1st ACE-KARNATAKA NATIONAL CONFERENCE - 2022

JULY 07, 08, 09 - 2022

NITTE (Deemed to be University)

A B SHETTY MEMORIAL INSTITUTE OF DENTAL SCIENCES

Association of Conservative Dentistry and Endodontists Karnataka

MESSAGES FROM DIGNITARIES

PRESIDENT: DENTAL COUNCIL OF INDIA

DR. DIBYENDU MAZUMDAR

I Am Delighted To Know That Association Of Conservative Dentistry And Endodontics And A.B. Shetty Memorial Institute Of Dental Sciences, Nitte (Deemed To Be University) Is Hosting By 1st Ace-Karnataka National Conference 2022 From 7th To 9th July, 2022 At Mangaluru, Karnataka. In The Current Scenario, It Is Of Utmost Importance That Specialists And The Aspirants Update Themselves With The Recent Advancements In The Filed Of Conservative Dentistry And Endodontics, To Render More Efficient Treatments To Our Patients. The Professional Conference Plays A Vital Role In The Uplift Of Technical Standard, Cohesiveness Between Practitioners And Dental Traders On One Hand And Specialists Of One Branch With Those Of Another. This Gives An Ample Opportunity To Students Of Various Levels To Interact With The Experienced Pundits Of The Profession. Deliberations At The Scientific Sessions Will Generate New Ideas And Many Times Prove Ground Breaking For Future Research. I Understand That A Great Deal Of Planning And Meticulous Homework Has Been Done To Make The Conference Fruitful For All Delegates. In Fact It Might Be A Meeting Place For The Future Pillars Of Dentistry. My Best Wishes For The Grand Success Of The Conference.

CHANCELLOR'S MESSAGE

SHRI. N VINAYA HEGDE

It gives me immense pleasure to learn that the ABSM Institute of dental Sciences is organising the First Karnataka National Conference 2022 of the Association of Conservative Dentistry and Endodontics.

I am sure, this conference would help in promoting high standards in education and research in the field of dentistry. This conference would also be bringing together the dental experts, research scholars, professors and students from all over the country, thereby facilitating peer learning and insightful interactions.

I wish you all a great success for the conference!

PRO CHANCELLOR'S MESSAGE

PROF. (DR.) M. SHANTHARAM SHETTY

| Am Happy To Note That The 15 State Conference Of The Association Of Conservative Dentistry And Endodontics Is Being Held Under The Auspices Of Nitte University. A B Shetty Memorial Institute Of Dental Sciences Has Been The Jewel In The Cap Of Our University And The Department Of Conservative Dentistry & Endodontics Has Been Our Pride. Strides Made In Conservative Dentistry In Preserving The Dental Structures Has Been Remarkable To The Benefit Of The People At Large, Worldwide. | Am Sure, Your Conference With More Than 28 Resource Persons And Experts From Different Parts Of The World Will Bring In New Innovations And Thoughts. | Wish The Conference All Well And May God Bless You All.

PRO CHANCELLOR'S (ADMIN) MESSAGE

MR. VISHAL HEGDE

I am pleased to note the Nitte university and A B Shetty memorial institute of dental sciences is organising the 1st ACE-Karnataka Conference 2022. The conference is focusing on innovation and industry academia platforms. I am sure the conference will be a platform to discuss the new developments in the area of dentistry. Many renowned dental practitioners will be participating in this event and participants will benefit from there experience.

Wish the conference success.

VICE CHANCELLOR'S MESSAGE

PROF. DR. SATHEESH KUMAR BHANDARY

It gives me immense pleasure to note that A.B. Shetty Memorial Institute of Dental Sciences, Nitte (Deemed to be University) in collaboration with the Association of Conservative Dentistry and Endodontics of Karnataka (ACE-Karnataka) is hosting its first ACE- KARNATAKA CONFERENCE 2022 from 7th July -9th July 2022.

The Conservative Dentistry and Endodontics department in A.B. Shetty Memorial Institute of Dental Sciences, Nitte DU, is one of the prominent departments in the college and has taken several initiatives to improve the oral health of the people in general by providing excellent patient care. I welcome all the resource persons, experts & delegates, to our Nitte campus and I hope this conference will provide an excellent opportunity for all of them to showcase their expertise and fruitfully utilize the forum of this conference for meeting the challenges in their field. I congratulate the entire organizing committee on this initiative and wish success to the organizers.

PRO-VICE CHANCELLOR'S MESSAGE

PROF. DR. M.S MOODITHAYA

I am pleased to learn that the Association of Conservative Dentistry and Endodontics of Karnataka would be organising its first Conference at A.B. Shetty Memorial Institute of Dental Sciences for three days from 7th to 9th of July 2022.

I am glad to know that this conference covers highlights of the innovation and symposiums on national interest in Geriatric Restorative, Direct/Indirect Restoration, Endodontic Failures and Retreatment Strategies to be presented by the experts from all over the country.

I wish to congratulate the Organizing Chairperson and Editorial Team Members for their efforts to bringing out an e-souvenir!

REGISTRAR'S MESSAGE

DR. HARSHA HALAHALLI

Nitte (Deemed to be University) is pleased to host the First State Conference of the Association of Conservative Dentistry and Endodontics of Karnataka (ACE-Karnataka).

I am glad to note that AB Shetty Memorial Institute of Dental Sciences, a top ranking dental school of the country is taking a lead in organising this event. The conference with carefully curated lectures, symposia and training programs promises to be a academic feast.

Congratulations are due to the organizing team for putting together this meticulously planned event. I wish you all the best for the conference!

DEAN'S MESSAGE

PROF. DR. U S KRISHNA NAYAK

It is a matter of great joy that the Association of Conservative Dentistry and Endodontics of Karnataka (ACE-Karnataka) is organizing its first conference in Mangaluru from the 7th to 9th of July 2022. It is our privilege to host the Conference at our prestigious institute, A. B. Shetty Memorial Institute of Dental Sciences, NITTE (Deemed to be University). In many parts of the world, restorative dentistry has been described and taught as "conservative dentistry." It has hardly been conservative of tooth structures, however; traditional methods and materials have been aggressive and highly invasive, requiring the removal of otherwise healthy enamel and dentin for various reasons. Fortunately, the current era of dentistry has witnessed the development of new materials, new techniques, and new instruments that make conservative dentistry practical and ultraconservative dentistry a reality. Innovative materials, particularly when combined with early detection and conservative treatment make the development of esthetics possible within every dental practice.

This National Conference will be a much needed effort to provide a common dais to dental professionals gathered here from all over the country to address the current trends, demands and challenges in conservative dentistry . I hope the conference will produce rich outcomes for everyone , serve as a platform for new ideas and create opportunities for collaboration. I laud the efforts of Prof (Dr.) Mithra N. Hegde and her entire team on this occasion and wish a grand success to this academic endeavor. I hope that all the delegates attending this conference will have a rich experience of scientific feast, traditions, cultural heritage and hospitality of Mangaluru. Best wishes to all. Jai Hind and Jai Karnataka.

ORGANIZING CHAIRPERSON'S MESSAGE

PROF. DR. MITHRA.N. HEGDE

Greetings.

It is a matter of great joy that the Association of Conservative Dentistry and Endodontics of Karnataka and A B Shetty Memorial Institute of Dental Sciences, NITTE (Deemed to be University) will be hosting the 1st ACE-KARNATAKA ICONFERENCE 2022 at Mangaluru, Karnataka, India.

Mangaluru an educational hub has promoted and strengthened education and research and rendered yeomen service in the field of Conservative Dentistry and Endodontics. While equipping teachers and students to do research, it is important that we try to bridge the yawning gap between the academia and clinical practitioners. Popularizing and disseminating research findings should be seriously attempted. We should continue to reach out and establish relationships agreeing on a strategy of co-operation and co-ordination with clinical practitioners and academia and thus exercise greater stewardship of resources.

This conference will be rich and varied with three Plenary Sessions (Symposium, Panel Discussion and Q&A session) which will foster discussions and hopes to inspire the students from a wide array of themes. We also expect to provide Industry Technology Platform – demonstration and hands on for all the registered delegates. Delegates and postgraduate students will have the opportunity to present paper or e-poster pertaining to original research, case reports and reviews.

On behalf of the Organizing Committee, I welcome you all to Mangaluru city, a venue that will guarantee a successful event amid the culture and scenery. The Organizing Committee will make every possible effort to make sure that your participation will be scientifically rewarding and a pleasurable experience.

ACE KARNATAKA PRESIDENT'S MESSAGE

DR. RAMYA RAGHU

Greetings To All.

I Am Very Happy That The Association Of Conservative Dentistry And Endodontics Of Karnataka Along With A B Shetty Memorial Institute Of Dental Sciences, Nitte (Deemed To Be University) Is Hosting The First State Level Conference In Mangalore.

Being A Member Of Ace From The Very Beginning It Is Heartening To See It Grow Into A State Level Body With Active Participation From All Over Karnataka.

This Conference Has Been Meticulously Planned. The Highlights Are The Panel Discussions On Clinically Relevant Topics And The Industry Interaction Which Will Showcase Recent Advances In The Field.

Many Congratulations To The Team Of Ab Shetty Dental College Headed By Dr. Mithra Hegde For Their Tireless Efforts. I Would Also Like To Acknowledge The Contributions Of Our Past President, Dr. Roopa Nadig, Who Is A Guiding Force Behind This Conference.

Dear Students, Time Invested In Gaining Knowledge Today Is Sure To Pay Rich Dividends In The Future. I Am Sure This Conference Will Be An Enriching Experience For All The Delegates. My Best Wishes For The Grand Success Of This Programme.

PAST PRESIDENT, ACE KARNATAKA'S MESSAGE

DR. ROOPA R NADIG

As Founder President Of Ace – Karnataka, I Take Great Pleasure In Welcoming All The Delegates For This First Ever Conference Of Our Association. It Is Gratifying To Witness That Our Dream Of Having An Annual Conference Has Been Realized As A Result Of Tremendous Effort And Support Of All The Members Of The Association.

The Primordial Aim Of Our Association Is To Propagate Scientific Enquiry And Continuing Education By Bringing All The Members Of Our Fraternity To Share And Gain, Bind And Bond, Amalgamate And Integrate To Perpetuate Scientific Knowledge For The Benefit Of The Community At Large. Organizing Such An Event At This Point Of Time Reinforces Our Objective Of Developing An Affable Environment For The Exchange Of Ideas Pertinent And Relevant To Present Day Clinical Practice. I Am Confident That Each One Of You Will Find The Conference Stimulating, Informative And Enjoyable.

I Congratulate The Entire Organizing Team For Their Painstaking Effort To Give This Conference Its Much Needed Color And Vigor. I Wish Them Great Success For The Successful Conduct Of The Entire Event And Hope This Mission Will Be Carried Out With Even More Dynamism In The Years Ahead.

SCHEDULE

7TH , 8TH, 9TH

JULY 2022

DAY 1 – 07 JULY 2022 THURSDAY

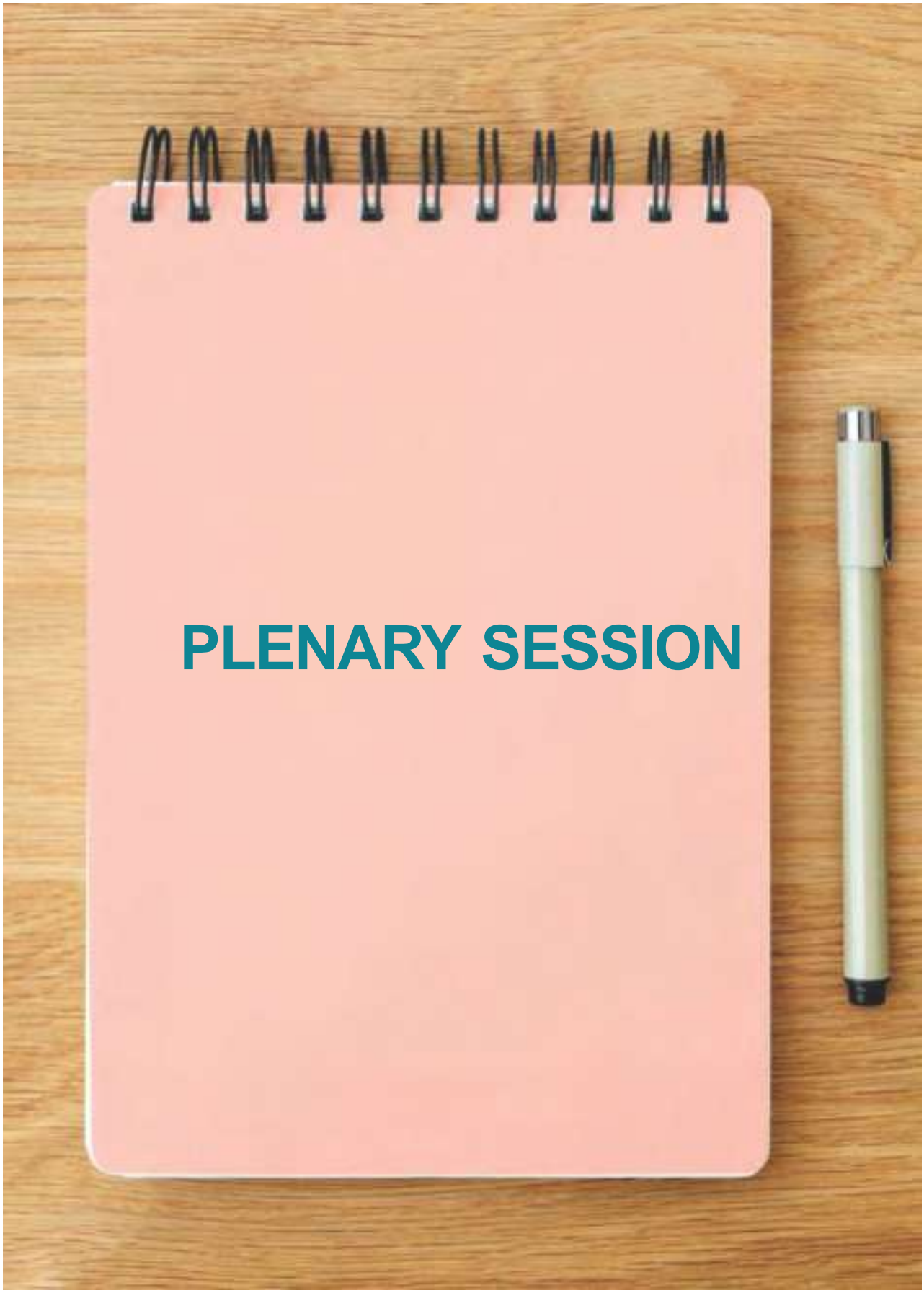
08.30 AM - 05.00 PM	STUDENT PAPER/E-POSTER PRESENTATIONS

DAY 2 - 08 JULY 2022 FRIDAY

08.00 AM - 10:00 AM	INDUSTRY TECHNOLOGY PLATFORM SESSION - DEMONSTRATION AND HANDS O
10.00AM - 10.45 AM	INAUGURAL SESSION Venue: Avishkar
10.45 AM - 01.00 PM	PLENARY SESSION 1: GERIATRIC RESTORATIVE CARE: DEMAND AND CHALLENGES Venue: Avishkar Symposium - 1 hour, Panel Discussion and Q&A Session - 1 hour Session Chair: DR ROOPA R NADIG Moderators: DR VEENA SURESH PAI, DR ADARSH M S Topic 1: Dental caries in geriatric patients: management strategies - DR SRIREKHA A Topic 2: Common aesthetic problems in the elderly - DR. JAYASHREE HEGDE Topic 3: Non-carious destruction in elderly, when to intervene - early intervention and localized corrections - DR SHASHI RASHMI ACHARYA Topic 4: Total mouth rehabilitation with correction of vertical dimension - DR. CHETHAN HEGDE Expert Panelist: DR. SHISHIR SINGH
01.00 PM – 01.45 PM	LUNCH
01.45 PM – 04.00 PM	PLENARY SESSION 2: ENDODONTIC FAILURES AND RETREATMENT STRATEGIES: DILEMMA IN DECISION MAKING Venue : Avishkar Symposium – 1 hour, Panel Discussion and Q&A Session – 1 hourSession Chair: DR MITHRA N HEGDE Moderators : DR ASHITHA UPPOOR, DR KARTHIK SHETTY Topic 1: When do you say the treatment has failed?– DR L KRISHNA PRASADA Topic 2: Retreat or extract?– DR SHANTHIPRIYA REDDY Topic 3: Retreatment vs implant – DR RAKSHITH HEGDE Topic 4: Retreatment strategies: surgical vs non-surgical– DR VASUDEV BALLAL Expert Panelists : DR. K K WADHWANI, DR GOWRISH S
04.00 PM – 06.00 PM	INDUSTRY TECHNOLOGY PLATFORM SESSION – DEMONSTRATION AND HANDS ON
07.00 PM ONWARDS	BANQUET

DAY 3 – 09 JULY 2022 SATURDAY

08.00 AM – 10.00 AM	INDUSTRY TECHNOLOGY PLATFORM SESSION – DEMONSTRATION AND HANDS ON
10.00 AM – 12.30 PM	PLENARY SESSION 3: DIRECT vs INDIRECT RESTORATION: DECISION MAKING DILEMMA Venue: Avishkar Symposium – 1 hour, Panel Discussion and Q&A Session – 1 hour Session Chair: DR RAMYA RAGHU Moderators: DR ASHISH SHETTY, DR SUBHASHINI Topic 1: Case selection and material options for direct and indirect tooth coloured restorations – DR DEEPAK MEHTA Topic 2: New concepts in tooth preparation for direct and indirect tooth coloured restorations – DR SONAL JOSHI Topic 3: Bonding challenges in aesthetic restorations - DR ARAVIND SHENOY Topic 4: Special tips for success of tooth coloured restorations – DR R S MOHAN KUMAR Expert Panelists: DR BALARAM NAIK, DR P KARUNAKAR, DR SARJEEV SINGH YADAV
12.30 PM – 01.30 PM	LUNCH BREAK
01.30 PM – 03.30 PM	DELEGATE PRESENTATIONS
03.30 PM	VALEDICTORY SESSION



PLENARY SESSION

Geriatric Restorative Care: Demand and Challenges

Dr Roopa Nadig

Dr Roopa Nadig is a perfect combination of being an ardent academician, astute clinician and an able administrator. She worked as a professor at Govt dental College Bangalore. Principal at Bangalore Institute of Dental sciences and Dean of Dayananda Sagar college of Dental sciences., Bengaluru. Currently she has taken retirement from active academics and continuing to be engaged in her clinical Practice and as a consultant in corporate hospitals. She has occupied many responsible positions in the university as well as various Professional bodies some of them include Dean of faculty of Dentistry of Rajiv Gandhi university of Health sciences –President – Association of Conservative dentists and Endodontists of India, Vicepresident of Indian endodontic society and founder president of ACE – Karnataka. She is one of the most sought-after speakers in the speciality of conservative dentistry who has delivered more than 50 guest lectures so far at various state and National forums. She has published over 75 scientific papers in various reputed journals and contributed chapters in many text books. She was also the Editor in Chief of RGUHS Dental Journal and is in the editorial board of many other journals. Recognizing her contribution to the field of dental education Indian Association of conservative dentistry and endodontics has recently honoured her with an "Academic excellence award".

Dr Veena Suresh Pai

Dr Veena Suresh Pai Completed BDS in the year 2004, and MDS IN 2009 under the guidance of Dr.Roopa R Nadig. Presently working as Associate professor, Dayananada Sagar college of dental sciences, Bangalore. Works as a Consultant endodontist since 2009. Has 38 publications in international and national journals to her credits. Awarded 3rd prize in a national event for scientific writing of article. Been working with stepone- volunteer organization for COVID teletraiagging since august 2020. Teletraiaged and counselled– more than 5500 patients since the beginning of COVID.. Felicitated by national health mission Karnataka and ECHO India- as top performing doctor in the 2nd wave in the presence of additional chief secretary and development commissioner Smt. Vanditha Sharma- 24th June 2021. Felicitated on the Doctor's day celebration by stepone on July 4th as ALL ROUND performer in presence of CM of Delhi- Shri Arwind Kejriwal, Smt Kiran Bedi, Shri Ashwath Narayan, Goa CM Shri Pramod Sawant for taking up COVID calls from Goa, Delhi, Karnataka. Kanyakumari, Coimbatore, Harayana, Faridabad, Bihar, Maharashtra, was promoted to national health line, vaccine ushering and mental health counselling cell. Felicitated by stepone Karnataka with the Rajyotsava award received by team stepone for being the top performer from Karnataka. Felicitated by NMO KARNATAKA, in presence of Dr. Ramesh - Vice Chancellor, RGUHSApril 17th 2022 Felicitated by DFS, for screening SSLC exam going students on May 1st 2022 Member of NMO- national medico organization- a non-profit organization serving tribal areas and needy. Member of youth for seva and doctors for sevaSSLC screening along with education department government of Karnataka, spreading health and oral hygiene awareness through seminars and webinar, Oral screening camp at Abhalashrama

Dr Adarsh M S

Dr Adarsh M S Completed masters in Conservative dentistry and Endodontics in the year 2007. Trained in Micro-Esthetics and Advanced Endodontics from Switzerland, Germany and Singapore. Recipient of Times health excellence award in the field of Esthetic dentistry and Endodontics 2019, ACE Karnataka 2020 Clinical Excellence award, All India Clinical excellence award by IACDE at the National conference at Guwahati, 2021. Currently working as Professor in V.S Dental College and Hospital, Bangalore. Having a private practice with dental operating microscope in Bangalore and passionate about Micro- esthetics and Micro-endodontics. Marathon runner and hobbies include Table Tennis, Volley ball and swimming.

Dr Srirekha A

Dr Srirekha A received her BDS degree from Manipal College of Dental Science Mangalore in 1996 securing gold medal in Orthodontics. She completed her Masters from MCODS, Manipal in Conservative Dentistry and Endodontics in 1999. She started her career as an academician in the year 1999 at The Oxford Dental College, Bangalore, and is currently the Professor and Head of the Department of Conservative Dentistry and Endodontics. During her 23 years long career as an academician, she has trained several graduates and post graduate students. She has published over 60 papers in peer reviewed journals and is actively involved in many academic programs. She is the life member of Indian Association of Conservative Dentistry and Endodontics (IACDE), Indian Endodontic Society (IES) and Academy of Conservative Dentistry and Endodontics- Karnataka (KACE)

Dr Jayashree Hegde

Dr Jayshree Hegde Anil, graduated with a Bachelor of Dental Surgery from GDC affiliated to Bangalore University, and Master of Dental Surgery in Conservative Dentistry & Endodontics from the same College. She started her teaching career in 1996 and was involved in post-graduate training program since 2002. She was heading the department of Conservative dentistry and Endodontics, The Oxford dental college & Hospital, Bangalore, from 2009 to 2013 and was involved in many academic activities during this period. She quit active academics in 2013 and joined as Clinical Director at Ridgetop Dental International at Bangalore, India, involved in group practice that provides advanced dental services in the field of esthetics, micro dentistry and implants. She has several publications in indexed journals to her credit. She is a member of Indian association of Conservative Dentistry & Endodontics, American Academy of Cosmetic Dentistry, Academy of Cosmetic Dentistry, Indian academy of Aesthetic & Cosmetic Dentistry, Indian Dental Association and Indian Board of Micro Restorative and Endodontics. She has a vast experience in Microscopic dentistry, Smile makeovers and Full mouth restorative rehabilitation. She has delivered lectures in national and international forums and has authored 2 books in Endodontics published by Elsevier Publication.

Dr Shashi Rashmi Acharya

Dr Shashi Rashmi Acharya graduated and went on to earn her master's degree in the field of Endodontics from A B Shetty Institute of Dental Sciences, Mangalore. Presently she holds a designation of Senior Professor in the department of conservative dentistry and Endodontics at MCODS, Manipal wherein she had served as head of the department for 8 years. She has always maintained a unique balance in her career, being a fine academician and a distinguished clinical practitioner. Her expertise in the field of operative dentistry does not limit to only restorations but have mastered the artistic skill of redesigning the canvas of aesthetic dentistry for creating beautiful smiles. Hence, she takes up the post of Resource person and the coordinator of Post graduate Certificate course in Aesthetic Dentistry conducted at MCODS, Manipal. A "Teacher par Excellence" as recognized by her students by giving objective feedback, made her bag the Best Teacher award almost every year. A compassionate clinician received the "Best Clinician Award" by the Karnataka State Academy of Conservative Dentistry and Endodontics in 2019 speaks her skills. Keeping abreast with recent clinical skills she has a Fellowship in Microdentistry from Carl Ziess, India. A versatile intellect in her field, she has always indulged in academic summits and has delivered guest lectures across the national level. She has more than 70 publications to her credit in national and international journals. At present she is one of the reviewers of Journal of Conservative Dentistry and Journal of interdisciplinary Dentistry. She represents Rajiv Gandhi University and SDM University as external Board member and MAHE as internal Board member for PG studies.

