Manu Ajith Thomas	CIDS	84
15.	REP15	LASER IN DENTISTRY	1. Sharan Prakash 2. Swetha K	Government Dental College Bangalore	84
16.	REP16	Mastication and Cognitive Function	1. Viswajith Gangadharan 2. Sindiya Balram	CIDS	85
17.	REP17	A Journey into the shadow world of ghost cells	1. Runal Sarkar 2. Shayari Kolathaya N	SDM College of Dental Sciences and Hospital Dharwad	85

Sl. No	Code	Title	Name	College	Pg. No.
18.	REP18	Use of Antibiotics In Dentistry	1. Sneha Suresh 2. Rameesa T	CIDS	86
19.	REP19	3D Printing In Dentistry	1. Harshitha M 2. Jui Rajeev Joglekar	Ramaiah University of Applied Sciences	86
20.	REP20	Comprehensive Management of Facial Asymmetry Secondary to Condylar Pathology.	1. Swaroop Varghese M 2. Simrit Bhat	SDM College of Dental Sciences and Hospital Dharwad	87
21.	REP21	Nuclear Imaging	1. Aakarsh 2. Shilpa	VS Dental College	
22.	REP22	Fusion Imaging	1. Rajaram 2. Samhita	VS Dental College	
23.	REP23	Botox – The Quick Fix For Gummy Smiles	1. Anno C Panoose 2. Annu Maria John	CIDS	87
24.	REP24	Nanotechnology In Biointegration	1. Annie 2. Anjana	VS Dental College	
25.	REP25	3D Printing - A New Era In Dentistry	1. Josna George 2. Safna Usman	CIDS	88
26.	REP26	Oral Cancer- Your Chances of Beating It On How Soon You Find It!	1. Vyom Shukla 2. Bhavana Dama	Ramaiah University of Applied Sciences	88
27.	REP27	Wharfe's Assessment	1. Vasudha Bharadwaj J 2. Treesa Mary Joseph	CIDS	89
28.	REP28	Surgical Navigation In Orofacial Surgery	1. Akshay 2. Anushelque	VS Dental College	
29.	REP29	Lasers in Orthodontics	1. Sandra Rajeev 2. Abhirami KV	CIDS	89
30.	REP30	PRP in treatment of TMJ disorders	Muhammed Anushelque	VS Dental College	
31.	REP31	Atraumatic Extraction Procedures	1. Sangeetha S 2. Shringa	CIDS	90
32.	REP32	Nano Robots – A New Horizon	Niharika	CIDS	90

## Smart Materials In Restorative Dentistry

**Students** : Tarini Subbiah and Samantha Ganapathy  
**Supervisor** : Dr. K.C. Ponnappa and Dr. Salin  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Dental materials used for restorations are considered to survive longer if they are passive and have no interactions with their environment. These are materials such as amalgam, cements and composites.

However, positive gains can be achieved by using materials that behave active rather than passive and can be altered in a controlled manner by a stimulus such as temperature, pH, stress, moisture, etc. in order to bring about beneficial changes to the surrounding tooth structures. These 'smart' materials hold promising future in terms of improved efficiency and reliability of the materials and can revolutionize dentistry.



## Macrouniverse of Microbodies

**Student** : Aiswarya Premanand  
**Supervisor** : Dr. Sivaranjani  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru



### ABSTRACT:

It is important for the oral pathologist to be familiar with the different pathological cells and bodies as they very often tend to occur in various diseases and conditions. The normal cells in certain conditions are modified to become pathological which may be pathognomic. Inclusion bodies are nuclear or cytoplasmic aggregates of stainable substances usually proteins which are mostly formed due to viral multiplication or genetic disorders in human beings. In spite of most these inclusions and cells not being pathognomic, they inevitably help the pathologist in making a diagnosis.

## The Facts Stats and Dangerous of Soda Pop

**Students** : Anitta Augustine and Mariya M Jos  
**Supervisor** : Dr. Anand S.R.  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Soda pop consumption has increasingly become a factor in oral disease. Clinically, demineralization occurs, with erosion of tooth surfaces and caries being evident. The bacteria colonize the outer surface of the enamel, form dental plaque and begin metabolizing carbohydrates, such as the sugars sucrose and fructose, which causes a lowering of the pH of saliva and a consequent demineralization of the enamel. Other dangerous include acid erosion, missing surface details, xerostomia and acidosis of mucosa.

