



IMPRESSIONS

JOURNAL OF INDIAN DENTAL ASSOCIATION ATTINGAL BRANCH

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IMPRESSIONS

JOURNAL OF INDIAN DENTAL ASSOCIATION ATTINGAL BRANCH

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IDA ATTINGAL BRANCH

IDA Attingal Branch was established on January 14th, 2001. Since then, the branch has symbolized unity. The harmony among its members made the branch popular. Over time, the untiring efforts of eminent office bearers and members reached the branch to its current heights. The branch is always promised to deliver something to the community. Certainly, the plethora of programs organized by the branch over the past two decades has impacted the community's oral health. The branch and its members are always there to share knowledge among the dental fraternity and are the torchbearers of ethical dental practice.

IDA Attingal branch is involved in all the national and state activities of the association with great spirit and won many titles too. The branch organizes a multitude of programs including oral health screening camps, oral cancer detection camps, oral health awareness talks, free denture camps for the needy, continuing dental education programs and workshops for the dentists, training programs for the dental assistants, fun activities for its members, observance of important days, distribution of pamphlets and public awareness materials to the community, spreading awareness talks and videos via various social media platforms, financial support to the poor and a free active dental clinic at an orphanage. The branch is always committed to dental excellence and our journal 'Impressions' is its humble attempt to spread scientific communications among the dental fraternity.



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Dr. Deepa. G
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Dear Members,

I begin this Presidential address with heartfelt prayers for the victims of the Wayanad tragedy. My thoughts are with those who perished and with those who, though surviving, have lost everything due to the catastrophic landslide. May their lives be swiftly restored, and may they find the courage and strength to rebuild.

I extend special gratitude to all those who have risen to the occasion, tirelessly aiding in the rescue and rehabilitation efforts. Their selfless, compassionate actions during this time of crisis renew our belief in human love and kindness. We are, after all, interconnected members of the world, and it is our collective efforts that pave the way for brighter days.

Just as in dentistry where prevention is key, we should also strive to prevent such disasters where possible. Whether our contributions are large or small, let us each do our part to support Mother Earth, ensuring she remains steadfast in her ability to sustain and protect us. My sincere wishes for everyone's well-being.

I am happy to write this forward for our second edition of the journal. Hope everyone gets an interesting and scientific reading from our journal.

Dr. Deepa. G



Dr. Roshith S. Nath
Hon. Secretary,
IDA Attingal Branch

Dear esteemed members and readers,

I am honoured to welcome you to the latest issue of our journal, a platform for knowledge sharing and professional growth. As the secretary of the Indian Dental Association, Attingal branch, I am thrilled to see our community come together to advance the field of dentistry.

In this issue, we feature articles that highlight the latest trends and innovations in dental care. Our contributors have worked tirelessly to share their expertise and experiences with us.

I extend my gratitude to our editorial team, authors, and reviewers for their dedication and hard work. I also appreciate the support of our members and sponsors, without whom this journal will not be possible.

Let us continue to strive for excellence in dentistry and make a positive impact on the lives of our patients.

Dr. Roshith S. Nath

AUTHOR GUIDELINES

About the Journal : Impressions is the official scientific publication of IDA Attingal Branch, which publishes in every four months period.

Aims and Scope : The aim of Impressions is to publish all forms of scientific articles including systematic reviews, original articles, case reports, and review articles pertaining to dentistry. Those articles bring new knowledge to the field are welcomed.

Ethical Considerations : Manuscripts submitted for publication must comply with the following ethical considerations: Written informed consent must be obtained from the subjects before their data included in the study and the informed consent must be archived with the authors. Any data from the patient must be submitted by hiding their identity. All the research should be carried out with prior approval from the institutional or national ethics committee and should be in accordance with the Helsinki Declaration of 1964 (revised in 2008). If animals are using for the research, the authors must follow the institutional or national guidelines for the care of use of laboratory animals.

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Dr. Nripan. T
Editor-in-Chief
Impressions

TOUGH TIMES ARE GOOD TEACHERS !

I'm penning this editorial with great grief for the couple of incidents that happened in the past weeks. The cold-blooded rape and murder of a young doctor in West Bengal, and the landslide that occurred in Kerala shook the nation. Expressing the sincere condolences to the departed souls on behalf of our association. Tough times are good teachers. The only thing humans can do is hold together, acquire the courage, and fight back from square one.