Prof. (Dr.) Chethan Hegde

Prof. (Dr.) Chethan Hegde completed his BDS and MDS in Prosthodontics at A B Shetty Memorial Institute of Dental Sciences, Mangalore. He is currently working as Professor and Heading the Department of Prosthodontics at A B Shetty Memorial Institute of Dental Sciences, Mangalore, NITTE UNIVERSITY. He holds the post of President Elect Indian Prosthodontics Society. His areas of interest include Full Mouth Rehabilitation, TMJ Disorders, Occlusion, Aesthetics and Implantology. He has authored more than 70 articles in various national and international Indexed journals. He has pursued PhD in the Faculty of Dental Sciences from Nitte (Deemed to be University). He is an endurance athlete having completed several Half Distance and a Full Distance Marathon. Address: Department of Prosthodontics, A B Shetty Memorial Institute of Dental Sciences, Deralakatte, Mangalore-575018. E-mail Address: hegdechethan@yahoo.co.in

Dr Shishir Singh

Dr Shishir Singh, received his BDS and MDS degree from Nair Hospital Dental College, Bombay University. PhD from Maharashtra University of Health Sciences, Nashik, under the Guidance of Dr.Mansing Pawar, (Dean, Professor & HOD, Conservative Dentistry & Endodontics, Govt. Dental College, Mumbai) in 2017. Started his career as Clinical Assitant and currently serves as Dean, Professor and Head, Department of Conservative Dentistry and Endodontics, Terna Dental College, Nerul, Navi Mumbai. Diplomate: Indian Board of Endodontics Fellow: - Indian board of Micro-restorative and Endodontics Formerly, Clinical Teaching Fellow, Department of Endodontology, UCL Eastman Dental Has attended several international CDE's and Conferences and also has several publications in indexed journals. Member of – Indian Dental Association, Indian Endodontic Society, International Congress of Oral Implantologists, Rotary Club of Bombay Airport. Conducted various hands-on courses in Endodontics and Restorative dentistry nationally. Invited as Guest speaker to various National conferences. His research interests involve Stem cell research and Regeneration, Biocompatibility and cytotoxicity of Dental Materials. He is involved in active collaborative research with UCL Eastman Dental Institute, London, U.K.

Endodontic Failures And Retreatment Strategies : Dilemma In Decision Making

Prof Dr Mithra N Hegde

Prof Dr Mithra N Hegde Currently serves as the Vice Principal and Professor in the Department of Conservative Dentistry and Endodontics, A. B. Shetty Memorial Institute of Dental Sciences, Nitte (Deemed to be University) and has been a clinical practitioner for 30 years at Dental Speciality and Cosmetic Clinic, Kankanady, Mangaluru. Graduated in 1989 with TMA Pai and Colgate gold medals and been a teacher and researcher since 1992 with 385 scientific research articles in internationally indexed Journals with a recent publication in Nature.com in British Dental Journal. Teaching from last 28 years she has guided 54 and co-guided 121 postgraduate students. A recognized PhD guide with 5 candidates awarded PhD and 6 registered candidates. She has completed 5 major research projects of BRNS, ICMR and VGST, Dabur India Ltd and guided 9 ICMR granted STS Projects in the last 10 years. Her special interest in the field of "Saliva as a biochemical indicator" in Dental Caries, Chronic renal failure, Diabetic Mellitus and HIV is of great value as a non- invasive diagnostic tool. She has authored a Complete Text book of Endodontics and also 3 handbooks on "Recent concepts of Dentistry". She has presented guest lecturers in 93 International and National Conferences. She is the recipient of highest Civilian Award in the field of medicine- Karnataka Rajyotsava Award in 2011, Dentist Excellence Award 2013 Instituted by Indian Dentist Research and Review, Dr. J.G. Kannappan Award by the International Association for Dental Research and Indian Society for Dental Research 2013, Women Dentist Achiever of the year awarded by Indian Dental Association and Women Dental Council (2010), Academic Excellence Award in 2016 and Prestigious Outstanding Achievement Award in 2018 by Indian Association of Conservative Dentistry and Endodontics, Scientific Reviewer Award-Best Scientific Reviewer by Contemporary Clinical Dentistry Editorial Board in 2018..She has been recognized as a Member of Academy of Medical Sciences (MAMS), India for her exemplary contribution to the field of science. Admitted as a member of Royal College of Physicians and Surgeons of Glasgow MFDS RCPS (Glasg) in 2022. She was bestowed with the prestigious IACDE National Academic Excellence Award 2020 by the Indian Association of Conservative Dentistry and Endodontics at the 35th IACDE National Conference held at Guwahati, Assam from the 26th to 28th of February 2021, appreciating her efforts as an educator that has led to the advancement of the art and sciences of Conservative Dentistry and Endodontics. Micro dentistry practitioner since 2001 after training in Madrid, Spain. She was a Syndicate Member and member of Centre for Advanced studies at Mangalore University. Member of Board of studies for Under Graduate and Post Graduate Students, Member of Ph.D. Registration Committee and External Expert Research Committee, Rajiv Gandhi University of Health Sciences. She is also a member of The Planning and Monitoring Board, Research Advisory Board and Ethics Committee of Nitte deemed to be University. She is the Past President of Indian Dental Association, Dakshina Kannada Branch and the Vice president of Indian Endodontic Society and Indian Association of Conservative dentistry & Endodontics. Presently she is serving as Secretary of Association of Conservative Dentistry and Endodontics of Karnataka and Editorial Board member of 16 indexed journals.

Dr Ashitha Uppoor

Dr Ashita Uppoor graduated from Nair Dental College , Mumbai University BDS(1988) &MDS (1994)- Periodontology from Manipal College of Dental Sciences(MCODS),Manipal At Present she is Dean And Professor , Department of Periodontology at Manipal College of Dental Sciences Mangalore. She has presented several scientific papers&, guest lectures at various national scientific forums. & is also a reviewer in reputed journals , In addition she has also Conducted clinical trials for industry based research She was also the Editor –In Chief of The Journal Of Interdisciplinary Dentistry.She has also authored Textbook of Periodontology & Implantology for Elsevier Publishers & is one of the adaptation author for Southeast asia edition of Carranzas Clinical Periodontology .

Dr Karthik Shetty

Dr Karthik Shetty completed his BDS at the SDM College of Dental Sciences, Dharwad and the proceeded to complete his Post Graduation in Conservative dentistry and Endodontics from MCODS, Manipal. He has several presentations at National and International Conferences to his credit and has over 40 National and International publications to his credit. He has keen interest in Micro Endodontics and retreatment strategies in Endodontics. He currently heads the Department of Conservative Dentistry and Endodontics at MCODS, Mangalore and He has a practice restricted to Restorative dentistry and Endodontics at the Excellence dental healthcare center Mangalore.

Dr L Krishna Prasad

Dr L Krishna Prasad received his BDS degree from KVDC & Hospital, Sullia in 1994 and MDS from Govt. Dental College, Bengaluru in 2000. Vice president of IACDE 2015-2016, Treasurer of ISPRP 2015-2017, Board of Study RGUHS for PG (2015-2017), Life Member of Indian Association of Conservative Dentistry and Endodontics, Life Member of Indian Endodontic Society, Life Member of ISPRP, Life Member of Indian Red Cross Society, Life Member of Indian Dental Association, Branch Secretary, IDA Puttur Branch (2000-2002), President, IDA Puttur Branch (2005), Branch Coordinator, IDA-Colgate National Oral Health Programme, E C Member of IACDE(2011- 2013), E C member ,Scientific chairman, Membership chairman of ISPRP, President KVGDC Alumni association "Smriti", External Board member UG MAHE University, UG BOS member of RGUHS(2008-2010,2012-2014), Examiner for UG/PG of RGUHS, Yenepoya, MAHE, Nitte, JSS, KUHAS , DY Patil Universities. Academic council member RGUHS (2021-2022). Special Achievements: · 2 nd,3rd, and Final BDS first rank holder of Mangalore university · KVG gold medal awardee · Best outgoing student award of KVGDC 1996 · TMA Pai Gold medal awardee · Second rank in Karnataka state PG CET 1997 · Best paper during Karnataka State IDA Conference, at Bangalore · Best Journal award, in Karnataka State IDA for 2006, 2007 · Published around 60 national and international publications.

Dr Shantipriya Reddy

Graduated from A B Shetty Memorial Institute of Denal Sciences and has done her post graduation from MR Ambedkar Dental College, Bengaluru in 1995.

She is currently a Consultant at Manipal Hospitals, Old Airport Road ,Bangalore and also having a Private Practice . She has been practising Implantology since 23 years . She is the author of the text book ,' Essentials of Clinical Periodontology and Periodontics ' ,5 editions and also ' Mini Surgical Atlas in Periodontics ' Besides being actively involved in academics ,she has numerous national and international publications to her credit which have been extensively peer viewed and has delivered lectures in various National and International conferences in Periodontology and Implantology.

Dr Rakshith Hegde

Dr Rakshith Hegde Title and academic Rank: Professor Employer: Nitte University Current academic appointment: MDS –Prosthodontics including crown and bridge Educational background: BDS- Mangalore university-1999 MDS - Prosthodontics including crown and bridge- Rajiv Gandhi University 2004 Diploma- Weldone concept July 2015 Author of text book - Essentials in Oral Implantology Education delegate- ITI India section since 2018 till date Fellow – ITI International Team for Implantology .Invited presentations and workshops 1. Guest lecture in IDA karwar – clinical tips in crown and bridge- September 2010 2. Guest lecture on immediate loading of implants -65th Ida conference ,9th -12th feb 2012 Mumbai 3. Guest lecture on prosthetic options in ankylos system- Coorg dental college , 26th august 2012 Coorg dental college-virajepet 4. Guest lecture at Indian society of pedodontics and preventive dentistry – "are implants an option in children- lets face the truth" 34th ISPPD conference, pattaya, Thailand , 13-14th September 2012 5. Guest lecture on – implants in pediatric dentistry ,K.V.G. Dental college, Paedoconscientia-III , 17th november 2012, sullia 6. Young star speaker – Rehabilitation of completely edentulous patients with implant supported prosthesis – mission possible , 40th IPS conference & 8th biennial meeting of Asian academy of prosthodontics , December 5th -9th 2012 , Chenna Memberships: 1. Member of Indian Prosthodontics Society 2. Member of Indian society of Prosthodontics - Restorative – Periodontics 3. Member of Prosthodontic Forum of Mangalore 4. Member of Indian Dental Association 5. Member of DGOI, Germany 6. Member of Asia Pacific Association of Implant Dentistry 7. Member of Karnataka Prosthodontic Society 8. Member Pierre Fauchard Academy 9. Member ITI International team for Implantology

Dr Vasudev Ballal

Dr. Ballal graduated with a bachelor degree of Dentistry from the SDM College of Dental Sciences, Dharwad, Karnataka, India and Master's degree in the specialty of Conservative Dentistry and Endodontics from Manipal College of Dental Sciences, Manipal, Manipal Academy of Higher Education, Karnataka, India. He then acquired PhD degree, in Endodontics from Manipal College of Dental Sciences, Manipal, India. He has also completed certificate course in "Bioethics" from Manipal Academy of Higher Education. Currently, he upholds the position of Professor in the specialty of Conservative Dentistry and Endodontics. He has created new vistas by collaboration with several renowned international universities and have conducted more than 45 projects. His expertise in the field has authorized him to hold the post of an editorial board member of 23 international and national journals. He is the reviewer of 82 international journals and 5 national journals. He upholds the position of associate editor of BMC Oral Health, Endodontology and Journal of Conservative Dentistry. He is the only Indian who received the best reviewer award out of top 10 percentile in the world by American Association of Endodontists and Elsevier publishers in 2014 and 2016. He has been awarded 11 times as an outstanding reviewer for Journal of Endodontics by American Association of Endodontists. He has also been awarded outstanding reviewer for Journal of Dentistry and Journal of Herbal Medicine. He has received thrice the top reviewer in the world in Dentistry award by Publons Academy, UK. He has 150 international publications and 25 national publications to his credit. His topic of profound interest is on root canal irrigation, intracanal medicaments, root canal disinfection, and endodontic bio-materials, rendering to which, he was the first to explore the use of "Maleic acid" as a de novo root canal irrigant in the endodontic specialty.

Dr Gowrish S

Prof. Dr. Gowrish S. Bhat an academician and clinician par excellence, is currently serving as Additional Professor at A. B. Shetty Memorial Institute of Dental Sciences, Nitte (Deemed to be University). He obtained his BDS degree from SDM College of Dental Sciences and Hospital, Karnataka University, Dharward, Karnataka in 2000 and MDS degree in Conservative Dentistry and Endodontics from Saveetha Dental College and Hospital, TNMGR University, Chennai, Tamil Nadu in 2006. As a private practitioner at Sparsha Medical Centre, Mangaluru has been rendering exclusive Endodontic and Aesthetic treatment since over a decade. His primary research, teaching and clinical interests are interdisciplinary. Has numerous original research publications to his credit in indexed journals such as International Endodontic Journal.

PROF. (MRS.) K.K.WADHWANI

CURRICULUM VITAE Name : PROF. (MRS.)K.K.WADHWANI Designation : HOD,CONSERVATIVE DENTISTRY FACULTY OF DENTAL SCIENCES, KGMU Husband's Name : MR.K.A.WADHWANI Address : 3/233,Vishal khand-3,Gomti nagar Lucknow-226 018 (U.P.) India E-mail : kkwadhwani@yahoo.com Phone : 0522-2392571 (R) 2266757 (O) 9415001259 (M) EDUCATIONAL QUALIFICATIONS

Examination passed Educational Institution Year of Passing Subjects M.D.S. King George's Medical College, University of Lucknow. 1978 Operative Dentistry B.D.S. King George's Medical College, University of Lucknow. 1975 All Dental Subjects THESIS • "MICROLEAKAGE OF COMPOSITE RESINS AS COMPARED TO SILICATE CEMENT" SPECIAL AWARDS • 'Best Paper' award for the paper as faculty member in 1986 & 1989 Federation of Operative Dentistry Indian Annual Conferences. • Awarded Gold Medal 2002 by King George Medical University for contribution towards profession. • Nominated for Bharat Shikshak Ratan Award-2009 given by Global Society For Health & Educational Growth. • 12 Best papers and poster awarded as co-author in different national conferences and conventions between year 1995 to 2010 of Federation of Opervative Dentistry & Endodontics • Best teacher award in year 2012 in King George's Medical University, Lucknow, UP RESEARCH • Guide for more than 100postgraduate thesis research projects. • Co-guide for more than 150 postgraduate thesis research projects. • Published 13 papers on Endodontics and Operative Dentistry in various National and international Journals. PROFESSIONAL MEMBERSHIPS • Member, Dental Council of India (DCI). • Member, Indian Dental Association (IDA). • Life Member, Federation of Operative Dentistry India (FODI). • Life Member, Indian Endodontics Society (IES).

Direct Vs Indirect Restoration: Decision Making Dilemma

Dr Ramya Raghu

Dr Ramya Raghu She is an accomplished academician, astute clinician, a humble teacher and mentor. she has been actively engaged in training undergraduate and postgraduate students for over 29 years. Has several publications to her credit in National and International journals. She has delivered guest lectures at State and National level conferences. Life member of IACDE. She has authored two books titled "Clinical Operative Dentistry- Principles and Practice" and "Endodontics- Current concepts and Practice" which have been well received by dental students and clinicians in India. She has trained several graduate and over 50 post graduate students, a trusted guide and mentor for Post graduates creating socially and ethically aware mentees. She has around 30 years of clinical experience in her own private practice. She has occupied prestigious positions in several professional bodies, organizations and university working passionately towards enhancement of professional and academic standards.

Dr Ashish Shetty

Dr Ashish an alumni of govt. dental college Bangalore (1998) received his post-graduate qualification in the field of restorative dentistry and endodontics at CODS, Davangere (2001). He completed his masters as the best outgoing post graduate student. His special interest in smile designing led him to pursue his super-specialization in the field of cosmetic dentistry at the prestigious Rosenthal institute of cosmetic dentistry, New York University College of dentistry. At NYU he completed an advanced full-term programme in the field of cosmetic dentistry under the guidance of some of the best smile dentists in the world. Worked till the capacity of associate professor at V S Dental college. He is currently a professor at the prestigious Bangalore INSTITUTE of dental sciences, Bangalore where he is involved in training postgraduate students and conducting various research activities. He is certified in Invisalign, laser dentistry and minimally invasive dentistry. He serves in the capacity of vice President for "DETUSCHE KINDER HILFE "- GERMAN CLEFT AID SOCIETY"- INDIA.

Dr Subhashini

Dr Subhashini received her BDS degree from R.V. Dental College & Hospital in 2001 and MDS degree from V.S. Dental College & Hospital in 2006. She has experience of total 16yrs. She was Director and Faculty of Esthetic Studio, V. S. Dental College & Hospital, Bangalore. (2008-2010) Has delivered a lecture on EZ Safesider system at India's First Ever South Zones Symposium Held In Bangalore April 6-7, 2007, organized by V. S. Dental College & Hospital, Bangalore. Speaker for an IDA organized programme at V. S. Dental College & Hospital, Bangalore. "Irrigants and Irrigation Devices", 2012 Clinical assisted Dr Arunvelu in a Laser Hands on work shop "Lines and Lesions- the definitive Endo-Perio Workshop" programme, June 5th-6th 2012, organized by Bangalore Institute of Dental sciences. Additionally trained in Microscope at M.S.Ramiah Dental College and Hospital June 2013 Contributed as a Resource person, Member & Organizing Committee for "Rapid RecapSculpting The Future" 26th -28th Febrauary 2019 Resource person of scientific programme "Rapid Recap" of 2020" held on 6th -8th February at Govt Dental College & Hospital, Bangalore. Guest Speaker for "Rapid Recap 2020" held on 6th -8th February – Lasers in Conservative Dentistry and Endodontics organized by Govt Dental College & Hospital, Bangalore. Resource person of scientific programme "Rapid recap 2022 -Sculpting the Future", 7th - 9 th April 2022 Expert Panel for Poster Competition on Anterior Esthetic. National Symposium on Aesthetic & Clinical Dentistry. April 23-24, 2022. GDC, Bangalore. National and International publications with 241 citations in credit. Member of IACDE, ACE Karnataka.

Dr Deepak Mehta

Dr Deepak Mehta Major Field of Specialization: Operative Dentistry & Endodontics Fine Field Specialization: Esthetic Dentistry An Expert in Restorative. Serves as an Adjunct Professor in the Department of Cariology at Saveetha Dental College & Hospital, Chennai, Saveetha University.Successfully completed Masters Program in Conservative Dentistry & Endodontics from Bapuji Dental College & Hospital, Davangere, Rajiv Gandhi University of Health Sciences, Bangalore in 2004. Obtained Post Graduate Certificate program in Aesthetic Dentistry from Suny Buffalo University, New York & Encode in the year 2005. Received PhD in Operative Dentistry from Tohoku University Graduate School of Dentistry, Sendai, Japan in 2015.Recipient of the Best Postgraduate Student Award "Septodont Award" presented by the Federation of Operative Dentistry of India (FODI) & Indian Endodontic Society (IES) in the year 2005. Contributed as a co-author in five text books relating to Restorative Dentistry and Dental Materials. He has more than 30 Scientific papers published in International Journals. Serves on the Editorial and Review Board of more than 10 scientific peer reviewed journals. Awarded with the fellow status of the prestigious American Society for Dental Aesthetics (ASDA) in 2019. Member in good standing of the American Society for Dental Aesthetics since 2014. Conferred the Diplomat status of the American Board of Aesthetic Dentistry (ABAD) in the year 2018. Accredited & Vice President of the Indian Academy of Esthetic & Cosmetic Dentistry (IAACD) and founding member of the International Association of General Dentistry (IAGD). Appointed as a Smile Care Expert for the Ponds Femina Miss India 2013, Bangalore Chapter. Recipient of the "Outstanding Dentist of the Year 2013" award presented by FamdentExcellence in Dentistry Award.

Dr Sonal Joshi

Dr Sonal Joshi Professor and Dean, KLE V.K Institute of Dental Sciences, Belagavi, Karnataka. BDS: Govt. Dental College, Mumbai MDS: KLEVK Institute of Dental Sciences, Belagavi Headed, Department of Conservative Dentistry and Endodontics KLE V.K Institute of Dental Sciences, Belagavi, Karnataka. Secretary, K.L.E.'s Swashakti Empowerment Cell for Women Academic Council Member of KLE University Co-ordinator for Excellence in Esthetic Dentistry Member of Editorial review board in Journal of Conservative dentistry Numerous International and National Publications. Resource Person at various National and International Podium. Keynote Speaker at International Symposium on Teeth Whitening: Evidence and Clinical Based; Bengaluru, 2017. Has guided a number of students for the research undertaken by them. Honoured with "THE BEST TEACHER" award for the year 2006 by the KLE University, Belgaum, Karnataka, India.

Dr Aravind Shenoy

Dr Aravind Shenoy has 30 Years Teaching experience in Restorative Dentistry and Endodontics, with special focus on Ceramics and Adhesive Dentistry. Undergraduate and post graduate teaching at the RGUHS University in the Subject of Restorative Dentistry and Endodontics. Editor of South Asian Edition of "Philips Science of Dental Materials" Elsevier Publications. Co Author of "Endodontics- Principles and Practice" Elsevier Publications Ex Member Board of Studies, Rajiv Gandhi University of Health sciences, Fellow of International College of dentistry Member Editorial Board: Journal of Conservative dentistry,World dental Journal, Journal Of Indian Dental association. Course faculty for the Endodontics PG Diploma course conducted by Indira Gandhi National Open University. Course faculty for the Certificate course on Esthetic Dentistry, conducted by KLE University, Belgaum. Course Faculty for Full Mouth Rehabilitation in Collaboration with Manitoba University, at Dubai and Bahrain. Course faculty Ceramic Laminate Veneers Course at Faculty of Dentistry, Melaka Dental College, Melaka Malaysia. Course Faculty for Ceramic Laminate Course conducted Bi -Annually at Dubai, UAE in association with IDRR. Course Faculty - Endodontics for Gyan Share Online, an online portal to promote dental education for needy dentists. Accomplished teacher with 30 years of teaching experience, at both undergraduate and post graduate level Been in private practice since 1998. Extensive clinical experience in areas of Esthetics, Oral rehabilitation and Endodontics. Advanced training in Germany and Switzerland. Conducted more than 100 lectures and courses in India. Special Interest in Dental Photography. More than 40 publications and two texts.

Dr R S Mohan Kumar

Dr. R. S. Mohan Kumar obtained his Master of Dental Surgery in the field of Conservative Dentistry and Endodontics from Dr. MGR University in the year 2004, an alumnus of Saveetha Dental College. Is a Fellow in Implantology and obtained a Diploma in LASERs. Served as faculty in Saveetha Dental College prior to being appointed as a Senior Consultant for a tertiary hospital in the Kingdom of Saudi Arabia. Currently rendering his services as Professor at Priyadarshini Dental College, Chennai. A successful clinical practitioner since the year 2004. Has rendered his services as the Joint Secretary and Secretary of Indian Association of Conservative Dentistry and Endodontics, Deputy Editor of Journal of Conservative Dentistry, official publication of IACDE, Treasurer of the Academy of Cosmetic Dentistry, India. Is a Diplomate in the Indian Board of Micro Restorative and Endodontics (IBMRE), Director of MFMA in Association with Saveetha Dental College. A proficient orator and teacher, has conducted various workshops pertaining to Microdentistry and Aesthetics.

Dr Balaram Naik

Dr. Balaram Naik, presently Principal, former Dean Administration and former Professor & Head of the Department of Conservative Dentistry and Endodontics at SDM College of Dental Sciences Dharwad and Dean Faculty in Shri Dharmasthala Manjunatheshwara University, Dharwad. He has completed his BDS (1991) and MDS (1994) from SDM College of Dental Sciences & Hospital, Sattur, Dharwad Presently he is a member of B O S in Krishna Institute of Medical Sciences Deemed University. He was CHAIRMAN, B O S in Dentistry (PG) Rajiv Gandhi University of Health Sciences, Bangalore. He is member of IACDE, MPFA and ISPRP. He is founder Vice President of ADAI. He is Vice President IACDE. He is former Secretary of IDA Dharwad District Branch, Karnataka and conducted many dental camps in collaboration with Colgate Palmolive India Ltd. Appointed as Member Governing Council Al Ameen Dental College Bijapur by RGUHS. He was Programme Incharge for IGNOU. He has given several radio interactions in SDM Doctor Samvadane at Dharwad Radio station. He has for his credit many articles published in National and Inter- National Journals. He has delivered many keynote lectures in National and State Conferences. DCI inspector to many colleges and a Member of Advisory board of Journal of Conservative Dentistry, Journal of Investigative Dentistry and Journal of Oral Research and Review. He has been examiner for BDS, MDS of various universities. He has teaching experience of more than 28 years and served at SDM College of Dental Sciences, Dharwad, since 1994 in various capacities. He has guided nearly 30 Post-graduate students. He is also Ph.D guide.