Preventive measures include limiting the number of servings per day and reducing the time taken for consumption. Use a straw for drinking and wait for at least 30 minutes after your teeth is flushed in soda.

A dental team with its expertise and training can intervene with diet counseling, home care instruction, fluoride therapy and professional application of sealants to decrease the potential ravages of soda pop.



## Neoneurogenesis In Cancer: Pathogenesis and Therapeutics

**Students** : Syeda Zumra and T'seng Yan Soun  
**Supervisor**  
**College/University** : SDM College of Dental Sciences and Hospital, Dharwad



### ABSTRACT:

Many studies have been done with respect to tumor angiogenesis and lymph angiogenesis, yet little is known about the reciprocal interaction between the tumor and nerves – NEONEUROANGIOGENESIS.

Tumor cells benefit from the neural factors and create a friendly environment for it to thrive in. They also secrete neurotrophic factors that help in the development of new axons.

Neurotransmitters play a role in the progression and metastasis of the tumor by stimulation of other smaller nerves in the vicinity of the tumor. Nerves are also known to alter the phenotypic features of the tumor to which they supply.

In the head and neck region, majority of the nerve supply comes from Vth and VIIth cranial nerves which accounts for the centripetal metastasis of tumors of this regional, eg. Perineural invasion in squamous cell carcinoma. It has been theoretically proven that the role of drugs like beta blockers and antidepressants can be beneficial in the therapy of the tumor. Blocking of the innervation or nerve bundle disruption of the tumor has been known to limit the growth and metastasis of the tumor.

The motif of this E-poster is to better understand the role of Neoneuroangiogenesis in cancer and how it can help in its prevention and therapy.



## Peek(s) In Prosthodontics

**Students** : Chethan Kumar and Neha Nizar  
**Supervisor** : Dr. Gayathri K. and Dr. Unni P.  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

PEEK is a semi crystalline linear polycyclic thermoplastic that has been proposed as a substitute for metals in biomaterials. Its uses in prosthodontics is with CPD, CD, implant, maxillofacial prosthesis PEEK has been modified by the incorporation of TIO<sub>2</sub>, HAF and HAP. This Review summarizes the current research on PEEK applications in prosthodontics, also it deals with the newer advancement.



## **NUCLEAR MEDICINE IN DENTISTRY: New avenues to explore**

**Students** : Thejashwini MJ and Lina Priya

**Supervisor**

**College/University** : SJM Dental College and Hospital, Chitradurga

### **ABSTRACT:**

Nuclear medicine and radioactive tracers have considerable application in dental research. It is a branch or specialty of medicine and medical imaging that uses radionuclide and relies on the process of radioactive decay in diagnosis and treatment of disease.

Nuclear medicine provides few practical methods for studying the limited metabolic activities of bones and teeth. They are useful in studying many problems of calcification and mineral exchange. There are also opportunities of their use in investigating fluorosis, caries protection, periodontal disease, micro leakage studies of dental materials, root resorption, nutritional, and endocrine effects, as well as numerous other dental problems.

It also provides information on pathophysiological and Pathobiochemical process they are designed to demonstrate normal or altered function of organ tissue or system radioisotopes and many application in the field of medicine. Other usages of nuclear medicine in dentistry are listed below: Age detection in teeth by nuclear tests, scintigraphic evaluation of osteoblastic activity, and evaluation of osteoblastic activity around dental implants using bone scintigraphy. Nuclear medicine can be an indicator of "active" alveolar bone loss. Nuclear medicine techniques are used as an adjunct for the diagnosis of oral diseases (benign tumors and carcinomas) and temporomandibular joint disease.

## **Use of Silver Nanoparticle In Dental Products**

**Student** : Vijay Singh Jadoun

**Supervisor**

**College/University** : Dayananda Sagar College of Dental Sciences, Bengaluru

### **ABSTRACT:**

Silver has been used in medicine for centuries because of its antimicrobial properties. More recently, silver nanoparticles have been synthesized and incorporated into several biomaterials, since their small size provides great antimicrobial effect, at low filler level. Hence, these nanoparticles have been applied in dentistry, in order to prevent or reduce biofilm formation over dental materials surfaces. This review aims to discuss the current progress in this field, highlighting aspects regarding silver nanoparticles incorporation, such as antimicrobial potential, mechanical properties, cytotoxicity, and long-term effectiveness.