Science was always there and will be there to help the mankind to progress to prosperity. Sharing the scientific knowledge helps to overcome the challenges and propels all to a better life.

We the editorial board is presenting the second volume of our prestigious journal '*Impressions*' to the readers. This volume includes five scientific articles which are informative at the same time engaging too.

Enjoy reading, Enjoy learning!

Dr. Nripan. T

ARTIFICIAL INTELLIGENCE IN PERIODONTAL PRACTICE

¹ Midhun Kishor S, ² Asif Salim

ABSTRACT

Artificial intelligence is a comparatively recent technological advancement in the medical field. Periodontal diseases are considered a global public health concern, with a high prevalence in both developed and developing nations. Artificial Intelligence is being utilized to enhance the accuracy of diagnosis, precision of treatment planning, and prediction of outcomes in the field of periodontology. This article aims to provide an overview of the various applications of Artificial Intelligence in periodontology.

Keywords : Artificial intelligence, Haptic devices, ANNs, CNNs, CAD Software, Electronic nose

INTRODUCTION

In the fast-paced world we live in, it's easy to overlook the technological marvels that subtly shape our daily lives. From the smart phones in our pockets to the sophisticated algorithms guiding our online experiences, advanced technology is seamlessly integrated into our routines, often without our conscious awareness. One such domain where technology has quietly revolutionized practices is healthcare, with artificial intelligence (AI) emerging as a pivotal player.

Artificial intelligence, once the stuff of science fiction, is now a tangible force driving innovation across various fields. Its applications range from predictive analytics in finance to autonomous vehicles in transportation. However, one area that has seen particularly remarkable progress thanks to AI is dentistry, especially in the specialized field of periodontology. AI is defined as “the branch of science and engineering associated with computational knowledge which is commonly

referred to as intelligent behavior, as well as the development of systems exhibiting similar behavior. Alan Turing, a British mathematician, was one of the pioneers of AI. What will happen if a machine thinks like a human? Which was the idea behind the invention of AI and Alan Turing made it possible. The term 'Turing test', was named after him, which is explained as a computer's intelligent behavior and its ability to accomplish cognitive tasks on par with humans.¹

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Though the term AI was coined in 1965 by John McCarthy, it was Newell and Simon in 1955 who developed “The Logic Theorist” which is considered as the first AI program. It is the simulation of human intelligence processes by computer systems. The main subdivisions of AI include deep learning (DL), machine learning (ML), robotics, Artificial neural networks (ANNs), and Convolutional neural networks (CNNs). AI works in two phases, i.e., a training and a testing phase.²

Periodontology, is experiencing a transformation driven by AI technologies. From early detection of periodontal diseases to personalized treatment plans, AI is enhancing the precision and effectiveness of periodontal care. Precise diagnosis depends on the skill and experience of the doctor, AI can enhance this scenario and become a promising cutting edge in the field of periodontal diagnosis and treatment planning. This article delves into the fascinating ways AI is reshaping periodontology and its different applications that redefine periodontology and implantology, making dental health care more proactive, accurate, and accessible than ever before.

AI AND ITS APPLICATIONS

A great way for dentists to improve their skills is by working with actual patients, but it is also helpful to practice on artificial teeth before diving in. In dentistry, having sharp visual and motor skills is crucial, and these abilities are honed through practicing on artificial teeth and with the guidance of experienced professionals. While it is easy to explain visual skills, describing the tactile sensations can be a bit tricky. Traditional teaching methods do not quite capture the exact feel of dental procedures. However, there's a nifty solution called

haptic devices (sense of touch) that can bridge this gap. These devices can capture and reproduce tactile sensations, allowing students to experience their instructor's program. The University of Illinois at Chicago (UIC) College of Dentistry has come up with a virtual reality dental training simulator called 'PerioSim'. It not only recreates the visual aspects of real dental procedures, but also allows students to feel the sensations, resulting in better training outcomes and fewer mistakes. 'PerioSim' is a robotic arm that is widely used in evaluating periodontal pockets by utilizing tactile sensation to differentiate between soft and hard tissues displayed on the visual monitor.³