Dr P Karunakar

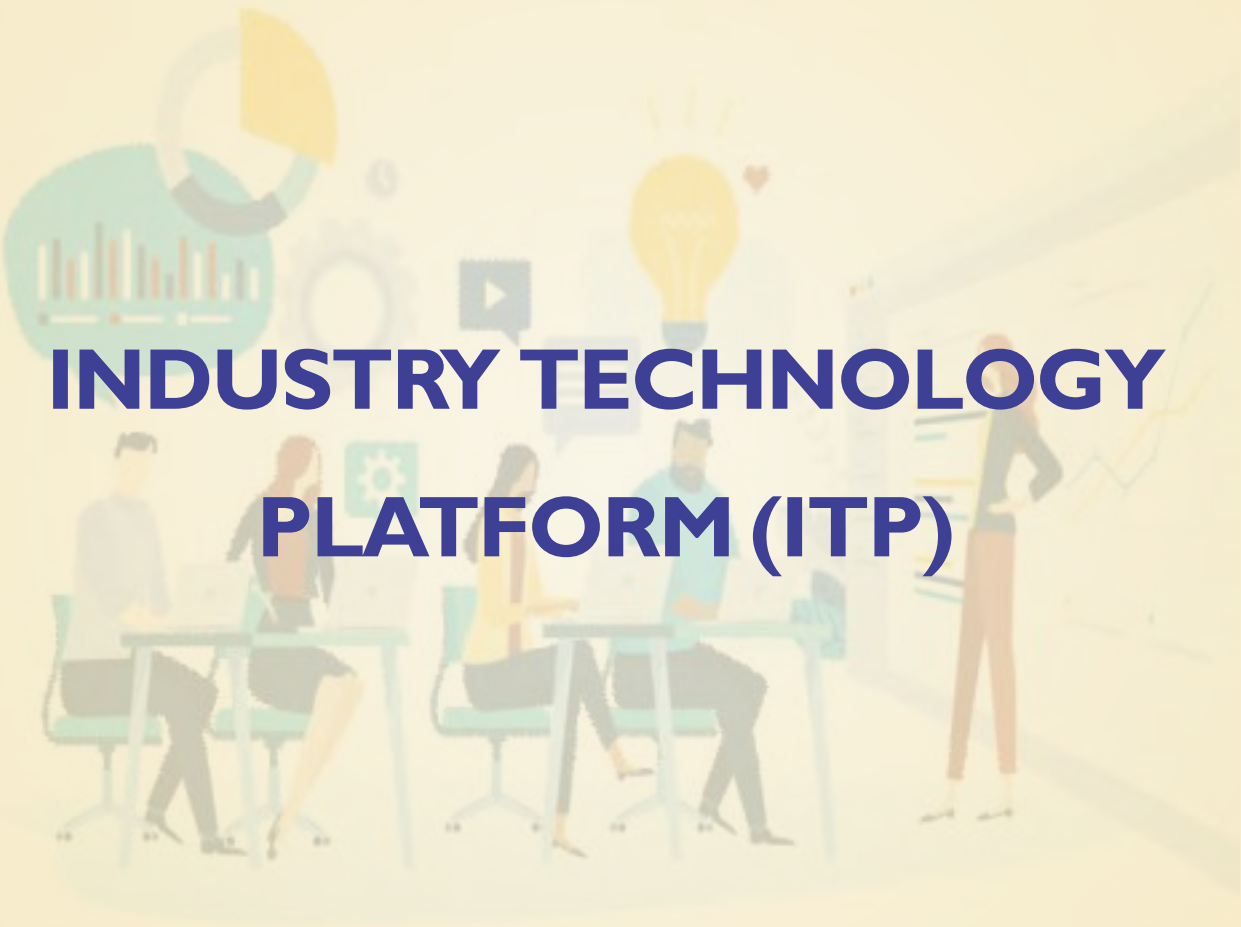
Dr Karunakar received his BDS degree from SDM College of Dental Sciences, Dharwad, Karnataka University in 1990. MDS in Conservative Dentistry & Endodontics from SDM College of Dental Sciences, Dharwad, Karnataka University in1994. Currently serves as Principal, Professor and Head of Dept. of Conservative Dentistry and Endodontics, Panineeya Mahavidyalaya Institute of Dental sciences & Research Centre, Hyderabad. He was former member of Dental Council of India (DCI), New Delhi. Former President of IACDE. Former Vice President of IDA. Has 58 publications of which 19 International and 26 national. Has contributed to 2 textbooks- Sturdevant's Textbook of Conservative Dentistry and Dr Nisha Garg Textbook of Endodontics Member of NTR Blood Donation Camps [Indo American Hospital] Delivered a Keynote Lecture in World Dental Conference 2020 And Lecture on Endodontics at Baba Farid University of Health Sciences, Faridkot during Master Class in Endodontics on 7th March'2022 with IDA Punjab, Patiala and Jalandhar Branch

Dr. Sarjeev Singh Yadav

Dr. Sarjeev Singh Yadav did his BSc Honours from prestigious Osmania University. He obtained his graduation from Madras Dental College in 1989. Post graduation in Conservative Dentistry & Endodontics from GDC&H, Hyderabad in 1994. In a career spanning over more than 28 years, he achieved several distinctions as an UG, PG, and Ph.D. examiner and paper setter for various universities at India and abroad. He is a teacher par excellence, guide, mentor as well as a clinician. Dr. Yadav was awarded a Life time achievement award in 2016 by IDA Telangana State. Dr. Yadav is associated with active clinical research and presented a good number of papers at many national conferences. He is credited with 20 publications in International & National journals & has authored, contributed chapters to text books. Dr. Yadav is credited with original research Notation System. "Sarjeev's Supernumerary Tooth Notation System". Dr. Yadav is editorial board member of 7 Indexed journals. He has given many 162 keynote lectures and has conducted guest lecturers, work shops, Hands on Courses at various National, State level conferences such as IACDE, IES, IDA, Indian Medical Association & Zonal CDE, & for various universities such as Dr. NTRUHS RGUHS, KNRUHS, and many Deemed Universities. He has presented/ moderated 32 webinars for various International, National, State organisations/ associations in both Govt and PVT sectors. Dr. Yadav is also a member of Speaker Bank of IACDE. Consultant & Chief Investigator Basic drug research @Hereto, Aurobindo, and Cipla. Dr. Yadav is a Certified HIV Counsellor. Dr. Yadav is a DIPLOMATE in BIO- MEDICAL WASTE MANAGEMENT & Right to Information Act. GOVT. of INDIA. Dr. Yadav works with a motto of; "Service to both physical and mental satisfaction of both the ends of service providers."

Dr. T. Premlata Devi

Curriculum Vitae of Dr. T. Premlata Devi Presently working as Associate Professor , Conservative Dentistry and Endodontics, Dental College, Regional Institute of Medical Sciences, Imphal , Manipur. Worked in Manipur Health Services As Dental Surgeon Since 1996 till April 2013 and then joined Dental College, RIMS, Imphal as an Assistant Professor in the department of Conservative Dentistry April 2013. Participated as Expert member in Manipur Public Service Commision for recruitment of Dental Surgeons , Manipur Health Services. Acted as an internal and external examiner for BDS professional Examinations. Actively involved in scientific activities, given guest lectures on esthetic dentistry and endodontics, have organised various CDE programmes and attended various International and National conferences and also chaired many scientific sessions. Published many articles in high impact journals. At present : 1. Member, Academic Sub Committee, Regional Institute of Medical Sciences, Imphal , Manipur. 2. Vice President, Indian Dental Association Manipur State Branch. 3. Secretary, IACDE North East Chapter.



INDUSTRY TECHNOLOGY PLATFORM (ITP)

DR MITHRA N HEGDE

DR RAKSHA BHAT

MAGNIFICATION ENHANCED DENTISTRY

DAY 1 (7th JULY):
08:00 – 08:45 AM
10.00 AM onwards

DR MOHAN KUMAR R S

THE AESTHETIC DENTISTRY CLINIQUE

DAY 2 (8TH JULY): 08:00-10:00 AM

DAY 3 (9TH JULY): 08:00-10:00 AM

DR SHISHIR SINGH

COL SONALI SHARMA

JIZAI: UNRAVELLING THE INNOVATIVE SECRET TO ROTARY SAFETY AND EFFICIENCY

DAY 2 (8th JULY): 08:00-10:00 AM

DAY 2 (8th JULY): 04:00-06:00 PM

DR MAHESH JAGWANI

INTEGRATING DIGITAL DENTISTRY

DAY 2 (8th JULY): 08:00-10:00 AM

DR JAYASHREE HEGDE

RETREATMENT, PREFABRICATED POST AND CORE –MODERN TECHNIQUES

DAY 2 (8th JULY): 04:00-06:00 PM

DAY 3 (9th JULY): 08:00-10:00 AM

DR HARI PRABHU

DIGITAL DENTISTRY – CHAIRSIDE CAD/CAM, CEREC WORKFLOW

DAY 2 (8th JULY): 08:00-10:00 AM

CBCT

DAY 3 (9th JULY): 08:00-10:00 AM

DR ANAND

COMPREHENSIVE ENDO SOLUTION

DAY 2 (8th JULY): 08:00-10:00 AM

DR KARTHIK SHETTY

ENDODONTIC SEALERS – THEN AND NOW AN INTRODUCTION TO BIODENTINE

DAY 3 (9th JULY): 08:00-10:00 AM


ABSTRACTS

DELEGATES PRESENTATIONS

NANOSILVER- BEYOND ITS ANTIBACTERIAL EFFECT IN DENTISTRY

TEENA SHEETHAL DSOUZA

Most engineering and science curricula will soon include nanotechnology as a requirement. It is undeniable that advanced applications based on nanoscience are having a significant influence on almost all areas of research, from fundamental to more problem-solving scientific endeavours. Among metallic nanoparticles, silver nanoparticles have stood out in scientific research for presenting antimicrobial properties and biological activity against bacteria, fungi, and enveloped viruses. Silver nanoparticles emerged as a promising compound to be used in dentistry, since the incorporation of antimicrobial substances in dental biomaterials has been a strategy adopted by some researchers. Silver nanoparticles along with its broad-spectrum antimicrobial property, has distinctive physico-chemical properties, including high thermal and electrical conductivity, surface-enhanced Raman scattering, chemical stability, catalytic activity and nonlinear optical behaviour. Other than these properties it has also shown to enhance the physical and mechanical properties of dental cements. This review paper discusses a wide array of inherited properties that silver nanoparticle possesses in order to improve the existing dental cements.

MICROBIOLOGICAL EVALUATION OF THE DISINFECTION OF ROOT CANAL SYSTEM USING DIFFERENT IRRIGATION PROTOCOL

SHRUTHI H ATTAVAR

Aim: The purpose of the present study is to analyse the potential role of irrigants along with the activation system in the disinfection of the root canal space. Ninety patients with periapical lesion , swelling were selected for the study and the canals were prepared with pro taper universal file system, followed with disinfection with sodium hypochlorite and chlorhexidine and activation with Endoactivator ,passive ultrasonic and laser . Pre and post-operative samples were taken from the apex of the tooth using paper points. Microbial colony counting was done to analyse the amount of bacterial growth before and after irrigation. The presence of E faecalis was confirmed using gram staining, bile esculin agar testing, and finally with a polymerase chain reaction . Results: Pre-treatment and posttreatment there was a statistically significant difference between groups irrigated with sodium hypochlorite and chlorhexidine and activated with three irrigating device with P value <0.05 . Further sodium hypochlorite adjunct with activation device endoactivator , passive ultrasonic irrigation and laser showed a statistically significant difference compared to that of chlorhexidine.

EVALUATION OF WORKABILITY OF NANOPARTICLE INCORPORATED CYANOACRYLATE SEALER – AN INVITRO STUDY

DR CHITHARANJAN SHETTY

Aim: This study aims to determine the setting time and flow of a novel root canal sealer material with nanoparticle incorporated cyanoacrylate. Materials and Methods: To determine the setting time, sealer materials were mixed and packed into the stainless steel ring molds of specific dimensions that are placed on a glass plate. The whole assembly was stored at 37°C, >95%relative humidity for at least 1 h. To measure the setting time, the needle of a custom made Gilmore apparatus was adjusted vertically onto the surface of the sealer. To determine the flow, a volume of 0.05 ml mixed sealer was dropped on a glass plate. At 3 min after the onset of mixing, a second glass plate of 20 g weight was placed on the sealer and a 100 g weight was added to make a total mass of 120 g. The 120 g weight was unloaded after 10 min from the start of mixing. The minimum and maximum diameters of the sealer discs were measured by a digital caliper with a resolution of 0.01 mm. Results: Nanoparticle modified cyanoacrylate cement has an initial setting time of 40 min and a final setting time of 75 min. Whereas the initial setting time for the AH Plus sealer is 238 min and the final setting time 480 min. The formulated nanoparticle incorporated cyanoacrylate sealer has a flow of 23.5 mm which is within the acceptable limits of ISO specification. Conclusion: The nanoparticle incorporated cyanoacrylate sealer has better setting time and flows within the limit of the American Dental Association specification. Keywords: Cyanoacrylate cement, flow, Fourier transform infrared spectroscopy, nanoparticle, setting time

LAKSHMI NIDHI RAO

BIO-ACTIVE GLASS IN BIOMEDICINE - A REVIEW

Bio-active glasses are novel dental materials that are different from conventional glasses and are used in dentistry. Bio-active glasses are composed of calcium and phosphate which are present in a proportion that is similar to the bone hydroxyapatite. These glasses bond to the tissue and are bio-compatible. The incorporation of Bio-active glass improves the mechanical properties of the composite materials as well as its bio-activity and regenerative potential and hence have a wide range of medical and dental applications and are currently used as bone grafts, scaffolds ,coating material for dental implants etc. The motivation of this review is to provide an overview of the composition, properties, their applications and future perspectives of bio-glasses.

TONY MATHEW

TITLE: CONFOCAL ANALYSIS OF SEALING ABILITY OF BONE CEMENT AND BIODENTINE AS A ROOT END FILLING MATERIAL - AN IN VITRO STUDY

Introduction: One of the functions of a root-end filling material is to provide a fluid-tight apical seal, preventing bacteria and bacterial by-products from reaching the periradicular tissues. For root end filling, a variety of materials have been recommended. Aim: To compare the sealing ability of polymethylmethacrylate (PMMA) bone cement and Biodentine as root-end filling materials by assessing the degree of microleakage through confocal laser scanning microscopy. Materials and Methods: 20 extracted maxillary incisors were root canal treated using the rotary ProTaper system. Apical root resections followed by retrograde cavity preparation were done. The teeth were divided into 2 groups and filled with the 2 tested materials (PMMA bone cement and Biodentine). Samples were coated with nail varnish, immersed in 0.5% aqueous solution of rhodamine B dye for 24 hours, and rinsed with water to remove excess dye. Samples were horizontally sectioned at 1 mm intervals into 3 using a diamond disk and were labeled A, B, and C and considered first, second, and third respectively based on their distance from the apex. Each slice was divided into 4 equal parts and evaluated using a confocal laser scanning microscope. Dye penetration was scored based on the amount of microleakage. The data were analyzed by one-way ANOVA. Results: Intergroup comparison of the mean scores of dye penetration showed that there is a statistical difference between PMMA bone cement and Biodentine, in sections B and C (pd"0.05). Both the groups showed no statistical difference in dye penetration scores in section A. Conclusion: The microleakage is least with PMMA bone cement followed by Biodentine. Microleakage was least in section C followed by sections B and A.

RAHUL HALKAI

EVALUATION OF SALIVARY ALPHA AMYLASE STRESS BIOMARKER LEVELS IN PATIENTS WITH SYMPTOMATIC AND ASYMPTOMATIC IRREVERSIBLE PULPITIS- A CLINIC-BIOCHEMICAL STUDY

Background: Salivary alpha amylase (SAA) is one of the stress biomarkers. Since pulpal pain causes distress to patients, therefore, evaluation of SAA in such cases helps to evaluate degree of stress. Objectives: To estimate SAA levels in patients with symptomatic and asymptomatic irreversible pulpitis in comparison to healthy individuals and to correlate to stress. Methodology: Forty-five subjects were included in the study after obtaining written informed consent. Subjects with symptomatic and asymptomatic irreversible pulpitis were diagnosed following history, clinical and radiographic examination were included and subjects with history of medical ailments, conditions effecting salivary flow and history of smoking, tobacco chewing, and pregnancy were excluded and were divided into three groups (n=15) as follows. Group 1: Healthy individuals with no history of pulpal pain. Group 2: Subjects with symptomatic irreversible pulpitis. Group 3: Subjects with asymptomatic irreversible pulpitis. In all groups, 5 ml of unstimulated saliva sample was collected using spit method and SAA levels were estimated using 3,5 dinitro salicylic acid (DNS) method. The intensity of color change was measured using spectrophotometer at 540 nm for estimating SAA levels. Statistical analysis: Data was analyzed using one-way Anova and post Hoc Tukey multiple comparison tests (pd"0.05). Results: Highest mean values were found in group-2 followed by group-3 and least in group 1. Multiple comparison between groups using Post hoc Tuckey test showed significant difference between all the groups. Therefore, SAA values were found to be highest in subjects with symptomatic irreversible pulpitis (group-2), followed by asymptomatic irreversible pulpitis (group-3) and least in healthy individuals (group-1). Conclusion: A positive correlation was found between SAA levels and the severity of pulpal diseases indicating highest stress in subjects with symptomatic irreversible pulpitis compared to asymptomatic irreversible pulpitis and least in healthy individuals. Key words: Saliva, stress biomarker, salivary amylase, symptomatic irreversible pulpitis, asymptomatic irreversible pulpitis.

DR KIRAN R HALKAI

COMPARATIVE EVALUATION AND CORRELATION OF SALIVARY TOTAL ANTIOXIDANT CAPACITY WITH DENTAL CARIES AMONG SMOKERS AND TOBACCO CHEWERS IN KALABURGI DISTRICT OF INDIAN SUBPOPULATION–A CLINICO BIOCHEMICAL STUDY.

Aims: To compare and correlate the effect of smoking and tobacco chewing on total antioxidant capacity (TAC) and pH of saliva in caries free and caries active individuals in this region. Methodology: The study was conducted after obtaining institutional ethical clearance. About 180 male patients in the age group of 20 – 60 years are selected based on selection criteria and an informed written consent is obtained. The study subjects are divided into three groups (n=60 each) as follows. Group 1 : Subjects with no history of tobacco chewing and smoking. Group 2 : Subjects with history of only tobacco chewing Group 3: Subjects with history of only smoking. Each group is further divided into two subgroups (n=30 each) as A: with dental caries and B: without dental caries. Dental caries is evaluated using DMFT (Decayed, missing, filled, teeth) scoring criteria as proposed by WHO. Saliva samples are collected by spitting method. subjects are instructed to spit into a sterile saliva collecting vial every 60 seconds for 10 minutes. The pH of the sample is determined immediately using a single electrode digital pH meter. About 5ml of saliva samples are centrifuged at 4000 rpm for 10 minutes at 4°C and supernatants are collected for further analysis. Salivary TAC is assessed using Ferric Reducing Antioxidant Power (FRAP) assay. The absorbance was read at 700 nm in a visible spectrophotometer, and the data is noted. Data is statistically analyzed by One-way ANOVA followed by Post Hoc Tukey multiple comparison test ($p<0.05$) Results & Conclusion: yet to be evaluated. Clinical significance: Since saliva is the first body fluid that encounters chewing and smoking hence, evaluation of salivary TAC help in understanding the prevalence of dental caries among smokers and tobacco chewers, risk of individuals, take preventive measures.

DR. MRINALINI

The C-shaped canal configuration is a developmental anomaly that results from the Hertwig epithelial sheath's inability to fuse with buccal or lingual root or its inadequate development during the root embryological stage. To evaluate this highly complex anatomy, a newer imaging modality like CBCT is recommended. The irregular canal spaces and varying configuration makes it difficult to achieve a 3-dimensional seal. The present case report is about the non-surgical endodontic management of the C-shaped canal with a 1-year follow-up using modification in obturation technique. The cartridge of the gutta-percha was modified by creating notches on the lateral aspect. The proposed modified technique enables the adequate lateral flow of the obturating material in inaccessible areas of the canal.

DR. JYOTHIASHITH SHETTY

Title - Biomodification of dentin

Biomodification of dentin is a biomimetic approach, mediated by bioactive agents to enhance and reinforce the dentin by locally altering the biochemical and biomechanical properties. Biomodification of dentin can result in dentin surfaces with high strength and low biodegradation rates than that of the natural tissue. The long term effects of dentin biomodifiers may be applicable for root caries prevention by protecting the root surfaces against organic degradation. Biomodification of dentin using bioactive agents may improve the quality and durability of dentin -resin bonds. Biomodification of dentin are desirable for prevention and restoration of dentinal caries, improved stability renders collagen compositional and structural integrity against proteolytic degradation. The stabilized collagen can further inhibit demineralization and promote remineralization. Moreover, durable mechanical properties of collagen help maintain inerfacial sealing between restoratives and dentine surfaces. Preliminary in vitro studies have provided strong evidence of its application in dentin-resin bonded interfaces and caries prevention and progression. Among the various synthetic and natural products tried proanthocyanidin appear to be most promising due to its biocompatibility , high dentin bioactivity and renewable resources.

DR. DARSHANA DEVADIGA

Biomineralization of Dentin

Mineralized tissues of teeth are continuously subjected to a dynamic balance of demineralization and remineralization due to constant fluctuations of temperature, moisture, the presence of microbial biofilm, and pH changes throughout the life in the oral cavity. Dental caries is a highly prevalent chronic multifactorial transmissible infection that results in the dissolution of tooth structure while in contrast, dental erosion is considered to be a surface phenomenon caused by exposure to the acid of nonbacterial origins which advances by progressive loss of softened surface layers under further erosive abrasive challenges.

With the increasing prevalence of erosive tooth wear affecting both adults and children; designing optimum protocols of management in a noninvasive manner is gaining precedence. As the traditional approaches of restorative management have demonstrated an annual failure rate of up to 7.9% mainly due to secondary caries at the marginal tooth restoration interface and hypersensitivity related to erosion; contemporary approaches such as noninvasive intervention for induction of dentin surface remineralization in non-cavitated lesions by therapeutic agents need to be explored for more effective management.

DR. UPASANA REDDY

BIOMIMETIC & HOLISTIC MODALITIES IN RESTORATIVE DENTISTRY

Teeth, as a highly mineralized tissue, are constantly subjected to processes of demineralization and remineralisation during the whole life. In the pathological conditions, demineralization of tooth hard tissues is faster than remineralization in a state of biofilm dysbiosis caused by cariogenic bacteria. The irreversible loss of mineralized tissues seriously impacts the morphology and function of teeth. Dentists can play an important role in its management using bioactive agents to enhance and reinforce the mineralised tissue by locally altering the biochemistry and biomechanical properties through biotherapeutic modification. Diverse strategies have been performed to investigate the remineralization potential of of biomimetic and holistic modalities. One relatively small but significant step towards dental tissue repair/regenerations is the development of a biomineralization strategy to enhance the tissue properties by modifying the chemistry of the tissue. The biomodification of existing hard tissue structures, specifically tooth dentin, is a novel approach to improve the biomechanical and biochemical properties of the tissue for preventive or reparative/restorative purposes. Well-known synthetic agents, nature derived agents and also physical methods categorised as collagen cross linking agents have shown to effectively interact with type I collagen, thereby leading to biomimetic mineralisation of dentin.

DR GOWRISH S, DRVANDANA SADANANDA

Nanoparticle Carriers in Endodontics

Advent of nanotechnology and nanomaterials has revolutionized the engineering, pharmaceutical and medical field to a great extent. These nano particles typically have a size ranging from 1 to 100 nm (nanometer). Though nanoparticle and nanoparticle technology is used quite widely with restorative material such as composite resins, bonding agents, cements etc their use in endodontics is recently gaining popularity. The nanoparticle technology has resulted in developing newer drugs and drug delivery system, their applications. This paper focusses on incorporation of nanotechnology in Endodontics an its various applications in intracanal medication and root dentine collagen stabilization.

DR.NIREEKSHA

Ubiquitous nature of dental caries in all the populations globally, varies in between and in populations due to its complex nature. The fact that it cannot be prevented and its onset may be at any point of time is not constant throughout the course of life. Among the various factors that affects tooth formation and maintenance vitamin D also plays a major role by actively participating in the formation, mineralization and protection of tooth surface through antimicrobial peptide production through various immune responses. The antimicrobial responses are conducted through antimicrobial peptides. This study aims to evaluate the association of vitamin D receptor gene polymorphism (Fok1,Taq1,Apa1 and Bsm1) with dental caries prevalence. Study was conducted among adults reporting to the outpatient department of Endodontics. They were further divided into caries free and caries active group based on their caries experience. Salivary DNA isolation was done and PCR RFLP was conducted for VDR gene SNP's.Genetic evaluation of VDR gene single nucleotide polymorphisms showed association of genotypes with "caries risk" and genotypes that are "protecting factors" thereby justifying to host susceptibility of individuals, based on these evidences the treatment strategies can be planned and executed.