## Analgesics In Dentistry

**Students** : Merin Alphonsa Johnson & Sneha Pankajakshan  
**Supervisor** : Dr. Amrit Nanaiah  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

To prevent patient pain, the clinician may choose from non-opioid to opioid analgesics. It is rational for the practitioner to combine these drugs from these classes to manage moderate to severe pain. To select combination regimens wisely, it is necessary to understand the significant pharmacological features of each category alone. There are several groups of analgesic drugs used in dental practice and most frequently are Non-Steroidal Anti Inflammatory Drugs (NSAIDs). The contemporary strategies for the treatment of odontogenic pain are focused in analgesic drug combinations, which are more effective and have a better safety profile. Ibuprofen and Acetaminophen agents are considered gold standard of dental analgesia for mild to moderate intensity of pain. While in moderate to severe pain, the use of individual opioid analgesics or combination of opioid and non-opioid analgesics is recommended. The treatment of pain in children and elderly patients is associated with some limitations accompanied with safety concerns and dose reduction. Selection of drugs and its dosage must be done with extreme caution especially when treating patients with underlying diabetes, hepatic, renal or cardiac conditions. Treatment of pain in dentistry should be focused in achieving the satisfactory levels of analgesia at low doses possible.

## Radiation Hazards

**Students** : Vasantha Kumar K R  
**Supervisor**  
**College/University** : SJM Dental College and Hospital, Chitradurga



### ABSTRACT:

For many years x-rays have been used in the dental profession as a diagnostic tool. The effect of X-rays cannot be immediately felt or seen, and therein lies the hazard attending their use. What cannot be sensed is often ignored and, through unconcern and neglect, injudicious exposure resulting in biological impairment or damage may result. Even though such exposure is less, it is critical to reduce the exposure to the dental personnel and patients in order to prevent the harmful effects of radiation. Several radiation protection measures have been advocated to ameliorate these effects. It was this reason that an investigation of the potential hazard occurring during dental roentgenography was undertaken. The aim is to review important parameters that must be taken into consideration in the clinical set-up to reduce radiation exposure to patients and dental personnel.

## Impression Free Models

**Students** : Anushka Bobde and Tsering Dolma  
**Supervisor** : Dr. Goutham Reddy & Dr. Vikram Susil  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

The diagnostic information from plaster models when converted to digital files are highly accurate, however this approach is also prone to errors. Eliminating physical impressions altogether is ultimately where technology is leading. This poster highlights the superiority of an intra oral scanner in obtaining digital models for orthodontics. It also shows its ease of use in a dental clinic. Also, the accuracy of digital models is greater, especially for complex measurements like space analysis, Bolton's analysis, when compared to the plaster models.

The most important expectation from a digital model system is its high diagnostic accuracy and reliability. Elimination of the conventional impression and generation of dental models directly from 3D dental anatomy will yield more accuracy. Since, an intra oral scanner emits only optical radiation, exposing the patient to radiation is avoided. These are self-contained in rolling units, making them portable around the office.

## Embracing Dentistry The Virtual Way- Digital Dentistry

**Student** : Sanjana Madarapu  
**Supervisor**  
**College/University** : JSS Dental College, Mysuru



### ABSTRACT:

In today's world, health care system is being revolutionized with the advent of digitalization. With the highly advanced digital solutions for impression scanning, digital manufacturing and treatment planning, what were inaccessible is rapidly becoming accessible transforming thousands of labs worldwide.

Digital dentistry minimizes the flaws and uncertainties produced by manual methods, delivering greater precision, accuracy and consistency at every stage of the treatment. One of the most significant merits of welcoming digitalization is improved patient experience and comfort. Intraoral scanning, 3D printing and CAD software have reshaped the efficiency and quality of health care delivery. The applications of digital techniques open up new horizons in ample fields like smile designing, regenerative and maxillofacial surgery, implant surgery and fixed prosthesis. Although, digital revolution opens up fascinating scenarios and possibilities, it also presents as a challenge for dentist and their team in understanding the way of integration of this great knowledge and new software techniques efficiently into the workflow.