Halitosis refers to the condition of offensive mouth odour. An estimated 90% of halitosis cases originate within the oral cavity.⁴ Volatile Sulphur compounds which are responsible for causing halitosis are mainly produced by the bacterial metabolism in the oral cavity. A non-invasive artificial olfaction technique that can assess the full spectrum of oral volatile compounds has been developed. It is also called an electronic nose as it is a combination of mammalian olfaction and AI which identifies specific patterns of smell and is used as a reference for future identification. The programmed sensor array consists of two subsets in which the bottom panel has a higher affinity for volatile sulfur compounds (VSCs), and the top panel has a higher affinity for non-sulfuric volatile organic compounds. On exposure to the sample, the sensors react simultaneously and the responses are processed for pattern recognition. The software compares the patterns obtained from different sensors with the database of patterns previously obtained during the phases of preclinical training. Later a decision tree classifier analyses the breath and determines whether the subject suffers from oral or extra oral halitosis. If the halitosis does not originate from the oral cavity, it can analyze the

association with systemic diseases. In 2017, twenty functionalized nanomaterial-based sensors were designed to successfully distinguish between 17 different systemic diseases by analyzing the exhaled breath with 86% accuracy.⁵

*Periodontitis is generally classified into aggressive (AgP) and chronic periodontitis (ChP). In 2017 Feres et al. investigated effectively by differentiating between generalized AgP in younger people and generalized ChP utilizing 40 bacterial species of the subgingival microbial complexes and a linear Support Vector Machine (SVM)-based classifier.⁶

*AI-based systems have the potential to assist clinicians in early detection and diagnosis of periodontal diseases. Various studies are there to support this statement. Lee et al in 2018 introduced a fully interpretable and completely automated method known as Deetalperio for diagnosing the severity of periodontitis by using panoramic radiographs. For this a pre-labeled Periapical dataset was given, to predict and diagnose the periodontal status of the teeth. The data obtained from this study were similar to that attained by a periodontist with board certification.⁷

In 2019, Krois et al. demonstrated that the trained AI program has at least a dentist-like discriminating capacity to evaluate periodontal bone loss on panoramic radiographs despite other radiographic imaging techniques. The use of intra-oral periapical radiographs and other imaging modalities will enhance the accuracy of Convolutional Neural Network (CNN).⁸

AI also has a significant role in perio-medicine. Studies done by Rana, Yaunev et al, in 2019 showed the correlation between systemic health and periodontal health, which used an automated process that combined the

aforementioned intra-oral fluorescent porphyrin biomarker imaging, subject's Modified Gingival Index (MGIs), machine learning, and other sources of screenings, including a self-reported medical history questionnaire, Blood Pressure (BP), Body Mass Index (BMI), single-lead ECG, optic nerve disorders, etc., were analyzed. Significant correlations were found between gingivitis and optic nerve disorders.⁹

A major application of AI in implant dentistry is its use in digital three-dimensional (3D) treatment planning for aligning intraoral 3D images with cone beam computed tomography (CBCT) data in software for surgical evaluation and planning. AI can assist in implant planning by analyzing intraoral scan and CBCT data of a patient to determine the optimal location for implant placement, reducing the risk of complications during surgery and improving the success rate of implants.

In 2020, Nozaki et al used a deep learning-based object detection software to identify implant systems with the help of panoramic radiographs. This will help to overcome the limitation of the dentist to treat implant-related issues, in cases where the dentist is not aware of the implant system.¹⁰

Mouhyi et al in 2020, used AI along with the CAD software for the fabrication of implant-supported monolithic zirconia crowns (MZCs) cemented to individual hybrid abutments. It reduces the cost of prosthetic surgery, possibility of errors and mainly saves the time of the clinician. The reported success rate was 99% and 91.3%.¹¹

Lyakhov et al., 2022 evaluated prediction of the success of a single implant by analyzing patient statistics using an AI system. The AI system showed 94.48% accuracy in the detection of patient

statistics to predict the success of single implants. This system can improve implant survival and minimize complications by highlighting the less significant patient factors that affect the quality of the implant installation.¹²