DR PREETHESH SHETTY

MICROBIOME-HOST INTERACTIONS IN IRREVERSIBLE PULPITIS

Pulpitis Is Inflammation Of Dental Pulp Caused By An Opportunistic Infection Of Pulp Space By Commensal Oral Microorganisms. Microbial Agents Are Generally Accepted To Be Main Causes Of Endodontic Infections And Failure. The Bacterial Effects On Pulp Are Caused Either By Bacterial Virulence Factors And Antigens Or By Bacterial Cells Reaching The Pulp Via The Exposed Dentinal Tubules, Direct Pulpal Exposure, Periodontal Pockets, Lateral And Apical Foramen. The Rationale For Endodontic Treatment Is To Eradicate The Infection, To Prevent Microorganisms From Infecting Or Re-Infecting The Root And/Or Peri-Radicular Tissues. Thus, A Thorough Understanding Of The Endodontic Microbiota Associated With Different Forms Of Disease Is The Basis For The Success Of Endodontic Treatment. The Review Discusses Composition And Bacterial Diversity Of The Microbiota Associated With Root Canals Diagnosed With Pulpitis To Help Provide A Better Understanding On The Interactions Of The Microbial Communities With Their Host And Analyse The Antibiotic Resistance Profiles.

DR RAKSHA BHAT

POTENTIAL BIOMARKERS FOR NON-INVASIVE DIAGNOSIS OF PULPAL INFLAMMATION

Dental pulp mounts an inflammatory reaction as a way to eliminate pathogens and stimulate repair. Pulp inflammation is prerequisite for dentin pulp complex repair and regeneration. Evaluation of pulp inflammation severity is necessary to predict the clinical success of maintaining pulp vitality. Clinical limitations to evaluating in situ inflammatory status are well-described. A molecular approach that aids clinical distinction between reversible and irreversible pulpitis could improve the success rate of vital pulp therapy. Pulp inflammation involves several biological processes evaluable at the macroscopic, microscopic, and molecular levels. Inflammatory mediators orchestrate the inflammatory process inside the pulp tissue. Consequently, the molecular phase precedes the macroscopic and microscopic inflammatory changes; thus, it would be instructive to study their expression relative to the severity of the pulpal disease. The review discusses the potential inflammatory molecule expressions related to clinical diagnosis to identify key inflammatory biomarkers, which may help promote the success of vital pulp therapy.

STUDENTS
PAPER PRESENTATIONS

TANYA CHONDAMMA

ABSTRACT AI-THE FUTURE OF NEXT GEN. DENTISTRY .

Artificial Intelligence (AI) has revolutionized the area of technology and is seeing fast progress. Deep convolutional neural networks (CNNs) are a rapidly emerging new area of medical research, and have yielded impressive results in diagnosis and prediction in the fields of radiology and pathology. The future of dentistry must certainly require the introduction of multiple technologies and the computer-generated expertise of specialists in dental radiographic analysis. Thus, the use of Deep learning and Machine learning will aid diagnosis and make treatment affordable, efficient and personalized. Operators will be able to pinpoint specific problems thereby speeding the recovery process. Although AI cannot substitute the position of dentist or oral radiologist, the precise and efficient analyzing of radiographic images by artificial neural networks provides interesting diagnostic possibilities for the future. Hence it is a great prospect to develop an auxiliary diagnosis system for dental radiographs.

DR. SHREYANA NANAIAH

SMART DENTISTRY

"Rethink what a smartphone can do!" Technology powers dentistry, taking it to greater heights and helping patients achieve an enhanced level of oral care that contributes to an overall healthy lifestyle. The practice of dentistry is always evolving, and it is essential that dental professionals are up-to-date on new ways to provide care. With the development of information technology, an increasing number of healthcare professionals are using smartphones and mobile medical applications in their clinical practice. Digital and technological innovations in endodontics have led to the development of various web-based and smartphone-compatible diagnosis and case-difficulty assessment tools that can help identify dental issues and management of endodontic complexities. Smartphones which have always been a part of clinical dentistry for documentation of cases, are now showing promising results in caries detection, communication and patient education, transfer and assessment of digital radiographs, treatment plan of interdisciplinary procedures and complex cases, and aesthetic analysis. This literature review guides you through the various applications of multi-functional smartphones in dentistry that help in empowering and expanding dental practice.

KAVYASHREE M

Direct dental pulp capping is one of the most commonly used vital pulp preservative treatment methods for permanent teeth. Such dental procedures aim to preserve dental pulp tissue, maintain the physiological function of the dentine-pulp complex. The conventional materials used in direct pulp capping are Zinc Oxide Eugenol, Glass Ionomer (GI)/Resin-Modifed Glass Ionomer (RMGI), Calcium Hydroxide and Mineral Trioxide Aggregate (MTA). During pulp capping, an adequate pulp-capping agent is used and placed directly on the dental pulp tissue; therefore, biocompatibility and cytotoxicity of the material should be evaluated prior to use of a novel material as a pulp-capping agent. Platelet-rich fibrin (PRF), which belongs to the second generation of platelet concentrate products, has favourable properties, including osteogenic ability. PRF is rich in growth factors promote cell proliferation and osteogenic differentiation in human dental pulp cells (HDPCs)

SHEETHAL A S

CHITOSAN NANOPARTICLES:A PROMISING MATERIAL INTHE ERA OF NANO ENDODONTICS

Nano technology has presented its impression on almost every field of science and development. The concept of using nanoparticles in endodontics as a treatment modality has been under research in many in-vitro studies. These anti microbial nanoparticles offer numerous advantages over conventional agents and hence there has been an enormous increase in the application of nanoparticles in various fields of dentistry since their introduction. They can be incorporated in a sealer, obturating material, intracanal medicament and irrigating solutions to provide the desired results. Chitosan nanoparticles are one of the commonly investigated nanoparticles in endodontics, and they have gained significant interest among researchers. There is no doubt that the era of Nano-endodontics is paving its way to a bright future in dentistry.

ROSNA.P

PHOTOBIOMODULATION - A POWERFUL TOOL IN DENTISTRY

Pulp exposure, following Caries or Trauma to teeth is very common and the consequences can lead to severe pain and infection. In traditional dentistry, when the pulp of a tooth becomes infected, root canal treatment or extraction is performed. A simpler alternative is Pulp capping. Several factors beyond the type of exposure may influence the prognosis of pulp capping such as, diameter and location of the pulp exposure, the status of the pulp, patient age and the pulp capping material used. With the introduction of Laser technology in the field of dentistry, has helped us in overcoming problems and drawbacks posed by conventional methods. In Photobiomodulation therapy, electromagnetic radiation in the visible wavelength or in the near infrared range are used, which reach 3 to 15 mm depth of penetration in hard and soft tissue. Photobiomodulation has been used in dentistry and medicine due to its anti -inflammatory, Bio- modulating and pain relief effect as well as it's important role in wound healing. Due to its Bio-stimulatory capability, leading to increase in patient comfort, clinician can better manage patient pain during the treatment period. The aim of the presentation is to show the treatment outcome through direct pulp capping with Photobiomodulation therapy.

LOCHAN

EVALUATION OF PHYSICAL PROPERTIES OF NEW CALCIUM-SILICATE BASED ROOT CANAL SEALER

Aim: To evaluate flow, pH and solubility of Bio C and Cerafill RCS in comparison with AH Plus sealer Materials and Method: Root canal sealers, AH Plus, Bio C and Cerafill RCS, following the manufacturers instructions, were mixed under aseptic conditions. The recommendations of the ISO 6876/2012 and ANSI/ADA 2000 standards were followed to measure the flow. The recommendations of the ISO 6876/2001 were followed to measure the solubility. Discs of specified dimensions were prepared and measured for pH at regular intervals. Data will be statistically analysed by Kruskal Wallis ANOVA tests. Results and Conclusion: Awaited.

ANIRUDH SARDA

"AURORA BOREALIS" - COLD ATMOSPHERIC PLASMA FOR PAINLESS DENTISTRY

Plasma is the fourth state of matter and occurs as a natural phenomenon in the universe and appears in the form of fire, in the polar aurora borealis and in the nuclear fusion reactions of the sun. It can be produced artificially which has gained importance in the fields of plasma screens or light sources. Plasma is of two types: Thermal and

nonthermal or cold atmospheric plasma (CAP) Cold atmospheric plasma is a specific type of plasma, i.e., <104°F at the point of application. It could become a new and painless method to prepare cavities for restoration with improved longevity. Also, it is capable of bacterial inactivation and noninflammatory tissue alteration, which makes it an attractive tool for the treatment of dental caries and for composite restorations. Plasma can also be used for bleaching and for better wound healing. Research on this gas has highlighted its ability to provide pain-free disinfection of even pits and fissures of the occlusal surface of the tooth. This heralded the development of newer devices, such as plasma needle and plasma pen, that are being increasingly used in the field of dental sciences. CAP has a bright future in dentistry due to its antimicrobial properties and its cell death properties on cells. Plasma dental treatments are basically painless, drill-less, thereby making it patient-friendly, especially in children and under-served communities. While certain technical hurdles must be bridled before its application in clinical practice, it holds tremendous promise of revolutionizing dental procedures. What we all foresee is that the CAP plasma is on its way to clinical routine.

F RIZWAN AHMED

ANTI CARIOUS NANO TECH - THE FUTURE!

Caries is the most common and extensive oral chronic disease. Due to the lack of anti-caries properties, traditional caries filling materials may contribute to secondary caries and lead to treatment failure. The balance between pathological and protective factors influences the initiation and progression of caries. Nanoparticles have been experimented in the treatment of dental caries, tissue engineering, dental implantology and diagnosis of cancers. They possess antifungal and antibacterial activity, hence are incorporated in various biomaterials to potentiate this effect. Nanomaterials can interfere with the bacteria metabolism, inhibit the formation of biofilm, reduce demineralization, and promote remineralization, which is expected to be an effective strategy for caries management. The nanotechnology in anti-caries materials, especially nano-adhesive and nano-composite resin, has developed fast in recent years and can be used in various ways to potentially eradicate re-infection.

SYEDA UZMA MAHVEEN

EVALUATION OF ANTIMICROBIAL EFFICACY OF 1% PHYTIC ACID INCORPORATED WITH 0.2% CHITOSAN NANOPARTICLES AGAINST ENTEROCOCCUS.FAECALIS – AN INVITRO STUDY.

AIM: To evaluate and compare the antimicrobial activity of 1% Phytic acid and EDTA incorporated with and without 0.2% of Chitosan nanoparticles [CSNPs] against Enterococcus.Faecalis [E.Faecalis] MATERIALS AND METHODS: Stage 1: Evaluation of antimicrobial activity using agar well -diffusion method. E faecalis [ATCC 29212] strain will be subcultured and grown on the blood agar plates. The test solution of each group will be placed in the punched holes of 5 mm diameter separately and incubated for 24 hours at 370 C as follows (n=10 each) :group 1- Normal saline (control group), group 2- EDTA, group 3-EDTA +0.2% Csnps, group 4-1% Phytic acid and group 5-1% Phytic acid +0.2% Csnps. The diameter of the inhibition zone will be measured for each group. Stage 2 : Evaluation of antimicrobial activity against E. faecalis biofilm model: Fifty human extracted single- rooted premolars will be collected, cleaned and dentine blocks of 5×5mm will be prepared using middle- third of root portion; the blocks were washed with distilled water and sterilized by autoclaving. For contamination of dentin blocks, the bacterial inoculum will be transferred to presterilized individual test tubes containing 1 ml of Sheep blood agar broth and dentin block for 2 weeks with replenishment of the broth every alternate day. The specimens will be washed with distilled water and randomly divided into 5 groups and subjected to irrigants as mentioned above for 1min. Serial decimal dilutions will be prepared and 50 ìl of the dilution will be poured on SBA plates and incubated for 24 h followed by CFU/ml counting. The collected data will be tabulated and subjected to statistical analysis RESULTS & Conclusion: yet to be evaluated.

NIHALA MARIYAM

SURVIVABILITY OF ENDODONTICALLY TREATED TEETH WITH ENDOCROWN - A SYSTEMATIC REVIEW.

Introduction: Endocrowns are formed from a monoblock which are anchored to the internal portions of the pulp chamber and cavity margins, thus obtaining macro-mechanical retention by the pulpal walls and microretention by adhesive cementation. Aim: This study aims to assess the survivability of endodontically treated posterior teeth with endocrown . Materials and method: Articles were selected through systemic search involving databases like pubmed, google scholar, scopus, specific journals (hand search). Articles published in English language are selected. The search strategy is based on the keywords: endocrown, endodontically treated, posterior teeth. Results: Study in progress Conclusion: Study in progress

CHANDRAPRABHA

COMPARISON OF PRACRICE AND KNOWLEDGE SURVEY ON ENDODONTIC RETREATMENT AMONG THE GENERAL PRACTITIONERS AND ENDODONTISTS

Endodontic retreatment differs from initial root canal treatment. There are various factors that governs the success of the root canal treatment, and failure to achieve any of this may lead to the failure of the therapy. The choice of retreatment decision differs among a general practitioner and a specialist and are dependent on several factors including educational background, work experience, knowledge, and economic resources. A survey was conducted to compare the practice and knowledge regarding endodontic retreatment cases amongst general practitioners and endodontists.

SHREEYA BHARDWAJ

EFFECT OF CALCIUM HYDROXIDE AND PROPOLIS INTRACANAL MEDICAMENTS ON THE BOND STRENGTH OF CALCIUM SILICATE BASED SEALER TO ROOT DENTIN: AN IN-VITRO STUDY

INTRODUCTION The aim of this study was to evaluate the effects of calcium hydroxide (CH) and Propolis (P) pastes on the bond strength of calcium silicate–based sealer (BioRoot RCS) to the root canal dentin. METHOD Twelve single rooted human teeth were decoronated and prepared using the rotary system to size 40. The specimens were randomly divided into two groups that received an intracanal dressing with either CH or P (n = 6). The intracanal dressing was removed by rinsing with 10 mL 3 % sodium hypochlorite and 10 mL 17% EDTA followed by final irrigation with distilled water under ultrasonic activation. The root canals were then obturated with guttapercha and BioRoot RCS sealer. A push-out test was used to measure the bond strength between the root canal dentin and the sealer. The data was analysed using 2-way analysis of variance. RESULTS The push-out bond strength value of Propolis group was significantly higher than Calcium Hydroxide group ($P < 0.001$). CONCLUSION Prior application of Propolis intracanal medicament improved the bond strength of the calcium silicate-based sealer to root dentin as compared to calcium hydroxide.

GOTHE SANNIDHI SHRINIWAS

ESTIMATION OF SALIVARY FATTY ACIDS IN DENTAL CARIES- AN EX-VIVO STUDY.

Aim: To evaluate salivary fatty acid levels in caries active and caries free group and their correlation with dental caries. Objective: 1. To estimate salivary fatty acid levels in caries active and caries free group using gas chromatography.

2. To correlate salivary fatty acid levels with dental caries Materials and methods: Unstimulated whole saliva was collected using drool method from caries active and caries free individuals. The collected samples were centrifuged and the supernatant was used for estimation of fatty acid using gas chromatography. The obtained data will be statistically analyzed. Results: Awaited.

PARI ANAND

EFFICACY OF PRE-OPERATIVE SUBMUCOSAL INJECTION OF DEXAMETHASONE AND TRIAMCINOLONE ACETONIDE ON POST-OPERATIVE PAIN FOLLOWING ENDODONTIC TREATMENT OF TEETH WITH IRREVERSIBLE PULPITIS: A PROSPECTIVE CLINICAL STUDY.

AIM- To evaluate the effects of preoperative submucosal injection of dexamethasone and triamcinolone acetonide on postoperative pain after single visit root canal treatment of teeth with symptomatic irreversible pulpitis. METHODOLOGY- A total of 30 patients were selected based on inclusion and exclusion criteria. After explanation of the treatment procedure, informed consent was obtained from the patients. Study samples were divided using simple randomization method into 3 groups: A control group. that received normal saline and two experimental groups that received a single dose of either dexamethasone (8 mg/2ml) or triamcinolone acetonide (40mg/ml). After local anaesthesia and before treatment, submucosal injections were administered into the mucobuccal fold adjacent to the teeth, and a routine single-visit root canal treatment procedure was performed in all groups. After the root canal treatments, the patients were asked to score their pain level using the Heft–Parker visual analogue scale (0–170 mm) at 6, 12, 24, 48 and 72 h.

AKSHAY.V.ANAND

EVALUATION OF THE EFFICACY OF TRUNATOMY, RACE, PROTAPER RETREATMENT FILE SYSTEMS IN RETREATMENT OF MODERATELY CURVED MANDIBULAR MOLARS – AN INVITRO STUDY.

AIM- The aim of this study was to evaluate the efficacy of removing the obturating material and time taken using TruNatomy, Race, ProTaper Universal Retreatment File systems for retreatment. METHODOLOGY- Fortyfive moderately curved mesial root of mandibular molar were selected based on inclusion and exclusion criteria, decoronated and sectioned. The mesiobuccal roots were instrumented till 25 size, 4% and obturated with bioceramic sealer using 25 size 4% master cone and lateral cones of size 20 size, 2% gutta-percha cones whenever required. Pre-operative Cone Beam Computed Tomography(CBCT) scans were taken following which the teeth were divided randomly into 3 groups of 15 samples each. Later, teeth were retreated with TruNatomy, Race, ProTaper Universal Retreatment File systems. Time taken for retreatment and Post-operative CBCT scans was recorded for assessment. RESULTS- The mean total working time (in secs) for TruNatomy group was 153.47 ± 12.04, for ProTaper Universal Retreatment group was 130.23 ± 10.19 and for Race group was 123.77 ± 7.90 ($p<0.001$). The mean percentage volume of obturating material (gutta-percha plus sealer) removal for TruNatomy group was 90.43 ± 12.84, for ProTaper Universal Retreatment group was 81.65 ± 15.09 and for was 90.33 ± 6.59 ($p=0.04$). CONCLUSION- All tested endodontic files were effective in filling material removal procedure, although no system completely removed the filling material. • ProTaper Universal Retreatment group showed significantly lesser mean percentage volume of obturating removal as compared to TruNatomy group & Race group. However, the mean difference in the percentage volume of obturating removal between TruNatomy group & Race group showed no significant difference. • TruNatomy group showed significantly higher mean total working time (in secs) as compared to ProTaper Universal Retreatment group & Race group.

LOHITHA K

The aim of this in vitro study was to evaluate the efficacy of sonic and ultrasonic irrigation systems in removal of root canal sealer during endodontic retreatment using cone-beam computed tomography (CBCT). MATERIALS AND METHODS- one hundred and five extracted single rooted mandibular premolars were taken for the study. Root canals were prepared, obturated and underwent cone-beam computed tomography (cbct) imaging followed by retreatment. The samples were divided into five equal groups based on the agitation device used. Group 1- (control) was not subjected to any irrigation or agitation. Group 2- irrigation was performed with 27G needle. Group 3- was agitated with endoactivator. Group 4- agitation was performed using ultrasonic activation. . Group 5- was agitated with modified waterpik power flosser with endoactivator tip.The amount of residual sealer material in coronal, middle and apical thirds of the root canal was evaluated in CBCT. RESULTS- Data were analysed using Kruskal Wallis Test and Mann Whitney Post hoc Test. Modified waterpik power flosser showed enhanced efficacy in removing the sealer in apical third followed by ultrasonic irrigation and endoactivator. In the middle third, ultrasonic irrigation performed better than waterpik, however other groups showed no significance difference. In the coronal third, statistically significant differences were not found between the experimental groups and control group. CONCLUSION- The efficacy of sealer removal is more with both ultrasonic device and Waterpik power flosser, but enhanced efficacy is seen with power flosser in apical third and ultrasonic in middle third. However, none of the irrigation activation systems were able to remove the sealer from root canal completely.

JISHNU P.N

FLEXURAL PROPERTIES OF BIOACTIVE BULK FILL AND CONVENTIONAL BULK FILL COMPOSITE RESIN BEFORE AND AFTER SOLVENT STORAGE: A COMPARATIVE IN VITRO STUDY"

The durability and performance of bulk-fill composites can be evaluated by characterization of their mechanical properties. Resistance to fracture and clinical failure of restorative materials reflect flexural and compressive strengths. These properties are well known to be affected by their surrounding chemical environment. Different chemical substances can cause softening and dissolution of matrices, filler damage, debonding and leaching, resulting in decreased restoration durability and longevity. The aim of this study is to compare the flexural properties active bioactive bulk fill composite and filtek bulk fill composite , conditioned in different mediums. Thirty rectangular shaped (2mm height,2mm width, 12mm length) specimens will be fabricated from each material using a customized metal mold. The specimens then will be divided into two subgroups A- artificial saliva, B - 0.02N citric acid. The specimens will be immersed in respective solutions. Containers used to house the various solutions will be sealed to minimize evaporation and stored in air within an incubator. A three-point bending test before and seven days after solvent storage, using a universal testing machine at a cross head speed of 0.5mm/min will be performed on all specimens until fracture. Thus, the value of flexural strength is obtained and flexural modulus is calculated. Results showed that there is no difference in flexural properties between the two materials in different storage condition.

SREELAKSHMI. S

EXISTING SCENARIO OF PROXIMAL CONTACTS – A MINI-REVIEW

Proximal contact area denotes the area of proximal height of contour of the mesial or distal surface of a tooth that touches (contacts) its adjacent tooth in the same arch. One of the primary goals of maintaining a proper proximal contact is in protecting the periodontium against any damage due to food impaction. The status and longevity of the dentoalveolar complex lie largely on proper proximal contact in both natural dentition and restored teeth. Obtaining proper proximal contact tightness is challenging in Class II restorations. Several techniques and instruments

have been proposed to create appropriate and more anatomic proximal contacts. Generally, the key factor in producing an appropriate proximal contact is obtaining an interdental separation during the placement of the composite restoration. The aim of this mini-review is to assess the available evidence on the existing scenario of proximal contacts, the various methods of evaluation of interproximal contacts, and the comparison of various techniques to get appropriate contacts based on clinical studies.

SHANBHAG PRATHEEKVENKATESH

EVALUATION OF SALIVARY GLUCOSE LEVEL AND ORAL HEALTH STATUS OF HEALTHY INDIVIDUALS -AN EX-VIVO STUDY.

Introduction- As per International Diabetes Federation (IDF), India had 72 million cases of diabetes with prevalence of 8.8% in 20-79 years of age group and expected to rise to 194 million by 2025. Also prevalence of dental problems among diabetes reported range from 30-92%. So a chairside, non-invasive, cost effective investigation which encourages the individuals to monitor their glucose levels on regular basis should be considered. Methodology- After taking a detailed case history and examination of oral cavity as per WHO Oral Health Assesment form for Adults, 2013. All 29 salivary samples of patients between 35-44years were collected 2 hours after breakfast between 9-11am, volunteers were asked not to have anything in between. Volunteers were asked to sit upright on the dental chair with the head kept forward, the patient were instructed not to swallow or speak. 2ml of saliva were collected in sterile container. The standard salivary glucose level were measured using O-Toluidine reagent method using double beam spectrophotometer. Results- The study found out that the salivary glucose levels are measured more accurately using O-toluidine reagent method using double beam spectrophotometer. Conclusion- The study concluded that the normal range of salivary glucose level is 1-5 ug/ml in healthy individuals. And there exist a positive correlation between salivary glucose level and oral health status of healthy individuals.

MAITHILI MUTHAMMA KM

COCOS NUCIFERA IN DENTAL CARIES- A MINI REVIEW

Cocos nucifera has several unique characteristics that is responsible for its health outcomes. The two main types of coconut oil—copra oil (CO) and virgin coconut oil (VCO)—have similar fatty acid profiles; however, the latter contains higher amounts of some nutrients (e.g., vitamin E) and dietary bioactive compounds (e.g., polyphenols). It is thought to cure over thirty systemic diseases as well as confer multiple oral health benefits such as improvement in gingival health with reduced inflammation and bleeding, dental caries, resolution of symptoms of dry mouth/ throat and chapped lips, whiter teeth, reduced halitosis, enhancing the immune system, promoting wound healing, improved oral hygiene and strengthening of muscles and jaws in the oral cavity. It comprises a high percentage of medium chain fatty acids (MCFAs): 92% saturated acids and lauric acid as the primary component. Lauric acid attributes anti-microbial and anti-inflammatory properties to the oil. The viscous nature of coconut oil promotes lubrication, thereby inhibiting adhesion of bacteria or its 'by-products on the mucosal tissues. The antibacterial action is attributed to the presence of monolaurin and other MCFAs that act by altering the bacterial cell wall or penetration through it leading to disrupted cell membranes that inhibit enzymes involved in energy production and nutrient transfer, finally causing bacterial apoptosis. Many studies have been conducted on the effect of Cocos nucifera oil on various types of dental caries. The aim of this mini review is to assess the available evidence and effectiveness of Cocos nucifera oil in dental caries.