## Laser Therapy On Soft Tissues

**Students** : Manu Ajith Thomas and Nawar Jabeen PTP  
**Supervisor** : Dr. Sharath Uthappa  
**College/Univeristy** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

One of the most exciting developments in medical technology is laser, with claims of often dramatic reductions in duration of surgical procedures, the degree of post-operative scarring, patient recovery times, post-operative morbidity and edema, as well as claims of soft tissue bio stimulation and management of chronic pain. This E-POSTER describes about the use of laser treatment therapy on soft tissue.

## Laser In Dentistry

**Students** : Sharan Prakash and SWETHA K  
**Supervisor** : Dr. Mallika  
**College/University** : Government Dental College, Bengaluru



### ABSTRACT:

The term LASER is an acronym for 'Light Amplification by the Stimulated Emission of Radiation'. As its first application in dentistry by Miaman, in 1960, the laser has seen various hard and soft tissue applications. In the last two decades, there has been an explosion of research studies in laser application. In hard tissue application, the laser is used for caries prevention, bleaching, restorative removal and curing, cavity preparation, dentinal hypersensitivity, growth modulation and for diagnostic purposes, whereas soft tissue application includes wound healing, removal of hyperplastic tissue to uncovering of impacted or partially erupted tooth, photodynamic therapy for malignancies, photostimulation of herpetic lesion. Use of the laser proved to be an effective tool to increase efficiency, specificity, ease, and cost and comfort of the dental treatment.

## Mastication and Cognitive Function

**Students** : Viswajith Gangadharan and Sindiya Balram  
**Supervisor** : Dr. Gayathri K.  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Mastication as we all know has always been related to its primary function of digestion, but little do we know that it produces an enhancing effect on general health, especially the cognitive performance related aspects of memory. Recent studies have shown its association with activation of various brain regions, however little is known about its effects on neuronal activity in these specified regions. According to the enormous evidences collected so far, mastication has proved to be effective in conducting huge amount of sensory information to the brain, and maintaining learning and memory functions of hippocampus. Therefore it is essential that we maintain normal occlusion and preserve the masticatory function as long as possible to prevent the attenuation of hippocampus, caused by occlusal disharmony and reduced mastication. We provide an overview on how mastication activates various cortical areas of the brain and how an increase in the cerebral blood oxygen level of hippocampus and prefrontal cortex (PFC) accentuates the learning and memory process. We also justify why maintaining and establishing a normal occlusion is important from neurological point of view.

## A Journey into the shadow world of ghost cells

**Students** : Runal Sarkar and Shayari Kolathaya N  
**Supervisor**  
**College/Univerity** : SDM College of Dental Sciences and Hospital, Dharwad

### ABSTRACT:

The ghost cells are enlarged, ballooned, ovoid or elongated, ellipsoid with eosinophilic cytoplasm, but without a nucleus leaving only a faint outline, hence the term "ghost". In routine H and E staining these cells give a shadowy appearance so they are also called as shadow cells or translucent cells. The appearance of these cells varies from lesion to lesion involving odontogenic and nonodontogenic lesion. The outlines of ghost cells sometimes be blurred, and hence that groups of them appear fused. Ghost cells may undergo calcification and lose their cellular outline to form sheet-like area. Highman and Ogden (1944) first described ghost cell in pilomatricomas. Ghost cells are characteristically seen in CCOT, craniopharyngiomas and pilomatricomas. Other lesions exhibiting ghost cells are odontomas, dentinogenic ghost cell tumor, dentinogenic ghost cell carcinoma, ameloblastoma, ameloblastic fibroma. Controversy arises because of the fact that there are varying opinions by several investigators regarding the true characteristics of ghost cells in these lesions. The nature of ghost cells are described by various authors as a form of true keratinization, prekeratin, result of coagulative necrosis, Enamel or dentinal matrix and so on. Though ghost cells are demonstrable in a wide range of keratinizing odontogenic lesions but there is no difference regarding age/sex of patients and site of predilection from non-keratinizing odontogenic tumors nor do they exhibit different clinical behaviour. The present poster presentation attempt to clear the illusions and controversies surrounding ghost cells.