Moufti et al 2023 identified and demarcated edentulous alveolar bone on CBCT images before implant placement. Machine Learning showed better accuracy in the segmentation of the edentulous alveolar bone on CBCT images as compared to manual segmentation.¹³

CHALLENGES AND LIMITATIONS

Despite the potential benefits of AI in periodontics, several challenges and limitations need to be addressed to facilitate its widespread adoption in clinical settings. Key among these challenges is the need for large-scale, high-quality datasets to effectively train AI algorithms. Concerns regarding data privacy and security are paramount, as is the lack of regulatory guidelines for AI-based diagnostic and treatment systems. Furthermore, barriers related to cost, infrastructure, and clinician acceptance of AI technologies pose significant hurdles.

AI offers tremendous advantages and has the potential to revolutionize any professional field, including healthcare. In periodontics, AI brings accuracy to diagnosis, standardizes treatment protocols, shortens treatment times by eliminating routine tasks, facilitates systematic and structured patient data collection, and reduces human error. It also promises to increase patient involvement in healthcare.

However, it is important to recognize the drawbacks of AI. The initial setup costs are significant, and the frequent upgrades required for both hardware and software to keep up with the

latest standards add to the expense. Ethical concerns also arise regarding the use of medical data for training and testing AI programs. AI applications in healthcare are often developed by computer scientists without medical expertise, which can lead to a highly analytical approach that may overlook the nuanced interactions and professional expertise vital to modern healthcare.

CONCLUSION

In conclusion, AI promises a revolutionizing change in the field of periodontics by enhancing disease detection with more accuracy, risk assessment, treatment planning, and patient management. Within the limitations, AI can provide an interdisciplinary collaboration with other fields of dentistry along with periodontology. AI can improve unprecedented changes in entire health care systems.

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OPTIMIZING WORK POSTURE AND MAGNIFICATION IN DENTISTRY : ENHANCING PRECISION AND COMFORT

¹ AarathiVijayan, ² Sneha

ABSTRACT

There is a relation between clinical postures of the dental practitioner and work related musculoskeletal disorders (WRMD). Assuming a more neutral and less stressful posture is reported to reduce the amount and severity of musculoskeletal disorders. The use of magnification lenses while performing dental procedures may increase the quality of work and decrease the likelihood of musculoskeletal problems.

Keywords : Magnification , Ergonomics , Work posture, loupes

INTRODUCTION

In the field of dentistry, precision and attention to detail is paramount. Dentist routinely perform intricate procedures within confined oral spaces, necessitating tools that enhance visibility and ergonomics. Two critical factors that significantly contribute to the efficiency and longevity of a dental practitioner is magnification and work posture.

Magnification tools such as loupes and surgical microscopes have revolutionized dental practice by providing enhanced visual acuity. These devices magnify the operating field, enabling dentists to detect subtle details that might otherwise be missed. This heightened clarity is invaluable during tasks like cavity preparation, root canal treatments, and dental implant placements, where precision directly impacts outcomes.

Moreover, magnification reduces eye strain and fatigue, common issues among dental professionals due to prolonged periods of intense

focus. By alleviating these challenges, loupes and microscopes not only enhance the quality of care but also promote long-term occupational health.

DISCUSSION

WORK POSTURE: MITIGATING MUSCULOSKELETAL STRAIN

Beyond visual enhancement, proper work posture is fundamental to a dentist's physical

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well-being. Dental procedures often require practitioners to maintain awkward positions for extended durations, leading to musculoskeletal strain and potential injuries if not managed correctly.

Ergonomic principles advocate for maintaining a neutral spine, proper chair height adjustment, and adequate support for the arms and wrists. Implementing ergonomic dental chairs and adjustable equipment helps dentists achieve optimal alignment, reducing the strain on their back, neck, and shoulders.¹

INTEGRATION FOR OPTIMAL PERFORMANCE

The synergy between magnification and ergonomic posture is essential for optimal dental performance. Magnification aids in visualizing intricate anatomical structures with clarity, while ergonomic posture ensures that dentists can sustain these tasks comfortably over time. Together, they enhance procedural efficiency, reduce the risk of errors, and promote the longevity of a dentist's career.