SOUMYAJIT SARKAR

AWARENESS, PRACTICE AND MANAGEMENT OF ROTARY ENDODONTIC FILE SEPARATION BY POST-GRADUATE STUDENTS IN DENTAL SCHOOLS

AIM To analyse the knowledge, attitude and method of practice of post-graduate students from dental schools on rotary endodontic file separation during root canal preparation METHODOLOGY The study was conducted using a Google-form questionnaire that was sent to various post graduate students in dental schools via mail. Most questions had multiple options to choose their answers from while some other had blanks to be filled. One entry was allowed per post-graduate student. The name and other demographics of the student wasn't required in the form and was kept anonymous. No intervention was done in patients.

SANJNA SANTHOSH MENON

EFFECT OF NATURAL EXTRACTS ON ENAMEL SURFACE -AN INVITRO STUDY

AIM: The aim of the study is to evaluate the effect of natural extracts on enamel surface. OBJECTIVES: • To evaluate the effect of Betel Leaf Extract on enamel quantitatively using Energy Dispersive X-ray Analysis [EDAX] and qualitatively by Scanning Electron Microscopy [SEM] analysis. • To evaluate the effect of Grape seed extract on enamel quantitatively using Energy Dispersive X-ray Analysis [EDAX] and qualitatively by Scanning Electron Microscopy [SEM] analysis. • To evaluate the effect of Piper betel leaf extract combinations on enamel quantitatively using Energy Dispersive X-ray Analysis [EDAX] and qualitatively by Scanning Electron Microscopy [SEM] analysis.

BHAVYE SIKKA

RESTORATIVE PREFERENCES AND TECHNIQUES USED BY DENTISTS FOR RESTORING ENDODONTICALLY TREATED TEETH: A QUESTIONNAIRE BASED SURVEY

The longevity of an endodontically treated teeth does not depend only on the root canal therapy but also on the post-endodontic restoration. Endodontically treated teeth present with significantly different mechanical properties compared to vital teeth They require special considerations for final restoration particularly where there has been extensive loss of tooth structure. Dentists are confronted with a continuously growing number of different materials for post-endodontic restoration but the final decision has to be made after thorough examination of the tooth structure left. A web-based survey was conducted to assess the current methods, applied techniques and materials used for restoration of endodontically treated teeth by specialists, general practitioners and post-graduate students.

DR. TIPPUTHIMMAIAH C.U

RADIX ENTO AND PARA MOLARIS : A CASE SERIES

INTRODUCTION Success of endodontic treatment depends on the proper identification of all the canals, thorough chemomechanical preparation followed by three dimensional obturation. This case report presents case series of mandibular teeth with extra root on the lingual side [Radix entomolaris] and extra root on the buccal side [radix paramolaris] CASE DISCUSSION Presenting a case series of radix entomolaris in a 30years, 28years,male patients and radix paramolaris in a 64 years old male patient with a history of severe, throbbing pain in mandibular molars. Diagnosis was made by radiograph by buccal object rule confirmed additional distolingual root. Endodontic treatment was inititated, Working length was determined and canals were cleaned and shaped in a crown down manner with Protaper universal rotary instruments and was obturated with single cone technique. CONCLUSION The initial diagnosis of radix entomolaris and paramolaris before root canal treatment is important to facilitate the endodontic procedure.

DR MD HAJI IDRISH

MANDIBULAR PRE-MOLAR WITH EXTRA ROOT :A CASE SERIES " SEE THE UNSEEN

" INTRODUCTION Success of endodontic treatment depends on the proper identification of all the canals, thorough chemomechanical preparation followed by three dimensional obturation.This case report presents case series of mandibular pre-molar teeth with extra root. CASE DISCUSSION Presenting a case series of mandibular premolar with extra root in a 30 year old male patient , and in a 38 year old male patient with a history of severe, throbbing pain in mandibular pre-molar. Diagnosis was made by radiograph by buccal object rule confirmed additional root. Endodontic treatment was inititated,Working length was determined and canals were cleaned and shaped in a crown down manner with neoendo rotary instruments and was obturated with single cone technique. CONCLUSION The initial diagnosis of extra root in mandibular pre-molar before root canal treatment is important to facilitate the endodontic procedure. Keywords :Abnormality ;Anatomic variation ; Bicuspid; Dental Pulp Cavity; Root Canal

RACHANA MAIYA

BIOMEDICAL WASTE MANAGEMENT STRATEGY SINCE COVID-19 PANDEMIC – A RETROSPECTIVE ANALYSIS

Biomedical waste is any waste which is generated during the diagnosis, treatment, immunization process or in biological research activities. Management of biomedical wastes has proven to be the most prevalent challenges faced by the society in the last few decades. The volume of biomedical waste has increased tremendously during Covid-19 pandemic. Due to the high infectivity and transmissibility of novel coronavirus it is imperative that the healthcare workers take utmost protective measures.The increased demand and consumption of personal protective equipment (PPE) has led to significant rise in the Covid-19 related waste. Proper waste management plays a huge role in reducing the spread of the virus. Inappropriate management poses severe health hazards and escalates the rate of secondary transmissions amongst the health care workers. Ensuring the timely, orderly and efficient disposal of Covid-19 related medical waste has become an important part of the battle against the pandemic. Aim - To analyse the effect of Covid-19 outbreak on biomedical waste management in a private and government hospital set up during Covid-19 pandemic. Method - In this study the hospitals were surveyed in terms of waste generation, composition and its management. The data was collected by interview with the staffs responsible for waste management at different levels. Result - The pandemic led to increased waste generation on an average of 27.9% in private and 21.8% in public sector. The result obtained from the present study shows significant changes in the medical waste generation. It was also observed that stringent practice which includes waste segregation, temporary storage, frequent collection, transportation, disinfection and final disposal has had a significant impact on the management of Covid-19 waste.

ADITYA SHRIHARSHA INGLE

DENTIN BIO-MODIFYING AGENTS:A LITERATURE REVIEW

Exposure of unprotected collagen fibrils as a result of demineralisation of enamel and dentin makes them prone to degradation by acidic products of oral bacteria and hydrolysis associated with collagenolytic enzymes such as MMPs. This poses several difficulties in the prognosis of both reparative and restorative therapy. Unlike enamel, a stable collagen scaffold is essential for remineralisation of dentin. The degradation of the collagenous matrix at resin- dentin interfaces impairs dentin bonding stability leading to a decreased bond strength and increased nanoleakage. The presence of cross-links in solubilized collagen provides strength, reinforcement, and stabilization to the fibrils. More resistant, stable, and insoluble network is important for collagen to serve as a stable substrate

for remineralisation and dental adhesive restorations. Hence, biomodification strategy is employed to improve the biochemical and biomechanical properties of dentin. Dentin biomodifiers interact with various extracellular matrix components promoting mineralization, biostability, and improves the mechanical properties of the structure- A concept known as biomimetic repair. Literature suggests that several natural and synthetic agents have been employed as dentin biomodifiers for testing preservation of collagen, their cross- linking potential, MMP inhibition, remineralisation potential and improvement in dentin- resin bond stability. Phenols and catechins from plants are the major sources of natural dentin biomodifying agents. The aim of this review is to explore the current research related to the various natural and synthetic dentin biomodifying agents and to explore some novel applications of these agents in restorative dentistry.

NISHMITHA N HEGDE

ANALYSIS OF APICALLY EXTRUDED DEBRIS USING DIFFERENT QUANTIFICATION METHODOLOGY - AN IN-VITRO STUDY '.

AIM: The aim of this study is to compare the amount of apically extruded debris after preparation of root canals using rotary system with variable file design. OBJECTIVES OF THE STUDY: To quantify the amount of apically extruded debris using different rotary system. Study design: Twenty-four extracted human mandibular premolar teeth were randomly assigned to 3 groups,(n=8). The teeth were instrumented according to the mechanical NiTi system until the working length, with Off-centered cross-section files, Variable Cross Section file and off-centered, rectangular cross section rotary instruments respectively. The debris produced was collected in the Eppendorf tubes placed inside the glass vials using the Myers and Montgomery method(1995). The liquid inside the tubes were further analyses by two methodology i.e lyophilization and incubation ,the remaining debris was calculated for each group and compared. Result: Within the limitations of this study, it can be concluded that all rotary instruments tested produced apically extruded debris. Variable Cross Section file showed a descriptive increase in debris extrusion , Off-centered cross-section files showed a comparatively less amount of apically extruded debris.

SHRUTAM DWIVEDI

Aim- The aim of this article is to establish awareness amongst the new budding dentists and current dental practitioners on the newly introduced material such as Bioclear which is a metamorphose in the dental industry offering more affordable options with superior results which also offers the latest, most progressive products and techniques evolving from the traditional preparations and matrixing systems for anterior and posterior composites and some newly introduced aesthetically pleasing materials. Methodology- An electronic search was conducted in the pubmed and google scholar databases. The MESH terms were "aesthetics", "bioclear", "cavity", "dental caries", "newer advancements in aesthetic dentistry", "strength". The database search was limited to the articles published from 2018-till date. Results- A total of 165 articles were retrieved through electronic databases. After evaluating the title, abstract and full text of these articles only 18 were selected for the this presentation. The articles which were excluded were because of lack of clinical cases to support the article and the articles which were included were based upon inclusion of practical cases which were clinically proven and were followed up on a regular interval of time. Conclusion- Our article which is based on the bioclear concept concluded that this newer technique in aesthetic dentistry was proven to have superior and long lasting aesthetic restorations compared to the conventional composite restorations when followed up for a longer span of time.

NIVASKUMAR G A

SEAL TO HEAL

Perforation is an artificial communication between the root canal system and the supporting tissues of the tooth. Root perforations are common complications in endodontic treatment. Root perforations can occur pathologically as a result of resorption and caries or iatrogenically during root canal treatment. Furcal perforation is usually an undesired complication that can occur during preparation of endodontic access cavities or exploring canal orifice of multirooted teeth. Successful outcomes of perforation management influenced by various factors like early diagnosis, size, site, time and level of perforation. Despite an accurate diagnosis and immediate treatment planning, a suitable material is also a key element in successfully sealing artificial channels created. An ideal material for perforation repair should adhere to the root canal wall while maintaining appropriate sealing and be easy to handle as well as biocompatible or bioactive. In addition, the material should be dimensionally stable, insoluble in tissue fluids, nonresorbable, and radiopaque This report presents successful management of two cases of iatrogenic perforation treated and sealed with bioceramic repair material

NIHAR SHETTY

HEBP AS AN IRRIGANT IN DISINFECTING ROOT CANAL SYSTEMS –A SYSTEMATIC REVIEW

Aim: To evaluate the efficacy of HEBP as an irrigant in the disinfection of the root canal system Materials and Methods: Inclusion criteria, all studies on extracted human teeth using ozonated water, were considered for the study .Exclusion Criteria, Any ex-vivo, or studies on animal dentition, studies which were published in languages other than English were excluded from the study.The search was carried out on electronic databases PubMed and Google Scholar, ScienceDirect within the last 15 years.The systematic review was conducted according to PRISMA guidelines and methodological studies was assessed through the Cochrane risk of bias tools. The assessment of quality of the studies were performed under the following: 1) size of sample, 2) Control group, 3) Standardization of procedure, 4)statistical analysis performed,5)Risk of bias Results:There were a total of 141 study results, following which removal of duplicates and full text analysis 126 were excluded. A total of 15 studies were included for the systematic review.The results in the systematic review showed HEBP was not better than sodium hypochlorite or EDTA alone however when used with sodium hypochlorite produced efficient results Discussion: It could be concluded that HEBP alone is not a better disinfecting irrigants than sodium hypochlorite and EDTA in the disinfection of the root canal system, however it had almost comparable level of disinfection.

PRERNA GAUTAM

Traumatic injuries to the anterior teeth are a most common form of dental trauma. It is more common in males, affecting (80% central incisors and 16% lateral incisors) because of the anterior position of the maxilla and teeth protrusion. Trauma to the anterior teeth resulting in fracture fragment requires immediate attention not only because of the damage caused to the dentition but also due to the psychological impact it has on the patient.The treatment involves simple to complex restorative intervention depending on the severity of the fracture and its extent. Tooth fragment reattachment offers a conservative, esthetic, and cost-effective restorative option that has been shown to be an acceptable alternative to the restoration of the fractured tooth with resin-based composite or full-coverage crown. Case- report- A systemically healthy 33-year-old male patient presented to the department of conservative dentistry and endodontics with a complaint of fractured left maxillary lateral incisor.The treatment protocol included single-sitting RCT followed by fibre post with raising of mucoperiosteal flap; for examining the extent of the fracture line. Lastly bonding of the fractured segment back in position with composite resin and bonding agent was done.The reattachment of a fractured crown using adhesive technique could be the first line of treatment if the fractured portion is intact, and the margins are preserved.This technique can be reinforced with the use of a post as it interlocks the two fragments and minimizes the stress on the reattached fragment with the primary goal remaining, the esthetic and functional rehabilitation.

DR UMMUL SAHIBA S N , DR RAHUL PAI

ROLE OF REGENERATIVE ENDODONTICS IN THE TREATMENT OF EXTERNAL ROOT RESORPTION :A LITERATURE REVIEW

External root resorption (ERR) is often a complication of traumatic injury to the teeth. Inflammatory root resorption (IRR) and replacement root resorption (RRR) are the two types that are frequently encountered. The outcome of ERR especially replacement resorption is unpredictable. Control of root canal infection, such as root canal therapy, can arrest IRR in some cases. However, if the IRR perforates into the canal, the perforation may not be repaired. Root canal therapy cannot arrest RR because it is not of infective origin. Treatments aimed at arresting ERR are unpredictable and often ineffective. Calcium hydroxide intracanal dressings, the preferred treatment for IRR, attenuate the progression but do not arrest resorption. Similarly, the management of RR after evidence of ankylosis usually includes decoronation and root submergence. However, both treatment modalities are less than ideal for tooth retention In the recent years, regenerative endodontics procedures have offered more dynamic clinical approach for the endodontic management of cases with uncertain prognosis. The treatments and outcomes of regenerative endodontics are so different from traditional endodontic therapy; therefore it has attracted enormous interest and attention in the field of endodontics in recent years. This approach has been described as a "paradigm shift" and considered the first treatment option for immature teeth with pulp necrosis Although studies based on its usage in the treatment of cases of external root resorption have been limited, it has shown to have good outcomes

SRAVYA

AN IN-VITRO EVALUATION OF EFFECTS OF CALCIUM HYDROXIDE BASED INTRACANAL MEDICAMENTS ONTHE APICAL SEALING OF CALCIUM SILICATE BASED BIOCERAMIC SEALER AND GUTTA PERCHA OBTURATED ROOT CANALS – A STEREOMICROSCOPE STUDY.

Aim: To evaluate the effect of four calcium hydroxide-based intracanal medicaments on the apical sealing ability of calcium silicate-based bioceramic sealer and gutta percha obturated root canals. Materials and Methods: 105 single rooted teeth are selected and decoronated to a length of 15mm from the apex. Working length was determined using #10 K-file and instrumented to Master apical file #40 with 0.02 tapered stainless steel K- file, and step back preparation to #60 K-file Samples were irrigated using saline and sodium hypochlorite and divided into seven groups, 2 control groups, and 5 experimental groups, containing 15 samples each. Group 1 served as positive control where roots were obturated without sealer. Group 2: Negative Control, where samples were obturated with guttapercha-ceraseal sealer. For the dye penetration test Group 2 is completely coated with nail varnish whereas Group 1 is not coated with nail varnish. The experimental groups are, Group 3: Roots were obturated without prior placement of intracanal medicament; Group 4: CH in saline; Group 5: CH in 2%CHX; Group 6:Metapex; and Group 7: CH in Propylene glycol. CH medicaments from groups 4,5,6 and 7 were removed using K-file #40 with copious irrigation using 5.25% sodium hypochlorite and 17% EDTA. Roots were then obturated with Guttapercha-Ceraseal root sealer. Groups 3,4,5,6 and 7 are coated with nail varnish except apical 2mm. All the samples are placed in India ink for one week and demineralized using 3% Nitric acid. Samples were viewed under 10X stereomicroscope to assess the extent of dye penetration. Data was analyzed using one- way ANOVA and post hoc Tukey test. Results: Group 2 showed the least apical leakage and group 1 showed the highest apical leakage. Among the experimental groups, Group 3 (non-medicated) showed minimum apical leakage. And among the medicated groups, Group 7 showed the least leakage, and Group 6 showed maximum microleakage.

NISHCHITA B L

COMPARATIVE EVALUATION OF ANTIMICROBIAL EFFICACY OF ROOT CANAL PREPARATION WITHTWO DIFFERENT ROTARY FILES-AN-INVITRO STUDY.

Aim: The aim of this study was to compare and evaluate antimicrobial efficacy of root canal preparation using Mtwo and BlueFlex S One. Materials and methods: Forty mandibular premolars extracted for orthodontic reasons were used.After pulpectomy, the anatomical crown was removed with carborundum disc at the level of cementoenamel junction, The roots were than sterilized in an autoclave for 15mins at 121°C,then the root canals were infected with E.faecalis suspension and Forty root canals were inoculated with 10ìL of broth culture and stored in a glass test tubes and incubated for 37°C for 24hrs. Thereafter the teeth were divided into 4 Groups and all the samples were prepared using the following instruments: Group 1 (Mtwo rotary files), Group 2 (BlueFlex S One rotary files), Group 3 (Saline irrigation with no instrumentation), Group 4 (No treatment at all). Two samples were collected from each tooth one before shaping (S1) and one after chemomechanical preparation (S2). Before and after instrumentation, paper point samples were taken from the root canals and were transferred to physiological saline for culturing. Colony forming units (CFU) were counted after 24 hours incubation on blood agar culture medium. Results were analyzed using Kruskal Wallis and Mann-Whitney U test. Results: The reduction in bacterial colony count were significantly different among the four groups. The reduction in bacterial colony count was significantly greater with Mtwo file system compared to BlueFlex S One file system.

AKSHAY KUMAR PAI U

SURVIVABILITY OF ENDODONTICALLY TREATED TEETH WITH CROWN AND VENEERS- A SYSTEMATIC REVIEW.

Introduction: Preservation of tooth structure is an important factor in an endodontically treated tooth, as the residual tooth structure may influence the fracture resistance and longevity of the tooth structure.1 Many studies have reported the success of various coronal restorations on survivability of the tooth structure. The anterior tooth as the front most and esthetically concerned have a variety of treatment options such as veneers and crowns.2 Aim: This study aims to assess the survivability of endodontically treated anterior teeth with crowns and veneers. Materials and method: Articles were selected through systemic search involving databases like pubmed, google scholar, scopus, specific journals (hand search). Articles published in English language are selected. The search strategy is based on the keywords: veneers, endodontically treated, anterior teeth, crown. Results: Study in progress Conclusion: Study in progress Keywords: Veneers, Endodontically treated teeth, Crown.

AAKANSHA PURI

BEAUTY IS POWER- A SMILE IS ITS SWORD!!

Esthetic dentistry is an inter-relationship between the 'art' and 'science' of dentistry. The esthetic restoration of anterior teeth constitutes one of the greatest challenges in restorative dentistry.Veneers are a becoming an increasingly popular treatment modality for re-establishing the unaesthetic teeth. Hence they are used as a solution to esthetic problems, involving morphologic modifications as in relation to tooth color, shape, contour, size, volume, and positioning. Following is a case report of a 25 year old female patient reported to Yenepoya Dental College, with the chief complaint of spacing between the upper anterior teeth as her main esthetic concern. Thorough clinical examination revealed mid-line diastema, gingival zenith discrepancy, mild distolabial rotation of right upper central incisor and papilla penetrating upper labial frenum. Treatment plan included frenectomy to eliminate the aberrant frenum, gingivoplasty for correction of gingival zenith following which all ceramic pressable Lithium Disilicate veneers were placed for space closure in the maxillary anterior teeth resulting in an esthetically pleasing smile design. Desired aesthetics and functional outcome was achieved. Follow up of 1 month was done and the patient was satisfied with the treatment.

SYED ISHAQ S

EVALUATION OF PH AND DIMENSIONAL STABILITY OF MINERAL TRIOXIDE AGGREGATE AND BIODENTINE WITH AND WITHOUT TRIPLE ANTIBIOTIC MEDICAMENT-AN INVITRO STUDY

Aim: To evaluate the pH and dimensional stability of Mineral Trioxide Aggregate and Biodentine with and without incorporation of triple antibiotic medicament (TAP). Materials and methods: A total of 80 cylindrical discs of dimensions 6mm X 3mm will be prepared by mixing the components to putty consistency. Half of the specimens will be subjected to pH measurement (n=40) and another half to test dimensional stability(n=40). For each test, specimens will be divided into four groups(n=10) as follows: Group 1: MTA Group 2: MTA + TAP (1:1) Group 3: Biodentine Group 4: Biodentine + TAP (1:1) For evaluation of pH: Specimens of each group will be immersed in containers with 10 ml of deionized water for about 1min and initial pH is recorded immediately[T0], subsequent readings after 7th day will be recorded[T1] using a digital pH metre. For evaluation of dimensional stability: Specimens of each group wrapped in a water moistened gauze, and placed in a 370C incubator. After 24 hrs their lengths will be measured using a digital caliper with a resolution of 0.01mm[T0] and stored in distilled water at 370C. After 30 days their lengths will be measured again[T1] and the change in the length divided by original length will give our measure of dimensional stability. Results & Conclusion: Yet to be evaluated.

VISHNU PRIYA

INTRODUCTION: This systematic review and meta-analysis study aimed to review the root canal centering ability and canal transportation of reciprocating nickel titanium file systems.
METHODOLOGY : Articles were selected for inclusion in this review if they fulfilled all of the following criteria: study of original data, with statistical analysis ,comparing centering ability and canal transportation of different reciprocating files ,studies involving pre- & post- operative images of cross section at three different levels. The electronic search was undertaken in PUBMED index based journals , google scholar database, and manual searches, including journals, reference lists, and other reviews.
RESULTS : Meta-Analysis was performed using the R-software and it was determined that reciprocating file systems had lower canal transportation and better canal centering ability than rotary file systems.
CONCLUSION: This study concluded that reciprocating file systems showed better canal centring ability and lesser canal transportation. However, all factors influencing these parameters should be considered prior to the file selection in clinical conditions.

MADHURIMA GOSWAMI

AIM -The purpose of this in vitro study was to evaluate and compare the apical microleakage with four different retrograde filling materials at varying condensation pressures using a glucose penetration system. METHODOLOGY-MATERIALS AND METHODS: 152 single rooted teeth were selected for the study. All the canals were prepared in a crown down technique up to size # 30-6% taper with rotary instruments which were prefitted with 30-6% gutta-percha cones. 3mm of the root ends were resected and 3mm of root end cavities were prepared with retro preparation tips , 3mm short of resected apex. The samples were divided into four main groups and root end fillings were done by the following materials. 1) Group 1 (Pro Root MTA) with three condensation pressures of 35± 5g as Group 1 A, 255, ± 5g Group 1 B, 710±5g Group 1 C, 2) Group 2 (Ortho MTA) with three condensation pressures of 35± 5g as Group 2 A, 255, ± 5g Group 2 B, 710±5g Group 2 C , 3) Group 3 (Biodentine) with three condensation pressures of 35± 5g as Group 3 A, 255, ± 5g Group 3 B, 710±5g Group 3 C and 4) Group 4 (GC Gold Type II) with three condensation pressures of 35± 5g as Group 4 A, Group B 255, ± 5g Group 4 B, 710±5g Group 4 C .The microleakage evaluation was done using a glucose leakage model after a storage period of 7 days at 100% moisture for 48 hours. The leakage was quantified using a spectrophotometer. RESULTS- Data was

analysed using One –way ANOVA followed by Tukey's post hoc test was done to compare mean microleakage of different material (Pro Root MTA, Ortho MTA, Biodentine and GIC) at different condensation pressure (35+5 g, 255+5 g, 710+5 g). The study showed that as the condensation pressure increases, mean microleakage decreases. Least microleakage is observed in Biodentine followed by Ortho MTA, Pro Root MTA. Highest microleakage observed in GIC. The results were statistically significant at a p value <0.05. CONCLUSION -The study showed that as the condensation pressure increases, mean microleakage decreases. Least microleakage is observed in Biodentine followed by Ortho MTA, Pro Root MTA. Highest microleakage observed in GIC.