## Use of antibiotics in dentistry

**Students** : Sneha Suresh and Rameesa T  
**Supervisor** : Dr. Amrit Nanaiah  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

The antibiotics are used in the management of life threatening infections since many decades. The antibiotics are indispensable drugs in the management of oral and maxillofacial infections. Over the years several new concepts are being formulated in the principles of antibiotic therapy. In this E-poster we will discuss about the current principles in the antibiotic therapy for management of oral and maxillofacial infections. We will also discuss classification, indication, complications and myths about use of antibiotic drugs in our daily dental practice. An antibiotic is a type of antimicrobial substance active against bacteria and is the most important type of antibacterial agent for fighting bacterial infections. They may either kill or inhibit the growth of bacteria

The proper use of antibiotics need to understand:

- What is an antibiotics?
- Why we should use an antibiotic?
- When we shouldn't use an antibiotic?
- How we should use?
- How to choose an antibiotic?
- Why we should use an antibiotic in our dental practice?

Antibiotics are widely used in our dental practice. The uses of antibiotics have specific indicators such as to support host defense mechanism, to control severity of infection, as a prophylactic agent, for treating immunocompromised patients.

This study attempts to contribute to rational antibiotics use, with review of general characteristics.

## 3D Printing In Dentistry

**Students** : Harshitha M and Jui Rajeev Joglekar  
**Supervisor**  
**College/University** : Faculty of Dental Sciences, M S Ramaiah University, Bengaluru

### ABSTRACT:

**Background:** Since the origin of dentistry in 7000BC in the Indus valley civilization, it has been continuously evolving. There has been much technological advancement that enables dental professionals to provide better health care to their patients. One such technology is 3D Printing. In this technique, every slice of a 2D image is read and converted into a 3D object. This is called slicing.

**Aim:** This poster focuses on the application of 3D printing in dentistry, its advantages and disadvantages.

**Clinical Significance:** A 3D Printer involves the use of biocompatible resins to print dental devices. Intraoral scanners are used to scan the oral cavity of the patient. This technique helps to save time of both the dentist and the patient. It prevents wastage of materials, is cost effective and more accurate due to the absence of human errors. The strength of the device is comparable to that of manually prepared devices. Some techniques used in 3D printing are rapid prototyping and additive manufacturing. This technique is gaining popularity in many western countries and will be an emerging technique in India.

**Conclusion:** This digital technology has a wide area of application in prosthodontics, orthodontics, conservative dentistry and oral surgeries. The application of 3D printing in dentistry will change the way we treat patients in terms of ease of treatment and precision of prosthesis and will have a promising future.

## Comprehensive Management of Facial Asymmetry Secondary to Condylar Pathology

**Students** : Swaroop Varghese M and Simrit Bhat  
**Supervisor** : Dr. Venkatesh Anehosur  
**College/University** : SDM College of Dental Sciences, Dharwad



### ABSTRACT:

Facial asymmetry can be attributed to various conditions from developmental trauma and pathology. It significantly affects patients smile and esthetics and its correction is a major challenge posed to clinicians. With the latest imaging modalities we are in a better position to find whether the asymmetry is due to soft tissue or a bony pathology.

An understanding of the etiology of facial asymmetry and a thorough medical diagnostic approach is essential for the appropriate management of patients presenting with dentofacial asymmetry.

Condylar pathology is one of the etiological factors of facial asymmetry. Apart from the orthodontic procedures and orthognathic surgeries, comprehensive management aims at proper outcome of conservative or surgical treatment modalities which intern enhances both esthetics and functional aspects of the patient.

This poster highlights the facial asymmetry cases due to condylar Pathology and its comprehensive management protocol.



## Botox-the Quick Fix For Gummy Smiles

**Students** : Annu. C. Panoose and Annu Maria John  
**Supervisor** : Dr. Amit K. Walvekar  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

The horizons of treatment options in dentistry are broadening rapidly. In this scenario, applications of unconventional treatment options like use of botulin toxin (BT) are gaining momentum. The use of botulin toxin in maxillofacial can be broadly divided into cosmetic and non-cosmetic applications.

Botulin toxin is a double-edged sword. It is used to treat certain muscular conditions and cosmetically to remove wrinkles or lines on the lips by temporarily paralyzing muscles. The poster will highlight the procedure of Botox injection by focal weakening of facial muscles involved in expression that lead a tired, aged look by ensuring a natural and young look.