TECHNOLOGICAL ADVANCES AND FUTURE DIRECTIONS

Advancements in technology continue to refine magnification options, with innovations such as digital magnification systems and augmented reality promising even greater precision and diagnostic capabilities. Similarly, ergonomic research focuses on developing adaptive tools and training programs that cater to individual practitioner needs, further optimizing work conditions and patient outcomes.

The occupational problems in Dentistry are highly related to the large incidence of musculoskeletal disorders.³ However, using magnifying loupes provides magnification of the operative field, requiring that the operator remain

in a proper back position during work sessions. This keeps them in a good ergonomic position, decreasing the chances of operator movement amendments.⁴ Shanalec⁵ and Juggins⁶ noticed that the use of loupes requires a minimal work distance between the operator's eyes and patient's mouth, which is compatible with the neutral posture of the spine and neck, contributing to the preservation of musculoskeletal health. Additionally, other advantages such as increased comfort and lower incidence of pain, especially in the spinal region, are observed.

Branson et al.⁷ and Mailet et al.⁸, using the same method, evaluated the effect of magnification loupes on the posture of dental students. In both these studies, the work posture was evaluated by the "Posture Assessment Instrument" (PAI) method.⁹ The results were that the work posture was more adequate when the individuals were using magnification loupes. Therefore, these authors recommended the early implementation of the devices in order to decrease the risk of the development of musculoskeletal disorders.

Perrin et al¹¹ reported that magnification promotes a better ergonomic position instead of an improvement in the optical properties of the operator. Performing procedures in the dental field requires and depends on a series of factors such as theoretical knowledge, professional experience, and equipment used, highlighting the factors based on the visual tools.¹² The reduction of visual acuity is an expected event in the natural aging process, mainly after the age of 40 years. Therefore, using magnification is advised over the years of dental practice to offset any abnormality in visual capacity, positively impacting this factor

Hayes et al¹⁰ highlights that the inappropriate use of loupes can impair the sense of position,

orientation and movement of the head and neck, resulting in the aggravation of musculoskeletal symptoms and eyestrain.¹¹ According to these studies there is both positive and negative impact on using magnification loupes if not trained properly.

IMPLICATIONS FOR PRACTICE AND EDUCATION

Dental practitioners physical and psychological well-being is an important factor for quality care delivery and a prolonged career. Therefore, it is expected that healthcare systems and insurers over time will embrace and promote the technology that will help improve healthcare providers own fitness, health, and wellbeing, in addition to improving the outcomes of rendered treatments. The addition of magnification loupes to the armamentarium of a dental healthcare worker could be a cost-effective approach to achieving these goals. At the dental school level, studies have shown approximately.¹² 3 to 68% of dental students use magnification, which largely depends on the location of the dental school.¹³ Also, dental students have a positive impression and good acceptance of magnification loupes when trying them during simulation or clinical training. Therefore, introducing the loupes early in their dental education can teach them the importance of ergonomics when providing oral care. This also has the potential to reduce overall musculoskeletal issues over their careers and reduce the associated financial and psychological burdens of the future professionals in this field. Consequently, it is advisable to include visual magnification training as an integral part of dental school curricula. In the future, magnification loupes can even be used as educational tools by teachers or trainers for live demonstrations to students and instructions, as the loupes can be connected to screens and projectors.

Dental loupes have a few disadvantages that are important to note. There are added financial costs to acquire and maintain high-quality loupes over the years, and it is certainly a larger burden in the early years of dental training and practice. More widespread use over time might lower costs through economies of scale. Accessibility is also compounded by the absence of reputable vendors and service centers of quality loupes in some developing countries.¹⁴ It should be noted that, care must be taken as magnification loupes are non-disposable, and they should be disinfected appropriately. There is still a shortage of randomized clinical trials to compare outcomes between treatments done with and without magnification in most specialties and procedures. It was also noted that most observational studies on the effects of musculoskeletal disorders have short follow-up periods. Studies of longer duration are necessary for evidence of any sustained benefits of magnification on the treatment outcomes in patients and prevention of physical disorders of operators.