SREELEKSHMI V S ,DR.LAKSHMI MONIKA Y

THE EFFECT OF 17%EDTA -C AND 7% MALEIC ACID ON SMEAR LAYER REMOVAL AFTER POSTSPACE PREPARATION USING TWO DRILL SYSTEMS – AN IN-VITRO SCANNING ELECTRON MICROSCOPE STUDY"

Background and Objectives: Restoration of endodontically treated teeth with considerable loss of teeth requires a post to stabilize the tooth structure. During preparation of the postspace using Peeso reamers or Parapost drill systems, smear layer formed on the canal wall poses an impediment to proper bonding of fiber post. Chemical means of smear layer removal using chelating agents is one of the most commonly used protocols in clinical practice. Commonly employed chelators include EDTA, Citric acid, EDTA-C, Chitosan, Peracetic acid and Maleic acid. The objective of this study is to compare the efficacy of 17% EDTA-C and 7% Maleic acid on the smear layer removal after post space preparation using two different drill systems. Materials and Methodology: Forty single rooted, human mandibular premolars were used. Root canal treatment was done and instrumentation was carried out using MTwo rotary system up to 30/0.05 followed by obturation. After 5 days, crowns were sectioned at the CEJ to standardize root lengths to 12mm. Post space preparation was done using two drills. GROUP 1: PEESOREAMER (N=20) GROUP 2: PARAPOST DRILLS (N=20) The irrigation protocol used is SUBGROUP A OF BOTH GROUPS: 17 % EDTA-C (5 ml) for 1 min (n=20). SUBGROUP B OF BOTH THE GROUPS:7% Maleic acid (5ml) for 1 minute (n=20). The teeth were sectioned and observed under scanning electron microscope. The presence of debris and remaining open dentinal tubules were assessed. Results: 17% EDTA-C produced statistically significant difference than 7% Maleic acid. Also there is no statistically significant difference in the smear layer produced by the peeso reamer and parapost drill.

K.LAKSHMI NIKHITHA

ARTIFICIAL INTELLIGENCE IN ENDODONTICS

Artificial intelligence was first described by McCarthy in 1956 as "machines ability to perform cognitive functions as humans do such as perceiving, learning, reasoning, and solving problems". The evolution of AI has made a positive impact on healthcare field due to the need for accurate diagnosis and precise treatment procedures. The two main aspects of Artificial intelligence encompass machine learning and deep learning. Machine learning is the machine's ability to learn from algorithms in the data. Deep learning is complex part of machine learning that uses methods like artificial neural network (ANN), convolutional neural network (CNN), fuzzy logic etc for analyzing and identifying appropriate solutions. Artificial intelligence has the potential to revolutionize the field of medicine and dentistry as it empowers the clinician to handle multiple clinical problems. However, there are gaps and potential risks that add to the complexity of this system. While AI has been in use for implant dentistry, orthodontic procedures etc; it is only now that endodontists have opened up to this new technology. In this paper we will throw light on some of the current applications of AI system in various aspects of endodontics such as Periapical lesions, Vertical root fractures, working length determination and so on.

SHWETA RAVINDRA JAMBAGI

MAXILLARY MOLAR WITH EXTRA PALATAL ROOT INTRODUCTION

A thorough knowledge of tooth morphology, careful interpretation of angled X-rays, proper access preparation and a detailed exploration of the tooth are essential prerequisites for a successful treatment outcome. This case report is presented to illustrate and describe the endodontic treatment of maxillary first molar with an unusual morphological variation of palatal root. The palatal root had two root with two canals that had appeared. CASE DISCUSSION This case report presents an additional palatal root with additional canal in a 32 year old female patient with a history of severe pain in upper right maxillary molar. Diagnosis was made by radiograph by buccal object rule confirmed additional root. Endodontic treatment was initiated ,working length was determined and canals were cleaned and shaped in a crown down technique using neoendo-rotary file system and was obturated with single cone technique. CONCLUSION Anatomic variations in root canal morphology especially in molars, is a challenge for endodontic therapy. Endodontists should be aware of these variations making sure that they have not missed the second canal/root on the palatal side.

ISHANI SENGUPTA

A smile is the prettiest accessory one has. Unesthetic smiles tend to undermine an individual's confidence and their restoration can be a challenge for the clinician as well. This paper entails a case report where in a 20 year old male reported to the clinic with a chief complaint of spaces between his upper front teeth. As patient was unwilling for orthodontic treatment, space closure using a combination of direct and indirect methods with composite restoration and ceramic veneers, respectively was planned.

DISHA SHARMA, SANJANA AGARWAL

SAVING THE SANCOSANCT: THE MODIFIED DAHL CONCEPT

The Dahl Concept refers to the relative axial tooth movement that is observed when a localized appliance or localized restorations are placed in supra-occlusion and the occlusion re-establishes full arch contacts over a period of time. The Dahl appliance was described nearly 30 years ago. It is traditionally associated with the management of worn teeth, mainly for localised anterior wear, resulting from factors like bulimia and GERD, which can result in severe dental erosion and insufficient interocclusal space. This removable metal bite platform was used to create inter-occlusal space, in a localised part of the mouth, to facilitate the placement of restorations on worn anterior teeth. However, today the principle can also be successfully applied in a range of clinical situations, helping to preserve tooth tissue in the long term. Without the Dahl concept, the dentist would be required to reduce the occlusal height of the worn teeth further. This is not a favoured approach as it results in lack of axial height, leading to insufficient retention and resistance for conventional extra-coronal restorations. Ultimately, risking damage to the tooth pulp and leaving limited options for future restoration replacement. Although the Dahl appliance is initially a removable device, it has been subsequently modified and adapted into restorations that are locally fixed on affected worn teeth to eliminate poor patient compliance to the treatment. With advancements in adhesive dentistry, the use of adhesive restorations, like onlays and composite resin, as modified fixed Dahl appliances have gained popularity due to the conservative tooth preparation approach without compromising the bonding strength to tooth surfaces. This paper reviews the literature related to the Dahl concept and it's evolution along with its role in cases of Dental erosion.

PRATHIKSHA KARUNAKAR SHETTY

RESTORE, REHABILITATE AND RECONSTRUCT!

Patients with discoloured, malformed and maligned teeth seek dental treatment as this greatly influences one's personality and self-confidence. Various treatments ranging from micro/macro abrasion, bleaching, resin infiltration technique, direct/indirect veneers and crowns can be opted for such patients depending on the severity of the

lesion. Such malformed or maligned teeth should be ideally managed by orthodontic correction, but considering the time factor and esthetic demands of patient an alternate treatment option would be esthetic enhancement with angulation correction for better space distribution and reinforcement of the tooth Everstick posts are recently introduced e glass fiber posts with very good esthetics and modulus similar to natural tooth. Further, it can be bent to desired angulation unlike fiber posts and doesn't require any lab procedure and is quite economical. This paper focuses on effective esthetic and morpho functional management of anterior teeth with instant smile makeover which is gratifying to both patient and the treating doctor.

ABIJETH B PAPER

UNRAVELLING THE MYSTERY – CHALLENGES IN ABERRANT ROOT CANAL SYSTEM – A CASE SERIES"

Presence of extra roots and canals should be considered before the initiation of root canal treatment for the success of endodontic therapy. A mandibular or a maxillary second premolar with three separate canals is very rare and its prevalence has been reported to be around 0.1%. This case series explains non-surgical endodontic treatment of a second premolar with three separate mesiobuccal, distobuccal and lingual canal. Close attention to anatomic variations, thorough radiographic examinations along with evaluation of the pulp chamber, use of magnifying and optical devices has been recommended for the success of complicated root canal anatomy.

PAYEL MAZUMDAR PAPER

THE REVAMPED SMILE"- A CASE REPORT ON ESTHETIC MAKEOVER USING INDIRECT VENEERS.

Healthy, clean white teeth increase self-confidence and enhance personality. Teeth discoloration is a frequent dental finding associated with clinical and esthetic problems which differ in etiology, appearance, composition, location, and severity. Discoloration may be limited to a single tooth or several teeth in a single arch or it may be generalized and evident on all of the teeth. It is essential to recognize the cause and to manage the discoloration accordingly. Generally, dentists' intervention is essential for treating substantial tooth discoloration. In some cases, scaling and polishing the teeth will improve the situation; however, more extensive treatment often is needed to achieve a satisfying result. Treatment options include vital and non-vital bleaching, microabrasion, composite and porcelain veneers, and porcelain crowns. Sometimes these treatments are combined for a more successful outcome. Hence, this case report will highlight the different causes for teeth discoloration and the available variable modalities in removing and managing the discoloration.

NIVEDITHA.M

Irrigating solutions used for the elimination of micro-organisms during root canal preparation may affect the chemical and the physical properties of dentin thereby rendering the tooth more susceptible to fracture. Pashley D et al. suggested that an inverse relation exists between the dentin micro-hardness and density of the dentinal tubules. Reduced micro-hardness may lead to reduction in modulus of elasticity and flexural strength of dentin. Hence the determination of micro-hardness provides an arbitrary assessment of the change in any mineral content of dental hard tissues. Ethylenediaminetetraacetic acid (EDTA) is the usual final irrigant used in endodontics due its recognised ability to promote smear layer removal. However, EDTA is cytotoxic, promotes dentin microhardness reduction & dentinal ultrastructure modification. Glycolic acid (GA) belongs to the group of alpha hydroxyl acids that also includes citric acid, a common irrigant with recognised ability to remove the smear layer. GA is biodegradable, presents low pKa, low molecular weight and organic nature, being an alternative for performance on mineral surfaces as dental structures The aim of this study is to evaluate microhardness of the root dentin using glycolic acid as a final irrigant and to evaluate fine scale changes in the hardness in coronal, middle & apical third of the root dentin.

PRACHETH T V PAPER

ESTHETIC MANAGEMENT OF A PATIENT WITH ENAMEL HYPOPLASIA – A CASE REPORT

Enamel hypoplasia is an exclusive ectodermal disturbance, related to alterations in the organic enamel matrix which can cause white flecks, narrow horizontal bands, lines of pits, grooves & discoloration of the teeth varying from yellow to dark brown. Dental enamel defects have been associated with a broad spectrum of etiologies including genetic and epigenetic factors such as systemic, local and environmental factors. Management of enamel hypoplasia, not only includes aesthetic and functional rehabilitation of the patient, but also requires a positive rapport building with the patient due to psychosocial issues. The treatment plan is driven by patient demands, age, cost-affordability, severity of the disease and the presenting conditions. The present case reports elucidates step by step management of 16 year old female patient who presented with localised enamel hypoplasia with severely decayed anterior teeth, poor dental esthetics and oligodontia of the lower teeth. Restoration for patients with this condition should be oriented toward the functional and esthetic rehabilitation and the protection of the existing teeth.

DEEPA SINGH

AESTHETIC ENHANCEMENT WITH DIRECT & INDIRECT VENEERS: CASE REPORTS

AIM: Esthetic rehabilitation of anterior teeth with direct composite veneer & indirect lithium disilicate veneer. SUMMARY: With the introduction of adhesive systems, more conservative treatment options have emerged & one of the most minimally invasive techniques is the application of laminate veneers made of either ceramics or particulate filler composites. The direct composite veneering allows restoring the tooth in a natural way and preservation of sound tooth structure. Indirect ceramic veneers stand out with high biocompatibility, color stability and high abrasion stability. This paper presents two different clinical cases involving esthetic rehabilitation of anterior teeth using direct composite veneer and indirect veneer. In the first case, a 21 year old male patient reported to the department with a peg shaped maxillary right lateral incisor. The patient was informed about the treatment options. It was decided to perform restoration with composite resin in order to achieve aesthetic rehabilitation. After isolation, etching was done with 37% phosphoric acid for 15 seconds, rinsed and air dried followed by application of bonding agent and curing with LED light source for 20 seconds. Finally, restoration was completed using a nanohybrid composite resin in A2 shade. Finishing burs, polishing discs, and paste were used for finishing and polishing procedures. In the second case, diastema closure was done using indirect lithium disilicate veneers. CONCLUSION: Veneers is a minimally invasive option for the treatment of peg shaped lateral & diastema closure and helps to restore esthetics along with function.

VISHNUJA V R NAIR

SURGICAL AND NON-SURGICAL MANAGEMENT OF TEETH ASSOCIATED WITH A LARGE PERIAPICAL LESION- A CASE REPORT

Periapical lesions develop as sequelae to pulp disease. They often occur without any episode of acute pain and are discovered on routine radiographic examination. Studies have reported a success rate of up to 85% after endodontic treatment of teeth with periapical lesions. Long-term success of endodontic treatment is dependent on adequate and appropriate cleaning and shaping of the root canal along with proper and correct obturation of the entire prepared space. A large lesion, which is unable to heal non-surgically, heals well with surgical intervention and use of retrograde filling has been reported in literature This article aims to report an exceptional non-surgical and surgical treatment of maxillary central incisor with an extensive radiolucent lesion in a 19 year-old female and 23year old male patient respectively. Six and one year follow-ups showed significant changes, including bone

formation and periapical healing within the lesion. The patient was asymptomatic. After one year, complete radiographic and clinical healing of the periapical lesion was observe. Thus endodontic post-treatment disease might be treated surgically or non-surgically. One year radiographic follow-up exhibited significant changes in the healing of lesion.

SOKKAM MANASA

Biomechanical preparation of root canal is one of the main steps in achieving endodontic success. In the last decade, the use of Nickel-Titanium (NiTi) rotary instruments with different configurations have markedly improved the cleaning and shaping procedures of root canal preparations. Inspite of their advantages, greater dentinal contact with these files during root canal preparation results in momentary stress accumulation, that leads to craze line dentinal defects and microcracks in wall of the canal.The protaper next file system provides shaping advantages through the convergence of a variable tapered design on a given file innovative M-wire technology and a unique offset mass of rotation. In studies stereomicroscopy, SEM, CBCT, Micro-CT, digital substraction radiography and optical coherence tomography were used for evaluation of dentinal microcracks and vertical root fractures. Recently, ultra-high spatial resolution Nano-CT devices have become available as a result of continuous technological advancement in the development of CT system. Nano-CT system generally uses nano focal spot source have been employed to allow clear visualization Although various dentinal parameters have been evaluated by nano-CT to the best of our knowledge, there is no study assessing dentinal microcracks in nano-CT. Therefore, the aim of this study is comparative evaluation of conebeam computed tomography, stereomicroscopy and scanning electron microscopy, nano-CT imaging techniques using protaper next file system in detection of dentinal microcracks.

MIR KOUSAR AZAM

COMPARATIVE EVALUATION OF FOUR DIFFERENT INTRACANAL MEDICAMENTS ON THE PUSH-OUT BOND STRENGTH OF SELF-ADHESIVE RESIN CEMENT TO ROOT CANAL DENTIN – AN IN-VITRO STUDY

Aim: To evaluate the effect of Chlorhexidine gel with Calcium hydroxide, Double Antibiotic Paste, Metapex, and Ledermix on the Push-out bond strength of self-adhesive resin cement Rely-X to root canal dentin. Materials and Methods: Fifty decoronated mandibular premolar teeth were divided into four experimental and 1 control group with 10 samples in each group. The root canals were shaped with pro taper rotary instruments up to a size #40(F4). Each experimental group received an Intracanal medicament. Group 1: Chlorhexidine gel plus Calcium hydroxide, Group 2: Double Antibiotic Paste, Group 3: Metapex, Group 4: Ledermix, Group 5: Control group. After 4 weeks, the intracanal dressing was removed and a 10mm deep post space was made. The self-adhesive resin cement was applied directly into the post spaces. Size#1 Carbon posts were inserted into the post space. Each specimen was sectioned perpendicular to its long axis. A Push-out test was performed on each specimen with a 1mm diameter cylindrical plunger using an Instron-Universal Test Machine. After the test procedure, each specimen was visually examined under a Stereomicroscope. Results were analyzed using ANOVA and post hoc Tukey's test. Results: The highest Push-out bond strength was showed by Group2(Double Antibiotic Paste), followed by Group 1(Chlorhexidine gel plus Calcium hydroxide), Group 3(Metapex) and the least by Group 4(Ledermix). There was a statistically significant difference in Push-out bond strength values between the experimental groups.

RIZA FAROOQ

LIT THE LIGHT

Endodontic science is dedicated to offer comfort and safety by advancing its techniques. In an endeavor to offer greater comfort to patients undergoing endodontic treatment, innovative methods have been proposed to reduce postoperative pain and promote periapical healing while attaining disinfection of the root canal system. The main

goal in endodontics is the eradication of the microorganisms present in the whole root canal system. Conventional treatment methodologies have proved insufficient to bring endodontic pathogenic microorganisms below detection limit, this is due to the morphological complexity of the tooth. In addition to endodontic irrigants, adjunctive instruments, such as lasers have been investigated to address the risk of failure of endodontic therapy due to the complexity of the root canal system. Lasers have been used therapeutically, in direct irradiation of the root canals or adjunct to irrigants placed into the canals, in combination with a photosensitizer (antimicrobial photodynamic therapy) and in pain management (photobiomodulation) The use of laser photonic energy of appropriate delivered parameters can be proposed as useful adjunctive when considering optimal treatment modalities in orthograde endodontics. Additionally, a tendency of research towards pain modulation in this field is developing. In recent decades, interest in the use of diode laser (DL) to treat RCS has grown significantly, thanks to its affordability and broad spectrum of indications. Different studies have found that the energy released by DL in the root canal can exert a variety of effects, including photothermal disinfection and biostimulation of the periradicular bone tissue. Photobiomodulation therapy (PBMT) applied with Low-Level Laser (LLLT) has shown good results recently in accelerating wound healing and apical cicatrization.

POSTER PRESENTATIONS

DR.AASTHA DUREJA

TIP OF AN ICEBERG:LOOKING BEYOND A DISCOLOURED TOOTH! A CASE REPORT

They say "The eyes cannot see what the mind does not know" and this especially holds true for practitioners like us. Afterall, applying theoretical concepts to practice forms an integral part of 'Evidence Based Dentistry'. This case report presents a multistep treatment approach of an asymptomatic patient who wanted to restore his discolored tooth. After an array of radiographic investigation and a diagnosis of external root resorption, a series of treatments were performed employing newer materials and modalities that involved surgical intervention, advanced post and core techniques, unique restorative and prosthetic rehabilitation and finally non surgical periapical healing. This case report that was terminated with the tooth's aesthetic rehabilitation was indeed only a tip of an iceberg. It is thus so important to look beyond the obvious. Afterall, we know it is a success story, if our treatment has rendered both us and our patients with an equal satisfaction.

AYAN BHADRA RAY

PRORESOLVING MEDIATORS IN ENDODONTICS

Inflammation is necessary for tissue healing and pulp regeneration, following pulpitis or apical periodontitis (AP). The resolution of inflammation involves dilution of inflammatory cytokine gradients over time. This inflammation can lead to wound healing or tissue destruction, the balance of which is maintained by pro and anti-inflammatory mediators. Although inflammation and its resolution are a natural and protective response, uncontrolled inflammation can lead to excessive immune reaction, tissue damage and pulp necrosis. Root canal therapy is usually considered as the treatment of choice for carious teeth with inflamed pulp, however, this may have some limitations. Blocking the immune response completely with anti-inflammatory drugs or immunosuppressants has its side effects. Proresolving lipid mediators are specialized molecules (SPMs) involved in the active resolution of the inflammatory process. SPMs do not block the inflammatory process, but regulate inflammatory homeostasis, without predisposing the host to increased vulnerability to infections. They are derived from polyunsaturated fatty acids of arachidonic acids and omega 3 fatty acids and consist of lipoxins, resolvins(E and D-series), maresins and protectins. This poster depicts the potential of SPMs as an adjunct in the treatment of endodontic infection

APOORVA WALIA

HERBAL ENDODONTICS

Hippocrates, the father of medicine, counseled almost two millennia ago, "Let food be your medicine, and medicine be your nourishment." Phytomedicines have been employed in dentistry as an anti-inflammatory, antibacterial, analgesic, and sedative agents. Herbal or natural products have been used in dental and medical practice for hundreds of years and are becoming increasingly popular due to their strong antibacterial activity, biocompatibility, anti-inflammatory, and anti-oxidant characteristics. The primary goal of a root canal treatment is to remove germs and their byproducts from the pulp region. Cleaning and disinfecting of root canals, intracanal medicaments between appointments, sealer cement, and removal of obturation material are all examples of how medicinal plants are used in endodontics. With the rise of antibiotic resistance, there is a great deal of interest in creating new antimicrobial classes for infection control. Alkaloids, coumarins, saponins, and flavonoids are examples of aromatic chemicals produced by plants that have been researched for their therapeutic potential. To prevent the potential side effects of standard chemical agents, plants and their extracts can be used as an irrigant and intracanal medicament in endodontics. The purpose of this poster is to provide a thorough evaluation of several herbal endodontic medicaments used in the treatment of a root canal system.

SHREYA GHOSH

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SAYOOJYA M

RESIN INFILTRATION TECHNIQUES-

The early detection of caries and individual risk assessment would help a lot in preserving the tooth structure and avoid unnecessary trauma to the dental tissues. When indicated, minimal invasive dentistry such as resin infiltration technique seems to provide a good solution in dealing with early enamel lesions . This technique can be used in combination with other enamel remineralizing agents like fluoride gels, fluoride varnishes etc. minimally invasive resin infiltration technique seems to be effective, less aggressive and more time saving for correction of white spot lesion .

SRISHTI GROVER

ETIDRONIC ACID

From Bone to Tooth The root canal of infected teeth is usually polymicrobial, existing as a biofilm. The ideal outcome of an endodontic treatment should target the elimination of microorganisms and their by products which are present within the root canal system. Successful root canal treatment is dependent upon the quality of biomechanical preparation, irrigation, disinfection, and obturation. Dentin removal contributes to smear layer formation covering the entire root canal wall. Irrigation of the of root canals is imperative for debridement of infected root canals to remove necrotic tissue remnants, microorganisms, and smear layer, created during mechanical canal instrumentation. Conventional disinfecting agents do not have the capacity to remove the smear layer from the dentin walls. Therefore, final irrigation is essential to remove it, preferably with a substance that has strong antimicrobial activity to aid in the disinfection of the root canal. 17% EDTA is the most commonly used final irrigant in endodontics. However, the agent lacks antimicrobial activity, especially against E faecalis and known to weaken the dentin and affect its mechanical integrity. Etidronic acid (HEBP) is a biocompatible chelating agent used in combination with sodium hypochlorite without any interaction designated as 'continous chelation'. The first approved clinical use (1977) was for treatment of Paget's disease. Bisphosphonates have the clinical indication of therapeutics for "bone metabolic disorders", in which Paget's disease, osteoporosis, and some osteolytic tumors are included. Due to its ability to prevent the formation of smear layer and also its minimal effect on the physical properties of dentin, HEBP has been considered as a promising irrigant in the field of endodontics.

DR.UJJVALA VINAY PYATI

GUIDED ENDODONTICS: A NOVEL APPROCH FOR COMPLEX CASE SOLUTIONS

Guided endodontics is a minimally invasive approach which respects health, function and esthetics of oral tissues with minimal hard tissue loss. Cone beam computed tomography can be used in difficult cases in which conventional radiographs do not provide sufficient information on the morphology of the tooth and its surroundings. This 3D information can be merged with the surface information of the teeth acquired with an intraoral scanner in order to design and 3D print a guide for treatment. Endodontic procedures reduce tooth stiffness and the loss of marginal ridge integrity is the greatest contributor to the loss of tooth strength. Pre-clinical studies have reported a high accuracy of the procedure when comparing the drilled path to the planned treatment without being influenced by the operator's experience. Additionally, the use of a guide for treatment may reduce chair time. Pulp canal obliteration (PCO) is an important risk factor for endodontic failure, since the location of calcified canals is challenging, even for specialists. Excessive wear, deviations from the original root canal path and root perforations are examples of errors that may result in failure of the treatment planned. The concept of guided endodontics has been reported, in which computer-designed guides are used for access cavity preparation and endodontic surgery. This novel concept could help clinicians during treatments, it may avoid unnecessary removal of tissue, avoiding complications and therefore, improving the prognosis of treatment.

DR RIYA GUPTA

DYNAMIC NAVIGATION: SCAVENGER FOR CALCIFIED CANALS

Root canal calcification is associated with dental trauma, caries and restorations, vital pulp therapy, and physiologic changes in elderly patients. Locating calcified canals is difficult and associated with procedural errors including perforation, canal geometry alteration and loss of dental hard tissue. Magnification and illumination with a dental operating microscope (DOM), ultrasonic tips, long-shank drills, and cone beam computed tomography (CBCT) aid in treating calcified canals. Even with these technologies, excessive dentin removal occurs. Guided endodontics is a new approach that uses a printed template to guide a dental bur towards the root canal resulting in a conservative access cavity preparation. Requirements include intra-oral scan acquisition and template fabrication. Dynamic navigation uses a computer to guide bur in real-time based on information gathered from a CBCT image. Motion tracking enables the system by following the position of both the patient and dental handpiece throughout the procedure. The ideal bur position is planned virtually by the surgeon using the CBCT dataset uploaded into the planning software. Sensors attached to the handpiece and the patient's head or teeth transfer 3D spatial information to a stereo-tracker. Dynamically navigated access preparations lead to significantly less mean substance loss with optimal and efficient precision in locating calcified root canals in comparison with freehand access preparations. There is potential for this technology to be used in endodontics for accessing teeth with pulp canal obliteration.