The journey of Botulin from a deadly poison to a remarkably resourceful therapeutic agent has broadened the horizon of dentistry. It has certainly been demonstrated to have significant value in the management of cases where the patient is unresponsive to less invasive treatment modalities or in conjunction with them.

Dental surgeons by their virtue of being extensively aware of the anatomy of the facio-maxillary region are a potential pool of operators who can use botulin toxin in their armamentarium with minor skill enhancement and thus widen the perspective of alternative, minimally invasive options to refractory conditions or invasive protocols. However, the practicing dentist must ensure that the treatment is within his/her scope of practice and has appropriate training not just to administer but also to deal with its potential adverse effects.



### 3D Printing: a new era in dentistry

**Students** : Josna George and Safna Usman  
**Supervisor** : Dr. Amit K. Walvekar  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



#### ABSTRACT:

3D Printing is a manufacturing approach that builds objects one layer at a time, adding multiple layers to form an object rendering a 3D volumetric structure; hence also known as Additive Manufacturing or Rapid Prototyping. 3D printers use images obtained through CBCT, CT, MRI & X-Ray and a 3D CAD (Computer Aided Design) software that measures thousands of cross sections of each product to determine how exactly each layer is constructed.

3D printing has diverse applications in the field of dentistry. Uses of 3D printing include the production of drill guides for dental implants, models for prosthodontics, orthodontics and surgery, manufacture of dental, craniomaxillofacial and orthopaedic implants, and fabrication of copings and frameworks for implant and dental restorations.

In Periodontology, 3D printing is used to develop customized image based fibre scaffolds, mimicking the properties and architectural configuration of the periodontium. 3D printers can also be used for the fabrication of dental implants. Also, 3D printed bioresorbable scaffolds incorporated with nano particles and bioactive materials have shown to be beneficial in bone regeneration. Though it has its limitations, 3D printing seems to be a promising technological innovation for Regenerative Periodontology.

### Oral Cancer- Your Chances of Beating It On How Soon You Find It!

**Students** : Vyom Shukla and Bhavana Dama  
**Supervisor:**  
**College/University** : MS Ramaiah University of Applied Sciences, Bengaluru

#### ABSTRACT:

**Introduction:** Oral cancer is one of the most mutilating diseases afflicting mankind. In India, 20 per 100000 population are affected by oral cancer which accounts for about 30% of all types of cancer. Over 5 people in India die every hour every day because of oral cancer. Precancerous lesions, conditions, and early stage oral cancers cannot be adequately identified by visual inspection alone and may be easily overlooked and neglected. Moreover, progressing premalignant lesions may be genetically different from their morphologically similar non-progressing counterparts. Early diagnosis is one of the most important single factors in combating oral cancer. Thus, a method of detecting oral cancers and precancerous lesions at an early curable stage is crucial and may lead to a reduction in the currently unacceptably high oral cancer morbidity and mortality rate. This presentation tries to briefly overview the various diagnostic aids and recent advances in early cancer detection.

**Aim:** The aim of this presentation is to spread awareness on the availability of early oral cancer detection modalities. This would encourage susceptible individuals to undertake oral cancer screening on a regular basis.

**Conclusion:** As the number of cases of oral cancer is on a rise every year, making it necessary to spread awareness among people about advances in early diagnosis would enable prompt intervention.

**Clinical Significance:** Awareness of early oral cancer detection is a prerequisite for its early diagnosis. Aggressive early treatment is a key factor for oral cancer cure.

## Wharfe's Assessment

**Students** : Vasudha Bharadwaj. J and Treesa Mary Joseph  
**Supervisor** : Dr. Vinod Thangaswamy  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

An impacted tooth is the one which is not completely erupted into the occlusal plain. The mandibular third molars being the most frequently impacted teeth, can cause several problems from minor occlusal disturbances to sever pain and inability to open the mouth.

There are many factors which influence the difficulty in surgical removal of an impacted mandibular third molar. WHARFE's assessment analyzes these factors and provides a guideline for a budding dental surgeon to decide whether to correspond with a maxillofacial surgeon. The aim of this poster is to explain the WHARFE's assessment in detail.

## Lasers in Orthodontics

**Students** : Sandra Rajeev and Abhirami KV  
**Supervisor** : Dr. Vikram Susil  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Modern technology has perfected a new instrument that has become almost indispensable in modern dentistry, in accordance with the philosophy of minimally invasive therapy i.e. LASER (Light Amplified by Stimulated Emission of Radiation).