CONCLUSION

In conclusion, the integration of magnification and ergonomic work posture represents a cornerstone of modern dental practice. These elements not only enhance clinical outcomes by improving visualization and reducing procedural errors but also safeguard the physical health and longevity of dental professionals. As dentistry evolves, embracing technological innovations and ergonomic principles will continue to redefine standards of care, ensuring that practitioners can deliver the highest quality treatments while maintaining their own well-being. By prioritizing magnification and work posture, dentists uphold a commitment to excellence in patient care and professional longevity, thereby shaping the future of dental healthcare.

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PROSTHODONTIC REHABILITATION OF HEAD AND NECK CANCER PATIENTS - CHALLENGES AND NEW DEVELOPMENTS: A REVIEW

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ABSTRACT

Prosthodontic rehabilitation after head and neck cancer treatment is a step always overlooked. If the prosthetic rehabilitation is planned before the cancer treatment and the prosthodontist is involved in the team of cancer treatment the outcomes will be better and effective. The present article shed light into various aspects of prosthetic rehabilitation after head and neck cancer treatment.

Keywords : Maxillofacial prosthetics, Prosthetic rehabilitation, head and neck cancer

INTRODUCTION

Head and neck cancer is the fifth most common cancer worldwide.¹ The treatment of this disease, which typically includes surgery, radiotherapy, chemotherapy, or a combination of these modalities, significantly impacts patients' psychological well-being and functioning. Besides curing the cancer, a key objective is to restore oral function and aesthetics affected by the treatment. Surgery for head and neck cancer can complicate rehabilitation efforts by altering oral anatomy and soft tissue conditions, affecting muscle balance, causing sensitivity disorders, and changing facial appearance. Factors such as the tumor location, size, additional radiotherapy, and extensive resections of the soft palate and tongue can further deteriorate oral functioning. Research highlights the significant impact on patients' quality of life after treatment.

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Regaining oral function, including prosthetic rehabilitation, is crucial for head and neck cancer patients.² Therefore, the oncological team requires the support of specially trained dental professionals, preferably maxillofacial prosthodontists, to assist in planning and executing oral rehabilitation. This may involve using osseointegrated intra- and extra-oral implants to retain oral and facial prostheses. Achieving rehabilitation goals necessitates close collaboration between ablative surgeons, reconstructive surgeons, radiation oncologists, maxillofacial prosthodontists, and medical engineers. This teamwork is essential for optimal rehabilitation of head and neck cancer patients. This expert review aims to highlight the role of maxillofacial prosthodontists in treatment planning and oral rehabilitation, as well as to discuss challenges and new developments in prosthodontic rehabilitation for these patients.

PRETREATMENT SCREENING:

A multidisciplinary first-day consultation aims to reduce the time between diagnosis and treatment of oral cancer.³ Including maxillofacial prosthodontics in this initial consultation is crucial. This session provides a preliminary plan outlining the necessary diagnostic procedures and prosthetic involvement, allowing treatment to commence promptly and effectively.

The role of the maxillofacial prosthodontist includes conducting a pre-radiation dental screening and a pretreatment dental and oral rehabilitation screening. This involves gathering information on self-care, oral hygiene, dental status, mouth opening, tumour location, the need for surgery and/or radiotherapy, the potential for future prosthesis retention, and the current level of oral function.⁴

This information is essential for designing the best prosthetic treatment plan, which should consider the patient's preferences, tumour characteristics, extent of resection needed for clean margins, reconstruction types, need for chemo/radiation, and dental/prosthetic options.

PRE-RADIATION DENTAL SCREENING:

If radiotherapy is anticipated, head and neck cancer patients whose oral cavity will be exposed to radiation require a thorough dental examination. These patients must complete any necessary dental treatments before radiotherapy begins. Pre-radiation dental screening aims to identify and address oral infections, such as un-restorable caries, periodontal disease with pockets ≥ 6 mm, periapical issues, and (partially) impacted teeth.

PRE-TREATMENT DENTAL AND ORAL REHABILITATION SCREENING:

At the first-day consultation, even though the final cancer treatment plan might not be clear, maxillofacial prosthodontists should assess whether patients will need prosthetic rehabilitation during or after cancer treatment, considering the patients' preferences. This early assessment ensures that all necessary information is included to design a tailored prosthetic plan. Decisions about retaining teeth, even those at risk of infection, may be made to support future prosthetics, with careful consideration of risks like osteoradionecrosis.