BAIDA POOJA

PHOTOACOUSTIC ENDODONTICS USING THE NOVEL SWEEPS

A new SWEEPS (Shock Wave Enhanced Emission Photoacoustic Streaming) modality for Er:YAG laser is developed especially to improve the cleaning and disinfecting efficacy of laser-assisted endodontic procedures. Typically, shock waves are not emitted during laser-assisted irrigation of spatially confined root canals. By using the new SWEEPS modality, an acceleration of the collapse of the laser-induced bubbles is achieved, leading to the emission of shock waves also into narrow root canals. The emitted primary shock waves that reach the smear layer at super-sonic speeds and the shear flows created by the fast collapse of secondary bubbles near the canal walls enhance the cleaning and disinfecting efficacy of laser induced irrigation. With its precise delivery of shock waves into cleaning fluids and the resulting enhanced fluid dynamics, SWEEPS method greatly improves the efficacy of removing debris from root canal system.

RAVINA BISHNOI

MASKING THE UNMASKED-DARK TRIANGLE

Currently, beauty and physical appearance is of a major concern for many people, along with the greater demands of aesthetics in the field of dentistry. The Black triangle can cause major complaints by the patients such as: aesthetic problems, phonetic problems, food impaction, oral hygiene maintenance problems. The etiology of black triangle is multi factorial, reduced alveolar bone height associated with interproximal contact, length of embrasure area, root angulation, triangular crown, aging, and midline diastema. Non-surgical treatments include ceramic veneer or crown, addition of composites for interdental papilla formation, apical bracket installation and use of gingival prosthesis. Thus, this poster reviews the role of BIOCLEAR MATRIX – A new wave as a conservative approach to treat black triangle or we can say dreaded triangle. Bioclear matrix is a "snow plow technique" (injection moulding technique) not a bonding technique.

KRISH CHOPRA

The advent of technology has resulted in a paradigm shift in dentistry, particularly in the field of endodontics. The lack of dexterity as well as the incidence of reported iatrogenic errors and inconveniences have played a pivotal role in the introduction of the novel concept of guided procedures. While it is still being understood, it has paved a way to effectively encounter and manage challenging situations and thus has broadened the horizons in terms of treatment predictability and outcome measures. Recent advances in digital technology and their application in dentistry have resulted in the emergence of tools that may be used to improve teaching and management of various treatment procedures Currently it has broadly been classified as static and dynamic systems. The incorporation of software's and its complicated virtual implications has perhaps added to its lack of understanding by various clinicians. Further lack of elaborate studies describing what these procedures entail has added to their dilemma. With its initial experimentation pertaining to implant dentistry to current applications in the field of endodontics, guided procedures have come a long way. It has found its use in cases pertaining to the management of calcified canals, endodontic surgeries so on and so forth. With this, the aim of the poster is to elaborate and describe the different methods, potential applications, and state the advantages and limitations of guided procedures in endodontics

SHIVANI SREENATH

ANTIMICROBIAL PHOTODYNAMIC THERAPY – "A NEW THERAPEUTIC OPTION TO COMBAT INFECTIONS"

With the increasing resistance towards commonly used antibiotics, there is a pressing need for antimicrobial approaches capable of efficiently inactivating pathogens without the risk of inducing resistance. Antimicrobial photodynamic therapy (aPDT) is an alternative approach based on the combination of a non- toxic photosensitizer and appropriate wavelength visible light which in the presence of oxygen is activated to produce reactive oxygen species. These ROS induce a series of photochemical and biological events that cause irreversible damage leading to the death of the pathogens unselectively via an oxidative burst. Many light absorbing dyes have been mentioned as potential photosensitizer for aPDT and different wavelengths have been tested. However, there is no consensus on a standard protocol yet. Antimicrobial photodynamic therapy has a wide therapeutic window and its applications include periodontal therapy, periimplantitis, oral cancer, bacterial and fungal infections. Recently, antimicrobial photodynamic therapy has been suggested as a promising effective adjunct to standard antimicrobial agent for root canal disinfection and elimination of microbial biofilms. Although positive results has been demonstrated invitro, there are fewer in- vivo investigations; hence more in-vivo studies are needed on use of aPDT in root canal disinfection.

JEWEL JOSE

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AVINASH HEGDE

THE SEARCH FOR BEAUTY… PROPORTION'S OR PERCENTAGES..?

AIM & OBJECTIVES: To evaluate the existence & suitability of Golden Proportion, Recuring Esthetic Dental Proportion & Golden Percentage, between the widths of maxillary anterior teeth in individuals with natural dentition to evaluate the smile design of selected Karnataka population in order to design a template for Direct Aesthetic Restoration with the aid of Digital Photography and Computer Analysis. MATERIALS & METHODOLOGY: Standardized frontal images of 50 dental students from Karnataka, out of which 18 were Males & 32 were Females, were captured by a Digital Single Lens Reflex camera. Each maxillary anterior tooth and their inter-canine width were digitally measured using Adobe Photoshop CS6 image processing software. Once the measurements were recorded, the three smile theories were applied and the data was analyzed statistically. RESULTS: The Golden Proportion was found to exist only in 8% of the students involved in the study, the value of RED percentage was not constant as one moved distally to the canine, this proportion gradually increased. Golden percentage was found to be more constant, with the mean measurement of Central Incisors claiming 23%, Lateral Incisors 15% & Canines to be 12%. CONCLUSION: None of the 3 theories were ideal to record the smile design in the natural dentition. However Golden percentage can be applied if percentages are adjusted considering the ethnicity of the population, with potential possibility of clinicians using the golden percentage and its modification according to the population of certain demographic locations as a reference for Direct Esthetic Restorations.

ISHAAN ADHAULIA

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AMRITA S

CONCILIATING CARIES WITH A COMPANION"

Dental caries is a multifactorial disease that occurs because of the ecological imbalance between the inorganic components of the hard dental tissues and biofilms. A newly derived intervention oriented method, probiotic therapy (i.e., the use of desired and harmless microorganisms) has been gaining ground for the past few years. WHO defines probiotics as "live microorganisms when administered in adequate amounts, confer a health benefit on the host". Gibson et al defined Prebiotics as "a nondigestible food ingredient that beneficially affects the host by selectively stimulating the growth and/or activity of one or a limited number of bacteria in the colon, and thus improves host health". Synbiotics are derived by combining prebiotics and probiotics to overcome the possible survival difficulties for probiotics.Various mechanisms have been proposed to explain how probiotics work. Microbes secrete numerous chemicals such as hydrogen peroxide, bacteriocins, organic acids, and others, which have definitive bactericidal properties. They act at the mucosal sites of adhesion by competitive inhibition and thus prevent colonization of pathogenic microorganisms. They exert changes in pH by altering the redox potential, which, in turn, affects the capacity of the microorganisms to thrive in the oral environment. Probiotics also trigger nonspecific immunity in individuals and alter their immune mechanisms (both cellular and humoral). Prebiotics are mostly dietary fibers that are nondigestible. They aid in the selective stimulation of the growth and/or activity of potentially beneficial microorganisms thus producing favourable effects upon host health. These prebiotics are mainly urea and arginine. Another strategy of synbiotics evolving in the past few years is incorporating probiotics-specific prebiotics known for their ability to maintain the oral environment's pH at high levels when a cariogenic challenge occurs. In conclusion, the use of probiotics for oral health is gaining momentum. There is increasing evidence that the use of existing probiotic strains can deliver oral health benefits. Further work will be needed to fully optimise and quantify the extent of this benefit. In parallel, the potential of prebiotics to maintain and enhance the benefits provided by the resident oral microbiota will be investigated. However, whether considering probiotics, prebiotics or synbiotics it will be essential to develop an understanding of the broad ecological changes induced in the mouth by their ingestion and the long-term consequences of their use on oral health and disease.

VANI GUPTA

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GHANEESHA PRABHU MOYE, NIKITA LAXMI SHOBHAKUMAR

NANOROBOTS

It's challenging to foresee the future of any significant technology. The science of creating machines or robots at or very near the minuscule scale of a nanometre is known as nanorobotics. More specifically, the term "nanorobotics" refers to the fictitious engineering field of nanotechnology that focuses on designing and creating nanorobots, which are small, molecularly- or nanoscale-based systems which ranges between 0.1-10 µm. There are innumerable examples of these machines in nature, and it is possible to create more by mimicking nature. The first practical use of these devices was in medicine to locate and eliminate cancer cells, but the most intriguing uses may be in dentistry. A new field termed nano dentistry is emerging as a result of the increased interest in the potential dental uses of nanotechnology. Local anaesthesia, dentition renaturalization, permanent hypersensitivity treatment, complete orthodontic realignment in a single office visit, covalently bonded diamondized enamel, and continuous oral health maintenance with the aid of mechanical dentifrobots that kill caries-causing bacteria and even fix blemishes on the teeth where decay has already set in are some of the new treatment options available in dentistry (Rybachuk et al., 2009). Dental nanorobots may have specialized motility mechanisms that allow them to enter human tissue precisely, acquire energy, and perceive and control their environment in real time. The tasks of the nanorobot could be managed by an onboard nano computer that executes pre-programmed instructions in response to local sensor stimuli. By deploying a computer to control these tiny workers in their tasks, dental nanorobots might be built to eradicate caries-causing bacteria or to mend tooth flaws where decay has already begun. The present poster aims to provide an early glimpse on the impact and the future implications of nanorobotics in dentistry.

TANYA UBEROI

There have been various advancements in regenerative endodontic procedures (REPs) since they are biological procedures that help us allow the cessation of disease, leading to healing of apical periodontitis healing, root development continuation, the thickening of the root canal walls, and also the apical closure of roots of immature, permanent teeth. Favourable outcomes for REPs primarily depends on the interaction between the three critical elements of tissue engineering: stem cells, scaffolds, and growth factors. Scaffolds are essential elements in pulpal regeneration and most of the currently used scaffolds in regenerative endodontic procedures (REPs) are unsuitable for chairside clinical use. An ideal scaffold should possess several physical and biological properties, such as dimensional stability, sufficient porosity with adequate particle size, and biodegradability at a rate similar to that of new tissue formation. Hyaluronic acid (HA)-based hydrogel is a natural polymer present in several soft connective tissues of the human body and its scaffolds have been evaluated in a few investigations regarding dental pulp regeneration. Thus, they have shown promising capabilities in promoting the mineralization and differentiation of

dental pulp stem cells. Most commercially available HA dermal fillers share similar features. They can be easily injected as scaffolds into root canals in REPs. HA-based hydrogel has been demonstrated to have promising potential in promoting cell viability, mineralization, and differentiation into odontoblastic-like cells.

VYSHAK K MOHAN

The advent of technology has resulted in a paradigm shift in dentistry, particularly in the field of endodontics. The lack of dexterity and the incidence of reported iatrogenic errors and inconveniences have played a pivotal role in the introduction of the novel concept of guided procedures. While it is still being understood, it has paved a way to effectively encounter and manage challenging situations and thus has broadened the horizons in terms of treatment predictability and outcome measures. Recent advances in digital technology and their application to dentistry have resulted in the emergence of tools that may be used to improve teaching and manage of various treatment procedures Currently it has broadly been classified as static and dynamic systems. The incorporation of software's and its complicated virtual implications has perhaps added to its lack of understanding by various clinicians. Further lack of elaborate studies describing what these procedures entail have added to their dilemma. With its initial experimentation pertaining to implant dentistry to current applications in the field of endodontics, guided procedures have come a long way. It has found its use in cases pertaining to the management of calcified canals, endodontic surgeries so on and so forth. With this, the aim of the poster is to elaborate and describe the different methods, potential applications, and state the advantages and limitations of guided procedures in endodontics.

MADHUSHREE G SARAF

NANOPARTICLES:THE FUTURE OF DENTISTRY

The application of nanoparticle materials is rapidly evolving in endodontics and dentistry on the whole. As per the European commission's recommendation "nanoparticle" is defined as a natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50% or more of particles in the number size distribution, one or more external dimensions is in the range of 1-100nm. These biomaterials have been used in treatment of oral diseases, in eradication of smear layer and biofilms, have been incorporated in various dental materials for their antimicrobial effects. Antimicrobial nanoparticles offer numerous advantages like large surface area to volume ratio, ultra small sizes and excellent chemical and physical properties. Various nanoparticles like Graphene, Silver nanoparticles, Chitosan, Hydroxyapatite nanoparticles, Iron compound, Zirconia, Poly(lactic) co-glycolic acid, Bioactive glass, mesoporous Calcium silicate, Titanium dioxide nanoparticles, Magnesium, Calcium oxide and Copper oxide are being used. Nanoparticles show great results in various applications in endodontics like incorporation of nanoparticles in sealers, obturating materials, irrigation and intracanal medicament. The era of nano-endodontics is paving its way to be the bright future in dentistry as most of the challenges faced in endodontics are nano-sized. In this poster, we discuss the types of nanoparticles available for use in endodontics, their properties, general mechanism of action and its uses in endodontics

BOMMAREDDY PRAKYAREDDY

CRYOTHERAPY:A NEW PARADIGM OFTREATMENT IN ENDODONTICS.

Cryotherapy refers to decreasing the tissue temperature for therapeutic purposes. The term is derived from the Greek words "cryos" denoting "cold" and "therapeia" denoting "cure". The concept of cryotherapy actually does not imply cooling the target tissue but rather extracting heat from the tissue of higher temperature to the subject

of lower temperature. In the field of endodontics, cryotherapy has been reported to be used after periradicular surgeries and during root canal treatment to minimize postoperative pain and inflammation. Other implementation of cryotherapy in endodontics is deep cryotherapy of nickel-titanium (NiTi) endodontic files, which offered enhanced cyclic fatigue resistance, reducing potential file separation. More recently, cryotherapy was successfully tried as a useful adjunct for hemostasis in vital pulp cryotherapy in conjunction with bioceramic materials. Cryotherapy is a simple and economical supplementary method for minimizing postoperative pain in cases of apical periodontitis and for controlling pulpal hemorrhage during vital pulp therapy.Three basic physiological tissue effects of cryotherapy are vascular, neurologic, and tissue metabolism. In this poster we discuss the concept of cryotherapy, its mechanism, physiological effect on the periradicular tissues, and different applications of cryotherapy in endodontics.

NIDHISH K

GENTLEWAVE PROCEDURE:AN ALTERNATIVE TO STANDARD ENDODONTIC TREATMENT

The main aim of root canal treatment is to eliminate the infection and prevent re-infection of the root canal system. In necrotic teeth, microorganisms can colonize in anatomical complexities, such as isthmuses, ramifications and dentinal tubules. The instruments are unable to fully reach the anatomical complexities of the root canal system. For this reason, irrigation is the key to successful treatment. Conventional syringe irrigation is commonly used for irrigation of root canals. It has a rinsing effect, but does not guarantee that the irrigant will reach the working length and anatomical complexities. The GentleWave system (GW) (Sonendo, Laguna Hills, CA, USA) was introduced on the US market in 2014, for effective cleaning and disinfection of the root canal. GW creates a powerful, high speed shear force that dispenses irrigants into the root canal system, without having to place the tip of the handpiece into the canal orifice. Specifically, the implosion of microbubbles creates an acoustic field of broadband frequencies that travel through the fluid to reach the entire root canal system, thereby cleaning the soft tissues, and eliminating the bacteria within the root canals.

K.VISHNU PRASAD, DR.GANESH BHARATHI

BIOCERAMIC ROOT CANAL SEALERS:AN OVERVIEW

Postoperative pain (POP) after root canal filling (RCF) affects up to 40% of patients. The intensity and duration of POP vary according to multiple prognostic factors. The filling technique is considered among the most relevant, in which warm vertical and cold lateral compaction as well as single cone are most traditionally utilized with resin-based or zinc-oxide eugenol sealers. The intensity and duration of postoperative pain are subjective and can be affected by many factors. In particular, by the severity of preoperative pain according to the medical history of the present diagnosis, tooth type, age, gender, etc. The intraoperative factors are also various, such as physical properties of the endodontic instrument used for the initial treatment, features of the irrigation protocol such as chemical solutions and concentrations, microbiological stability and resistance, histopathological state of the tissues surrounding the tooth, etc. At the final stage of root canal treatment during the obturation step, the endodontic sealer locally and directly contacts with the altered periapical tissues through the apical foramen and additional lateral canals. Accordingly, the physical and chemical properties of the sealer, such as pH-level, consistency, etc., also affect the intensity of postoperative endodontic pain. The gutta-percha/bio ceramic sealer (BCS) filling technique has gained popularity among endodontists due to features that include biocompatibility (due to their similarity with biological hydroxyapatite) and bioactive stimulation of periapical healing. The setting time (30 min for working time), sealing ability, and antimicrobial properties are all key to the performance of endodontic sealers. Premixed injectable formulations, preloaded syringes, and mouldable putty forms are all available, facilitating ease of use. The aim of this poster is to give an overview on the role of Bioceramics as Root canal sealeant.

SURESH.S,THENMOZHI.R

PULP CAPPING-SAVIOUR OFTOOTH

In the era of biology-driven endodontics, vital pulp therapies are regaining popularity as a valid clinical option to postpone root-canal treatment. Dental pulp-capping agents are defined as those materials used as a protective layer to an exposed tooth pulp to allow the tissue to recover and maintain its normal function and vitality . Ideally, those materials should not only be inert, in the sense that they should not be toxic to the pulp cells, but they should be "bioactive" towards the tissues by stimulating migration, proliferation and osteogenic differentiation of the cells .The tenets of minimal-invasive dentistry have caused a paradigm shift in the treatment of deep caries and vital pulp therapies. In this way, from total caries-excavation techniques, we have moved onto partial caries-excavation to avoid pulp exposures. Something similar is happening in the treatment of reversible and irreversible pulpitis. Increasing evidence is showing that in the presence of strict aseptic conditions (rubber dam isolation) and with the aid of magnification, partial or full pulpotomy can serve as valid and less invasive alternatives to root-canal treatment.This might have many advantages, since root-canal treatment is a more technically demanding and time-consuming treatment than pulpotomy. Hence this poster give an overview of various recent pulp capping case selection criterias,materials and strategies used in vital pulp therapy.

PRIYA C

TOPIC: ELECTRONIC DEVICES USED IN WORKING LENGTH DETERMINATION

Successful root canal treatment depends upon thorough cleaning & shaping and three-dimensional fluid tight obturation within the confines of root canal. To achieve this objective the apical constriction must be detected accurately during canal preparation and precise control over working length during the procedure must be maintained. According to Glossary of Endodontic terms, working length is defined as the distance from a coronal reference point to the point at which canal preparation and obturation should terminate. Apical constriction has been proposed as the most appropriate apical limit for the endodontic working length. Overestimated working length can result in preparation beyond the apical isthmus, which can damage the peri-apical region and underestimated working length can lead to unsuccessful treatment. Hence, accurate assessment of root canal length is very essential. There are many methods to assess the working length of root canals including electronic method. Traditionally, the point of termination for endodontic instrumentation and obturation has been determined by taking radiographs. Introduction to Apex locators has served as an effective adjuvant to radiographs. An electronic apex locator is an electronic device used in endodontics to determine the position of the apical constriction and thus determine the length of the root canal space. The development of Electronic apex locators has helped make the assessment of working length more accurate and predictable. The apex locators have also been used to detect root canal perforations. Over the past few years, different versions of Electronic apex locators have been released. This poster emphasizes on the development, mode of action, generations, advantages, disadvantages and recent advances of these devices.

SWATHI R ACHARYA

NANOTECHNOLOGY IN CONSERVATIVE DENTISTRY AND ENDODONTICS

Nanotechnology deals with the physical, chemical, and biological properties of structures and their components at nanoscale dimensions. Nanotechnology is based on the concept of creating functional structures by controlling atoms and molecules on a one-by-one basis. Nanotechnology is based on the idea of creating functional structures by controlling atoms and molecules on a one-by-one basis. I What makes nano-particles interesting and bestows unique features upon them is the fact that their size is smaller than the critical lengths defining many physical

events.9 In general, nanotechnology is translated as "the science of the small." With this technology there can be more developments in the health sciences as well as in materials science, bio-technology, electronic and computer technology, aviation, and space exploration. The aim of this poster is to showcase different aspects of nanotechnology in Conservative Dentistry and Endodontics.

AISHWARYA & VAISHNAVI

WHITE SPOT LESION- RESIN INFILTRATION TECHNIQUE AS A SOLUTION

Minimal Invasive Dentistry is the new paradigm that is currently evolving and being followed in the recent years. Similarly, Caries Management in operative dentistry is changing its trends from G.V. Black's "Extension to prevention" to "Prevention to Extension". This helps to prevent meticulous removal of normal healthy tooth structure (enamel and dentin) and also avoids the unnecessary replacement of the same with artificial restorative material. White spot lesions are opacities that occur at the initial stage of dental caries development, by demineralization of enamel under the surface and cause esthetic problems. To avoid progression of disease, it was conventional to do restorations even for these initial lesions. Currently, many remineralisation materials and techniques are available to treat such white spot lesions which include prophylaxis with topical fluoride gels/ varnishes, fluoride iontophoresis, Chemicomechanical Caries Removal, application of CPP-ACP, fluoride varnish and so on. Resin infiltration technique is a novel technology that bridges the gap between prevention and restoration of carious lesions. It is described as a micro-invasive technology that fills, reinforces, and stabilizes demineralized enamel without sacrificing the healthy tooth structure. It has other benefits like it can be done in a single visit and there is no risk of postoperative sensitivity and pulpal inflammation. This poster will enumerate cases with white spot lesions treated by the resin infiltration technique and also emphasis the advantages and the importance of minimal invasive dentistry and Resin infiltration technique.

SOWNDARYA HAWALDAR

PHOTODYNAMIC THERAPY IN TOOTH BLEACHING- A review

Tooth color is an esthetic feature that the modern society hold with high regard. Therefore, the demand for both healthy and cosmetically attractive smile has increased rapidly in recent years. Tooth discoloration can be can be either intrinsic or extrinsic. There are various treatment modalities to treat tooth discolorations. Bleaching is the least invasive and cost effective method to remove the discolorations. In a recent study Photodynamic therapy(PDT) have proven to eliminate the main side effects of bleaching. PDT is also used in various medical fields such as cancer therapy, management of oral biofilms, secondary caries prevention, bactericides, food processing and agricultural applications. Photodynamic bleaching of teeth is examined in various studies by adding photosensitive components or colored pigments to peroxide bleaching agents, such as titanium dioxide photocatalyst, â-carotene, and rhodamine, using different kinds of light sources to enhance its bleaching effect by heating or activating peroxides. In-office KTP laser photodynamic bleaching have resulted in a clinically significant improvement in tooth shade in teeth with tetracycline discoloration. The mean maximal pulpal temperature rise was 3.7680C, and thus causing no pulpal insult. This technique has shown to be well tolerated by the patients, occasionally causing mild sensitivity with no significant changes in surface of enamel. When PDT was used alone without peroxides, there was significant change in color and the value of whiteness was significantly higher after bleaching. On SEM analysis there were no morphological changes seen in enamel. The surface roughness and surface microhardness was found similar to unbleached tooth post bleaching. Additionally, no color recovery was observed 1 month post-bleaching. It can be concluded that, Photodynamic therapy can provide a novel selective bleaching scheme for clinical use for tooth bleaching.

SHIVANI JADIMATH

Nowadays due to changes in the diet and consumption of highly acidic foods, erosion is a commonly encountered problem among the general population. Patients affected by moderate to severe dental erosion are particularly challenging because of complex occlusal reconstruction. Severe occlusal wear can result in dentinal hypersensitivity, dental pulp injury, occlusal instability, and alteration of aesthetics. Occlusal veneers have become a conservative alternative to restore the lost tooth structure, indicated for teeth with occlusal wear, avoiding the use of conventional restorations, such as full-coverage crowns. Among its characteristics is the recovery of the masticatory function with maximum preservation of the dental structure. It helps to re-establish the vertical dimension. There is strategic reduction of sound dental structure or no preparation in this approach. A particular characteristic of this type of restoration is the thickness of less than 1.0 mm. It can also be used in the treatment of attrition, chipped teeth and discoloured teeth. They provide good aesthetics as well. They can last for up to 7 to 15 years. There are two main types of materials used to fabricate a veneer: composite and dental porcelain. Although they have multiple advantages, they cannot be given in patients with parafunctional habits, unstable occlusion and poor oral hygiene. Cost is another issue with veneers. The process cannot be undone and hence careful diagnosis, case selection and treatment planning is required. Veneers cannot be repaired if they chip or crack. Patients may experience sensitivity. Rarely, the veneer may get dislodged. The success of this treatment depends on various variables such as proper maintenance of oral hygiene and skills of the dentist. They provide promising results when considering the aesthetic and functional criteria. Further investigations should be researched examining the survival and complications of occlusal veneers and management of eventual failures.