Lasers are being introduced as an upcoming tool in dental specialities. 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 the orthodontic clinician. It is now possible to treat many soft tissue conditions that present as challenges in orthodontic treatment and can impact the overall esthetic outcome.

This poster evaluates the effectiveness and efficacy of laser technology in orthodontic treatment, the advantages and disadvantages of lasers, types of lasers and possible uses in clinical orthodontics.

## Atraumatic Extraction Procedures

**Students** : Sangeetha S and Shringa KN  
**Supervisor** : Dr. Himani S. Garg  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Atraumatic extraction procedures are the need of the hour. These procedures focus on minimal tissue injury. The objective is to enable immediate implant placement with minimum trauma to the investing tissues. It also focuses on being a painless procedure for the patients. Armamentariums ranging from physics forceps to various other periostomes are used for the same.

## Nano Robots- A New Horizon

**Students** : Mariya M Jos and Niharika T P  
**Supervisor** : Dr. Roopa Siddegowda  
**College/University** : Coorg Institute of Dental Sciences, Virajpet



### ABSTRACT:

Robots, the most wonderful invention of human beings have made its way into dentistry. Science of nano technology is manipulating matter at nano meter level. Orthodontic nano robots/nanites/nano machines represent microscopic objects artificially manufactured, endowed with "intelligence" capable of free diffusion inside the human body and which can interact with the human body cells or can manipulate them with the nanometric resolution in order to fulfill task in the field of orthodontics. Unlike regular robots, orthodontic nano robots will have invisible dimensions to the human eye from 0.1 to 10 micro meter.

Nanobots in a gel or suspension applied to the gums will reach the pulp in 100 seconds, causing anesthesia by blocking the nerve ending till the procedure is completed. Wire bending nanobots are able to produce individual arch forms to enhance desired tooth movement and can directly manipulate the periodontal tissue, allowing rapid and painless tooth rotation and vertical repositioning within minutes or hours. With the ongoing research in nano technology, we will soon have brackets incorporated with nano chips which will take the specific appliance prescription from the computer and with the help of nano robots it will adjust the tip and torque values accordingly.

Nano robots will be the next big treatment evolution in dentistry. The role of dentist with them will change but also the type of dental problems of the patient who will address to him will change.

# QUEST WINNERS

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INNOVATIONS IN DENTISTRY			
1	Improving Ergonomics- An Application base solution	Theertha Devaiah. N	Coorg Institute of Dental Sciences, Virajpet
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1	Ergonomics - elevating dentistry to excellence	Theertha Devaiah. N	Coorg Institute of Dental Sciences, Virajpet
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3	Comparative effects of various antibiotics on bacteria affecting the oral cavity- A microbiological study	K.M. Kushalappa & Jayalakshmi J	Coorg Institute of Dental Sciences, Virajpet

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1	Management of Arterio-venous malformation arising from Hemangiopericytoma	Sushmita & Tanya	Coorg Institute of Dental Sciences, Virajpet
2	Neurofibroma	Rajaram S & Sabin Sathyan	V.S Dental College & Hospital, Bengaluru

REVIEW			
1	Effects of anti-hypertensive drugs on alveolar bone loss in patients with chronic periodontitis- A retrospective study	Mik AimanIshataf Khairuddin & Christabel Lai William	UiTM(MARA), Malaysia
2	Effects of female sex hormones on the periodontium	PoojithaNagaruru & Anusha Goil	M.S. Ramaiah Dental College and Hospital, Bengaluru
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### E-POSTERS

INNOVATIONS IN DENTISTRY			
1	Characterization of fluorescent porcine dental pulp cell line on MTA	Tamaki Hattori	Tsurumi University, Japan

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1	A Midline swelling of the mandible	AnandChowdhary&Ankita	SDM College of Dental Sciences & Hospital, Dharwad
2	Unusual report of localized oral amyloidosis of buccal mucosa	Alpana Rani & G Mridula	SDM College of Dental Sciences & Hospital, Dharwad