Early decisions about implant placement are crucial for effective rehabilitation. Proper planning of implant location and number is essential for successful prosthetic construction.⁵ Research shows that placing implants during surgery results in higher success rates for functional dentures post-therapy. There is a trend towards early prosthodontic rehabilitation, often requiring

immediate implant procedures. Implants placed during surgery have higher survival rates, especially in the mandible and grafted bone.

For per-operative prosthetics, prosthodontists need to record the intra-oral situation using impressions, intra-oral scanning, and/or cone beam computed tomography (CBCT). This helps in creating surgical obturators, guides, models, or implant-supported prostheses. Three-dimensional (3D) intra-oral scanning allows combining intra-oral data with CT and MRI data, improving surgical and prosthetic planning.⁶ If scanning is difficult due to the tumor, trismus, or pain, analogue impressions can be taken and digitized later.

When extra-oral defects are expected from surgery, measurements must be taken for future prostheses. While analogue methods are still effective, digital technology simplifies prosthodontic design. Clinical photographs document skin, prosthetic, and facial features, aiding communication within the team. All gathered information helps develop a detailed prosthetic plan for the patient's rehabilitation.

MULTIDISCIPLINARY APPROACH:

In the past, dental work was done after cancer treatment. Now, it is planned from the start, integrating both surgery and dental care. This approach helps in detailed planning before cancer therapy begins. During reconstruction meetings, the team explores all possible options, with input from prosthodontists to ensure everything works together, including potential implants. Advanced 3D planning and computer design tools provide valuable models that help the team make the best decisions for reconstruction after cancer treatment.

VIRTUAL PLANNING:

After finalizing the cancer treatment plan, using 3D virtual surgical planning (VSP) can be crucial for the surgical team. It allows for precise planning of surgeries and prosthetic reconstruction. This method helps ensure successful outcomes and improves the chances of completing oral rehabilitation. With 3D VSP, 3D printed guides can facilitate performing both the removal and reconstruction procedures in one surgery. However, accurately reproducing soft tissues with digital tools remains difficult, which can affect prosthetic planning. This means careful choices are needed for preserving dental arches, selecting between fixed or removable prostheses, and deciding on implants. Better methods for reproducing soft tissues are being developed.

REHABILITATION OF MANDIBULAR DEFECTS:

Smaller head and neck tumours often require only soft tissue removal, which can be managed with primary closure. If this results in a loss of the vestibule or a compromised neutral zone, customized prostheses are necessary to restore near-normal oral function after surgery and prosthetic treatment.

Advanced tumours may create large defects that need surgical reconstruction. This can lead to unfavorable changes in anatomy, such as flap positioning and scar tissue, which can affect speech, chewing, and swallowing. Additional issues like loss of sensation, a shallow or absent buccal vestibule, reduced saliva production, and trismus may further impair oral function. Surgery that involves bone removal can cause even greater problems by disrupting the mandible, causing tooth loss, and creating severe deformities. Impaired

tongue mobility can particularly affect the fit and function of mandibular prostheses during speech and chewing.⁷ Using endosseous oral implants to support prostheses can help alleviate many of these issues by stabilizing the prostheses.

Prostheses can help reduce stress on compromised soft tissues and underlying bone. Many patients can achieve nearly normal chewing function with implant-supported removable partial dentures or implant-retained mandibular overdentures. Enhanced dental rehabilitation greatly improves oral function, diet, and overall quality of life.

However, a relatively small percentage of patients complete prosthetic rehabilitation. Reasons for incomplete treatment include vertical discrepancies between grafts and the remaining mandible, poor soft tissue quality, and the type of prosthesis used.⁸ Implant placement during initial reconstruction can reduce the time between surgery and dental rehabilitation, increasing the number of patients who achieve full oral rehabilitation.

REHABILITATION OF MAXILLARY DEFECTS:

Managing maxillary, midface, and skull-base tumors involves complex challenges, particularly with ablative surgery and subsequent oral and facial reconstruction. Maxillary resections create various oronasal defects, each requiring different strategies to restore oral function. Several classification schemes for maxillectomy have been developed, starting with classification by Brown et al., in 2000. These schemes categorize maxillary defects based on their location, extent (both vertical and horizontal), and biomechanical forces, and offer guidance for both surgical and prosthetic rehabilitation options.