ANSHA ARAVIND

Nanobubble water technology is promising adjunct for enhancing the penetration and efficiency of intracanal medicament and irrigants into dentinal tubules by removal of smear layer without changing dentin microhardness. Improved disinfection of nanobubble is due to its property to increase wettability and decrease surface tension of liquid. Nanobubble has wide range of application for medical, fluid dynamics and chemical fields, recently nanobubble has been used in drug delivery by increasing drug's penetration capacity without inducing systemic toxicity. Nanobubble is produced by discharging pressurized gas into water in predetermined amount through Nano porous polypropylene film resulting in stable bubbles with high pressure. This poster intends to highlight the application of nanobubble enhanced antimicrobial agents in endodontics.

APARNA NAIR

CHARISMA OF ENDODONTIC MICROSURGERY

Endodontic microsurgery is an established strategy for the endodontic treatment of non-healing apical periodontitis. Its success rate largely improved with the use of microscopes, ultrasonic microtips for root-end cavity preparation, and biocompatible root-end filling materials. Endodontic microsurgery aims at the detersion, shaping, and tridimensional obturation of apical portion of root canal that cannot be treated through the access cavity, but flap surgery has to be performed and the apical lesion is exposed through a local osteotomy. Radicular resection is commonly done 3 mm at the apex and a retrograde preparation is then prepared of about 3 mm-long. After disinfection of the root canal, a retrograde filling material is compacted so as to fill the retro-prepared pulpal cavity and seal communications between coronal and apical dental portions against microorganism percolation. With the aim of preventing the outgrowth of bacteria and promote periapical tissue healing, the ideal root-end filling material must have biocompatibility, dimensional stability, and resistance to resorption. Despite the historical use of restorative materials as root retrograde obturation materials, bioceramics are now the gold standard material of choice. MTA, Biodentine and other biocompatible bioceramics have been seen to give fluid tight seal of root canals

and promote bone healing. In several studies it was concluded that endodontic microsurgery showed significantly better prognosis than traditional root-end surgery, with a 94% success rate to treat apical periodontitis. Though non-surgical endodontic treatment and retreatment is the preferred choice for teeth with residual infection, in some carefully selected cases, surgical endodontics can be considered. Through the evolution and acceptance of microsurgical techniques the success rates of apicectomy are in excess of 90%, firmly establishing this as an important treatment option in well selected cases.

DR. NIDHI PANDEY

NON-THERMAL ATMOSPHERIC PLASMA- AN ADVANCEMENT IN DENTISTRY.

The success of an endodontic treatment is dependent on the meticulous cleaning of the root canal system, the eradication of pathogenic microorganisms, and a three-dimensional filling of root canal space with an inert root canal filling material to attain a fluid tight seal and prevent the ingress of microorganisms. To overcome the limitations of adhesives in the root canal system, some attempts were recently made to develop dentin surface modification techniques both chemical and electrical methods were used to enhance the penetration and absorption of bonding agents. One such method is non thermal atmospheric plasma also known as cold plasma. Non thermal atmospheric plasma (NTAP) is an effective surface modification method that has recently gained importance. In this technique high-energy electrons, ionic particles, free radicals are degraded that interact with the surface of materials to modify the superficial layer of the exposed surface. NTAP can increase the surface energy as well as hydrophilic properties of the surface by removing the hydrocarbons and offering hydroxyl groups. This property plays a significant role in better penetration of adhesive. The surface treatment with plasma may chemically convert the organic materials on the dentin surface into volatile components which may lead to the opening of dentinal tubules used as a method to eliminate the organic debris from the dentinal tubules. In conclusion NTAP is a recent advancement which can serve various purposes such as: 1) Bond strength improvement. 2) Sterilization of surfaces. 3) Improved penetration capacity of the disinfectants in the dentinal tubules. 4)Oxidative lysis of microorganisms. All these properties will eventually lead to better and successful treatment outcomes.

SHANA SHIRIN

EVOLUTION OF SYRINGES

The syringe has become an indispensable instrument for many aspects of interventional medicine and everyday practice. The word 'syringe' is believed to be derived from Greek mythology. The chaste maiden Syrinx was pursued by the amorous god Pan to the edge of a river where nymphs disguised her as a hollow water reed. Pan chopped off seven reeds and sized them to create his fabled pipes, to remember her from their music. Early Greeks and Romans Syringes used to inject, aspirate and infuse are documented. John Milne's 'Surgical instruments in Greek and Roman times' published in 1907 described prototype syringes including Hero of Alexandria, Aulus Cornelius Celsus and Galen of Pergamon, These syringes were used to wash out body cavities or wounds as well as to aspirate purulent discharges or infuse medications. The Middle Ages Abulcasis, a renowned surgeon of the Muslim era in Cordoba, Spain, in about 1000 AD described syringes for the sinuses, ear, vagina and rectum, described as silver or ivory... with a long thin tube, like a probe, entirely hollow with the exception of the final part....The hollow part containing the piston is exactly of such dimensions to be closed by this, so that the liquid is sucked when you pull it up, and when you push it down it is emitted in a jet. Early South and North American Indian native healers developed syringes made from sharpened hollow bird bones attached to small animal bladders to clean ears, irrigate wounds or inject medicines. Subcutaneous lancet injections inserted through a small incision to block nerves became widely practiced in the 1800s. It is generally accepted that the modern syringe with a glass barrel and sharp needle evolved in the mid-1800s. It is probably pointless to conjecture as to who was the first to

be responsible; indeed, attribution should better go to the manufacturers rather than the users. At the start, the best syringes were made of glass with a protective metal casing. Dose estimates were either graduated on the syringe or on the piston rod. The proximal end was packed with oiled leather to prevent leakage. Steel needles were preferred, and a fine wire was pushed up through each needle and left in place after use. The syringe has evolved from a blunt-nosed metal instrument used particularly to aspirate and irrigate through glass reusable to present day plastic disposable syringes with fine sharp needles. The syringe is now used for a multitude of purposes. The future includes development of micro-needles to avoid pain from injection.

SUSMITA GHOSH

TITLE-WHAT'S IN STORE FOR 'OUT' STANDING TEETH?

Avulsion or exarticulation is a condition where a tooth is dislodged from its alveolar socket as a result of traumatic injuries. Ideally, an avulsed tooth is suggested to be immediately replanted in order to prevent further damage to the PDL cells from desiccation when people suffered from traumatic injuries. However, it is not always possible to perform immediate replantation due to several factors such as life-threatening traumatic injuries, complex injury to the alveolar socket, or lack of awareness about immediate replantation. However, it is crucial to preserve the viability of the tooth for the successful outcome of replantation. Therefore, an avulsed tooth is recommended to be immersed in a suitable storage media when immediate replantation cannot be conducted. The ideal storage media should have the ability to preserve the viability, mitogenicity, and clonogenic capacity of the PDL cells for the purpose of facilitating the healing of the replantated tooth, thereby improve the survival rate of the replantated tooth. Up to now, numerous storage mediums, such as tap water, saliva, saline solution, milk (natural or processed type), culture media, Hank's Balanced Salt Solution (HBSS), oral rehydration solution (ORS), and coconut water, have been extensively used in practice. However none of them fulfill all the requisites of an ideal storage medium, hence there is a constant ongoing search for a better storage media. In the recent past, a lot of storage media have been introduced. Hence, this review poster highlights the contemporary storage media available till date and emphasizes on the recent advances and their importance of the same in maintaining the viability of the tooth.

BANASHREE BHAGAWATI

METAVERSE IN DENTISTRY

For the best execution of the treatment plan for the patients, dental professionals ought to have artistic, discerning, and coordinated motor abilities in addition to their academic understanding. Over time, learning methods for both students & healthcare professionals have changed. Conventional pre-clinical training employed the use of cadavers, but due to various constraints it have become a major shortcoming. With the adaptation of technology in dentistry, pre-clinical training has now employed 'simulation'. It provides the opportunity for the students to develop psychomotor skills for procedures by practicing pre-clinical, standardized learning competencies before they actually engage in patient management. Clinical procedures such as guided surgeries, including micro-endodontics and complex endodontics, require precision. Along with CBCT and 3D imaging, immersive technologies like virtual reality and augmented reality are demonstrating tremendous promise for developing cutting-edge and spectacular interactive experiences for such procedures. Augmented reality is a type of technology in which an environment is enhanced through the process of superimposing computer-generated virtual content over real structure enhancing the sensory perception of reality. In contrast, virtual reality can be described as the combination of multiple technologies allowing users to interact with virtual entities in real time .Virtual reality uses a headset to place you in a computer-generated world that you can explore. Augmented reality, instead of transporting you to a virtual world, it takes digital images and layers them on the real world around you through the use of either a

clear visor or smart phone . This poster will showcase the use of lopping augmented reality technologies in preclinical training for students along with its application in treatment techniques such giving local anesthesia, access cavity preparations and other endodontic procedures.

HARSHINI P

SELF HEALING COMPOSITES (THE MAGIC POP-UPS)

Dental Composites used for restorations are susceptible to micro-cracking by thermal and mechanical stresses from strong occlusal forces which weakens the resin filler materials. The micro-cracks may propagate and lead to failure of the filler materials. The micro-cracks are difficult to detect and cannot be repaired in situ using current methods and materials or requires complete replacement of the resin filler material. The new solution to micro-cracking and other fractures of dental composites is Self-healing dental composites, which are biomimetic models of autonomic repair systems in living tissues that efficiently handle damage. Inspired by natural biological systems, these materials have self-healing capabilities into polymers and polymer composites. Self-healing composites have desired properties in material development. Autonomic self- healing composites have shown significant enhancement in extending the life of polymeric materials and also made to repair cracks in dental resins with use of the monomer-catalyst self-healing model.

MINATI JAIN

AN ECO-FRIENDLY ALTERNATIVE TO ENDODONTIC IRRIGANTS

AIM : This poster will review the existing literature and highlight the concepts on the different herbal irrigants in endodontics. INTRODUCTION: Achieving predictable long-term success of endodontic therapy is to eliminate the bacteria and their by-products from the pulp space, which can be achieved by hand or rotary instrumentation of root canal system. Though mechanical instrumentation can remove a large number of microbial flora from the root canal system, bacteria remaining in the intricacies of the canal due to complex root canal system anatomy can cause failure of endodontic therapy. Therefore, mechanical instrumentation of the root canal is accompanied by use of different irrigating solutions having antimicrobial effect as one of the desirable properties. An ideal irrigating solution should have antibacterial and tissue dissolving effect on the necrotic pulp remnant and minimum toxic effect on the periapical tissue. NaOCl is the most commonly used root canal irrigation solution up to date due to its antimicrobial effect and tissue dissolving properties, but it is harmful when put in contact with periapical tissue. Chlorhexidine gluconate is an alternative irrigation solution to NaOCl having wide range of antimicrobial activity against both Gram-positive and Gram-negative microorganisms, especially against Enterococcus faecalis. Main disadvantage of CHX is lack of organic tissue dissolution capabilities. The use of herbal plant extracts for the eradication of microbes has been the topic of interest due to the drawbacks of sodium hypochlorite and chlorhexidine. With the increasing popularity of traditional and holistic medicines due to their natural origin, easy availability, efficacy, safety and fewer side effects This poster addresses the various herbal extracts for use as effective endodontic irrigants.

SAHIL SINGH

PHOTOBIOMODULATION : ILLUMINATING ENDODONTICS

Photobiomodulation is not something new in the medical field, Mester in 1968 had stated the effects of laser therapy and its effect on reduction on pain. In the field of dentistry, PBM has garnered a great deal of attention in the past few years and is being studied to be used in various aspects of pre-treatment, treatment and post-

treatment modalities. Low Level Laser Therapy acts by inducing a photochemical reaction in the cell, a process referred to as photobiomodulation. Biomodulation Law proposed by Arndt-Schultz states that low-dose energy stimulates biological processes, and high dose energy inhibits biological responses. In PBM technique electromagnetic radiations with visible wavelengths or near infrared region are used. Most commonly used lasers for PBM are – 1. Ruby 2.Argon 3. Helium/Neon 4. Krypton 5. Gallium/Aluminium/Arsenide 6.Aluminium/Gallium/Indium/Phosphide 7. Gallium/Arsenide The basis of the PBM technique involves direct application of light energy with the ability of biological stimulation to cells of the body. Cellular photoreceptors, such as Cyto chromophores and pigments, can absorb this group of radiation and, by transferring it to the mitochondria and affecting activity of cytochrome oxidase and the Krebs cycle, can also increase the production of adenosine triphosphate. Findings of previous studies have illustrated that reducing dentin sensitivity to tactile and thermal stimulations, improving dentin formation in dental pulp, reducing inflammation of oral mucosa, accelerating bone formation, reducing pain after all types of dental treatments, and improving wound healing process are only some benefits of using PBMT in dentistry. PBM in endodontics – 1.Vital Pulp Therapy 2. Regenerative Endodontics 3. Post endodontic pain 4. Endodontic Surgery 5. Pulpal Anesthesia PBM and its effects are layered and from the outside it is quite evident that we have only touched the surface and there is a long way to go.

SRIKANTH RENIKINDHI

GADGETS FOR SHADE SELECTION

Selection of tooth shade is a very important step in esthetic dentistry as it is the final step and crucial step in the treatment outcome. As there are many complexions in natural tooth shades and many variations from individual to individual, shade selection is utmost important. Patients are more conscious about their esthetics, so this poster includes various equipments like shade guides, spectrophotometer, colorimeter, scanner, computer software for the selection of shade selection. Various methods including conventional and digital shade matching

AMRITHA BHAT H

THE MIGHTY MINISCULES IN ENDODONTICS

Nanoparticles with its nano size have been able to create a macro impact in the field of endodontics. The quest for an ideal endodontic material has always been the major concern and the introduction of nanoparticles can fulfil this ongoing demand. Some of the commonly used nanoparticles in the field of endodontics are the silver nanoparticles, chitosan, zinc , metal oxides, poly lactic co-glycolic acid, quaternary ammonium poly-ethylenimine etc. The success of any endodontic therapy mainly depends on the effective disinfection and sealing of the root canal system. The nanoparticles, taking the advantage of their size have been able to achieve good antibacterial properties, increased reactivity and to be activated with other compounds. It has been confirmed that nanoparticles are much more efficient than the traditional antibacterial methods and stands out with their surface chemistry and bonding properties. Nanoparticles incorporated irrigation systems have gained positive accolades and it has been suggested to use nanoparticles such as chitosan as the final irrigant. In addition to this, nanoparticles incorporated obturation materials and sealers have also been introduced.And in the coming years they might entirely replace the traditional materials due to their superior antibacterial properties and bioactivity. And they also have the potential to act as an antibiofilm agent and as a chelating agent on root dentin. Nanoparticles can also be used in pulp regeneration, drug delivery and root repair etc. Hence the nanoparticles in endodontics is a promising field with a scope for newer materials and advancements. Thus, this poster highlights about the various nanoparticles in endodontics, their characteristics and applications, and also the scope for future research.

R SUMUKH BHARADWAJ

"DENTRONICS CHARISMA IN ENDODONTICS : TOWARDS ROBOTICS AND ARTIFICIAL INTELLIGENCE IN DENTISTRY"

Artificial intelligence (AI) has significantly increased its presence and relevance in various tasks and applications in dentistry, especially endodontics. AI has the potential to replicate human intelligence to perform prediction and complex decision making in the healthcare industry. In endodontics, AI has shown accuracy and precision in terms of disease detection, determination, and prediction. In order to increase the success of endodontic treatment outcomes, AI can help to improve diagnosis and treatment. Due to the demand for precise diagnosis and top-notch patient care, AI technology has had an impact on the medical industry. A combination of electronic research and contacting specific businesses to learn more about their AI based services was done in order to understand the trend of AI in dentistry. Future comprehensive care systems powered by AI are anticipated to establish high-quality patient care, creative research, and development, and facilitate cutting-edge decision support tools. The key to AI development in dentistry, according to the authors, will be an inventive inter-professional coordination between clinicians, researchers, and engineers. AI will continue to connect with dentistry from a broad perspective due to the demand for precise treatment methods and quick information exchange. Additionally, these advancements will enable professionals to share health-related big data with hospitals, providers, researchers, and patients in order to deliver insights that improve patient care. This poster provides an overview of the fundamentals of AI, as well as its historical development and current applications. The goal of the present review poster is to lay the groundwork for future research in this quickly developing field by outlining the development and potential dental applications of AI in medically assisted diagnosis, treatment, and disease prediction.

DR. VARSHA. M

SELECTING THE RIGHT NEEDLE: MAKING THE RIGHT CHOICE FOR LOCAL ANESTHESIA

Effective local anesthesia is arguably the single most important pillar upon which modern dentistry stands. Paradoxically, the injection of local anesthetic is also perhaps the greatest source of patient fear, and inability to obtain adequate pain control with minimal discomfort remains a significant concern of dental practitioners. Dental anxiety describes the fear or stress that people have in visiting a dental unit for treatment. It is usually associated with a scare of needles, drills, pain, or other settings of dental practices. Dental operations and injections of local anesthesia are however among the most terrifying procedures for the patients. Pain management is among the main factors that affect the success of dental treatment and patient's satisfaction. Dental needles are the instruments responsible for delivering the anesthetic from the cartridge to the tissue. Needles were introduced to the market in the year 1853. Since then, they have been made strong, thin, sterile, flexible and indicated for one use only per intervention and patient. In addition, they come in sterile plastic containers and thus reduce the risk of cross-infection. Needle-based devices are evolving as a promising diagnostic and therapeutic tool in the field of medicine. They can be used for drug delivery, as well as extraction of fluids, for systemic and local effects. The conventional methods of drug delivery require repeated dosing in the oral cavity due to the presence of saliva. Hence delivery systems, such as needle-based devices that could provide sustained release of the drug in the oral cavity, are required. This poster describes an evolution of Needles used in Dental Anesthesia throughout the years and it's recent advancements.

DR. ADUSUMILLI SUHAS SAI , DR. GADAMSETTY ADITYA

COMPARATIVE EVALUATION OF DIFFERENT DESENSITIZING AGENTS ON DENTINAL TUBULE OCCLUSION: A SCANNING ELECTRON MICROSCOPIC STUDY

AIM: The aim of this study was to evaluate the effects of three different de-sensitizing agents on dentinal tubule occlusion under Scanning Electron Microscope (SEM) MATERIALS AND METHODS: 65 extracted teeth molars will be taken and the teeth will be sectioned using diamond disc to create dentin specimens measuring 5x5x3mm

the prepared disc will be mounted on acrylic block. The mounted specimens will be randomly divided into 4 groups followed by removal of smear layer by immersing in 17%EDTA for 2 min, thoroughly rinsed and stored in artificial saliva. Group 1: Control Group (n=5) Group 2: Novamin (n=20) Group 3: Nano Hydroxyapatite (n=20) Group 4: Self assembling peptide matrix (n=20) RESULTS: Study in progress

GOKUL KVISHWANATH S

VARIANCES IN SENSIBILITY OF ELECTRIC PULP TESTER IN SYSTEMICALLY COMPROMISED INDIVIDUALS

Electric pulp testing (EPT) is a valuable and a routine diagnostic aid that has been available for more than a century and used in dental practices worldwide. It is used to evaluate the condition of pulp based on the electrical excitation of the neural element of the pulp EPT works on the premise that electrical stimuli cause an ionic change across the neural membrane, thereby inducing an action potential with a rapid hopping action at the nodes of Ranvier in myelinated nerves. The pathway for the electric current is thought to be from the probe tip of the test device to the tooth, along the lines of the enamel prisms and dentine tubules, and then through the pulp tissue. The "circuit" is completed via the patient wearing a lip clip or by touching the probe handle with his/her hand. A "tingling" sensation will be felt by the patient once the increasing voltage reaches the pain threshold, but this threshold level varies between patients and teeth, and is affected by factors such as individual age, pain perception, tooth surface conduction, and resistance. Apart from these physiological conditions, Recent studies have shown us that with systemic diseases like anemia, diabetes mellitus and trigeminal neuralgia to name a few, also show variations in the sensibility of electric pulp testing. Thus a clear understanding in the variations of the thresholds in electric pulp testing values is necessary to diagnose and treat diseased teeth. The variations seen in the sensibility of EPT in systemically compromised individuals is addressed here.

DIVVE SRAVYA SAI

MANAGEMENT OF SUB GINGIVAL CROWN ROOT FRACTURES - A CASE SERIES

Trauma to the anterior teeth is a relatively common occurrence. Complex sub gingival tooth fractures require specific treatment approaches based on the level of fracture with respect to the alveolar crest and patient expectations. These cases can be managed by either orthodontic extrusion or surgical crown lengthening followed by reattachment Or by reimplantation with 180° rotation. Here we present successfully managed subgingival crown root fractures using these three different approaches. CASE DISCUSSION: Case 1: Management of crown root fracture by orthodontic extrusion Case 2 : Management of crown root fracture by surgical crown lengthening followed by crown reattachment Case 3: Management of crown root fracture by intentional replantation with 180 degrees rotation CONCLUSION: Proper diagnosis, treatment planning and follow-up care are important factors in the prognosis of various tooth fractures. Thorough understanding of the available treatment modalities and their specific indications is critical. The risks and benefits of each treatment option should be carefully evaluated during the treatment planning process.

SOPHIA SAUD

SPECIALISED PRO-RESOLVING MEDIATORS: NOVEL ENDOGENOUS REGULATORS OF INFLAMMATION

Human dental pulp is a highly dynamic tissue consisting of a network of immunocompetent cells that are crucial for tissue injury and pathogen defense. Pulpal inflammation can result in pulp tissue necrosis and apical periodontitis typically treated by complete pulp removal. Specialized pro-resolving mediators (SPMs) are enzymatically derived

from essential fatty acids to serve as a novel class of immunoresolvents that limit acute responses. Resolution of acute inflammation is necessary to avoid the development of chronic inflammation and to promote repair or regeneration. This active process is coordinated and regulated by a large number of mediators, including SPMs. They have been studied extensively and their potent effects on reducing inflammation have been documented. SPMs actively reduce neutrophil infiltration into inflamed tissues, enhance efferocytosis and bacterial phagocytosis by monocytes and macrophages and simultaneously inhibit inflammatory cytokine production. Experimental clinical application of SPMs have demonstrated promising results in a wide range of inflammatory disorders, including renal fibrosis, cerebral ischemia, marginal periodontitis, and cancer. In recent study on an animal model of pathogen-mediated inflammation, SPMs proved to reduce inflammation demonstrating an inhibitory effect against leukocyte infiltration. This poster presents a brief narrative review of the existing literature on the potential use of SPMs in endodontic therapies.

AJU ANTO PUTHUR

APPLICATIONS OF COLD ATMOSPHERIC PLASMA IN CONSERVATIVE DENTISTRY & ENDODONTICS

The matter has four state- solid, liquid, gas and plasma. Plasma is a cloud of proton, neutron and electron. Plasma is closely resembled to gas than any other state because constant contact with each other is not present. Plasma is of two types: thermal and non-thermal or cold atmospheric plasma. Cold Atmospheric Plasma (CAP) is said to be non-thermal because it has electron at a hotter temperature than the heavy particles that are at room temperature. CAP has the power to cause deactivation of microorganism, death of cancer cell, detachment of cells. Due to this reason researchers try to find the effectiveness of CAP in dentistry. Various methods are used to produce Cold atmospheric plasma like Atmospheric plasma pressure jet, Dielectric Barrier discharge, plasma jet pencil and plasma jet needle. The gases which are used for formation of CAP are helium, nitrogen, argon, heliox (mixture of oxygen and helium) and air. In comparison to laser beams, plasma has many useful advantages in its application to oral tissues. Major advantage of plasma treatment is that it does not produce any toxic residues. Considering the all characteristics of plasma like its effect in sterilizing, polymerization, dental caries, root canal disinfection and tooth bleaching, the use of plasma to dental health care is a novel technique. This poster emphasizes on various applications, development, mode of action, advantages, disadvantages of CAP.

ROHINI B

APPLICATIONS OF 3D PRINTING IN RESTORATIVE DENTISTRY: THE CURRENT SCENARIO

AIM: This poster draws attention to the recent advances in 3D printing and its application in fabricating dental restorations. Three-dimensional printing, also known as rapid prototyping or additive manufacturing, is a technology that is being gradually integrated into everyday lives and dentistry is no exception. This technology offers a lucrative advantage of combining precision and customization with reduced labor and time consumption. It aids the creation of a digital workflow wherein every step is performed virtually without a need for multiple laboratory procedures. Multiple 3D printing methods such as Stereolithography (SLA), Inkjet based system, Selective laser sintering (SLS) and Fused deposition modelling (FDM) allows us rapid prototyping. The implications of 3D printing in restorative dentistry include detection of carious lesion, cavity preparation, tooth die preparation, single tooth crown fabrication, wax pattern fabrication, inlay and onlay. This technology can change the techniques used in restorative dentistry for the benefit of both the patients and dentists alike.

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