REVIEW			
1	Nuclear Medicine in Dentistry	Thejaswini & Lina Priya	SJM Dental College and Hospital, Chitradurga
2	Lasers in Dentistry	Sharan Prakash & Swetha K	Government Dental College and Hospital, Bengaluru
3	Use of Silver Nanoparticles in Dental Products	Vijay Singh Jadoun & Poukhuan Panmei	Dayanand Sagar College of Dental Sciences, Bengaluru

## OTHER EVENTS

### TABLE CLINIC

1. Albin George, Dantes Denny & Nikhil Harikrishnan - Coorg Institute of Dental Sciences, Virajpet
2. TheerthaDevaiah - Coorg Institute of Dental Sciences, Virajpet
3. Indira A & Padma Swetha - Coorg Institute of Dental Sciences, Virajpet

### GRAY'S ANATOMY-Anatomical landmarks test

1. Priya Manisha D'souza - Coorg Institute of Dental Sciences, Virajpet
2. Akshay Kumar Pai U – V.S Dental College & Hospital, Bengaluru
3. Raveeksha Rai – M.S Ramaiah Dental College

### DR. SHERLOCK- Diagnostic abilities challenge

1. KeerthanBollamma, Priya M D'souza & Padma Swetha – Coorg Institute of Dental Sciences, Virajpet
2. Apoorva, Tanya Chondamma & Treesa – Coorg Institute of Dental Sciences, Virajpet
3. Sabin Sathyan, Arpitha Jayakrishnan & Rajaram S – V.S Dental College & Hospital, Bengaluru

### PICTIONARY

1. Parvathy, Shringa N, Sushmitha, Priya M & Sangeetha – Coorg Institute of Dental Sciences, Virajpet
2. Aakarsh Babu, Akshay Kumar Pai U, Shilpa Soman, Sabin Sathyan & Rajaram S – V.S Dental College & Hospital, Bengaluru
3. Samantha G, Monica R, Albin, Adithyan S & Varshitha – Coorg Institute of Dental Sciences, Virajpet

### QUIZ

1. NandhitaMurugavel, Nabila Sania & Kumari Athulya – Government Dental College and Hospital, Bengaluru
2. AakarshBabu, Akshay Kumar Pai U & ShilpaSoman – V.S Dental College & Hospital, Bengaluru
3. PV Abhinaya, Thejaswini MJ & Lina Priya – SJM Dental College and Hospital, Chitradurga

### COLLAGE

1. Disha Bhandari, SavarnaGoswami, RajaniMamadapur, Runal Sarkar & Jagjit Singh Dhanjal – SDM College of Dental Sciences & Hospital, Dharwad
2. Varshitha Reddy, Samantha Ganapathy, Albin George, Monica R & Parvathi – Coorg Institute of Dental Sciences, Virajpet
3. Karthik Prabhulinga Angadi, Priyanshi Maheshwari, Deepa R, Dheeraj A Kumar & Bhavana Dama – M.S. Ramaiah Dental College and Hospital, Bengaluru

### WIRE BENDING

1. Albin George – Coorg Institute of Dental Sciences, Virajpet
2. Shine Narayan – Coorg Institute of Dental Sciences, Virajpet

### PEDAGOGY

1. Priya Manisha D' Souza – Coorg Institute of Dental Sciences, Virajpet
2. MinuKumari – Dayanand Sagar College of Dental Sciences, Bengaluru
3. Akshay Kumari Pai U – V.S Dental College & Hospital, Bengaluru
4. Shubham Apurve – V.S Dental College & Hospital, Bengaluru
5. Shabnam – Coorg Institute of Dental Sciences, Virajpet

### SPELLATHON

1. Arpitha Jayakrishnan & Shubham Apurve -V.S Dental College & Hospital, Bengaluru
2. Samhita M & Rajaram S -V.S Dental College & Hospital, Bengaluru, and Nandhita Murugavel & Harshini Srikanth - Government Dental College and Hospital, Bengaluru
3. Akshay Kumar Pai U & Shilpa Soman -V.S Dental College & Hospital, Bengaluru

### ORAL HEALTH DOCUMENTARY

1. Universitas Indonesia, Jakarta, Indonesia.
2. Coorg Institute of Dental Sciences, Virajpet

## JOURNAL OF MULTIDISCIPLINARY DENTAL RESEARCH

### The official Journal of International Dental Educationists Association (IDEA) (ISSN 2277-3525)

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