RESTORATIVE DECISION MAKING:

When a minor oro-nasal fistula occurs after tumour removal and primary closure is not possible, using soft tissue flaps for reconstruction can yield good results if the prosthesis fits well. For larger maxillary defects, obturator prostheses are commonly used, including types for hard palate, soft palate, or both. However, these can be uncomfortable, hard to manage, and often need adjustments.

For extensive defects where there is little remaining bone or teeth, prosthetic retention and stability become issues. Placing implants in the maxilla can improve the fit and function of obturator prostheses, making them more effective. Patients with implant-supported obturators generally have better chewing and less discomfort compared to those with traditional obturators.

Studies suggest that reconstructing defects may be more beneficial than using obturators alone, especially for comfort and self-esteem. However, for some patients, implant-supported obturators are a viable option when surgical reconstruction is not possible.⁹ In low-income areas, obturators remain a common choice due to their lower cost.

Advancements in digital technology, such as 3D printing, are improving obturator design, allowing for better fitting and fewer adjustments.

For very large defects, combining surgical reconstruction with dental rehabilitation is usually preferred. Zygomatic implants provide strong support for prosthetic rehabilitation if placed during the initial surgery. Techniques like the zygomatic implant perforated flap and the Rohner method, along with virtual surgical planning (VSP), help in effectively reconstructing large maxillary defects in one or two stages.¹⁰

CONCLUSION

Oral rehabilitation is a crucial part of treating head and neck cancer patients and significantly improves their quality of life. A multidisciplinary team is essential for planning and carrying out the rehabilitation process, with maxillofacial prosthodontists playing a key role from the start. The use of 3D technology in diagnostics, planning, and oral rehabilitation is rapidly advancing and is likely to become a standard practice in the future.

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OZONE THERAPY : A NEW FACE AND MILESTONE IN DENTISTRY

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ABSTRACT

Ozone therapy has emerged as a versatile treatment modality in dentistry, owing to its potent antimicrobial, anti-inflammatory, and healing properties. This review explores the multifaceted role of ozone in dental practice, emphasizing its historical evolution, underlying mechanisms, and diverse clinical applications. The therapy's minimal invasiveness, combined with its efficacy in reducing microbial load and promoting tissue regeneration, offers significant advantages over conventional treatments.

Keywords : Ozone Therapy, Antimicrobial, , Biofilm Disruption, Dental Applications, Ozone Toxicity.

INTRODUCTION

Ozone therapy has gained significant attention in the dental field for its diverse therapeutic properties. Ozone (O₃), a blue gas, is a triatomic molecule consisting of three oxygen atoms.¹ Ozone is a powerful oxidizing agent with potent antimicrobial, anti-inflammatory, and immunomodulatory effects.² Ozone has got a high-oxidation potential which is 1.5 times greater than chloride when used as an antimicrobial agent. These characteristics make it an effective adjunctive treatment for various dental conditions, including dental caries, periodontal diseases, and endodontic infections.

The use of ozone in dentistry offers several advantages over traditional methods. It provides a minimally invasive approach to treating dental infections, reduces the need for antibiotics, and enhances the healing process. The versatility of ozone therapy allows for its application in different

forms, such as gaseous ozone, ozonated water, and ozonated oils, each suited for specific clinical scenarios.³

MECHANISM OF ACTION OF OZONE

Ozone exerts its effects through several mechanisms :

1. Ozone disrupts the cell walls of bacteria, viruses,

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and fungi, leading to cell lysis and death.⁴

2. Ozone modulates the immune response, reducing inflammation and promoting tissue regeneration.⁵

3. Ozone enhances cellular metabolism and oxygen delivery, contributing to pain relief and accelerated healing.⁶

APPLICATIONS IN DENTISTRY

1. MANAGEMENT OF DENTAL CARIES

Ozone therapy has proven effective in managing dental caries due to its potent antimicrobial properties. By disrupting the cell walls of cariogenic bacteria, ozone helps to halt the progression of caries and aids in the remineralization of affected enamel. Clinical studies have shown that ozone can be used to treat initial carious lesions without the need for invasive procedures.⁷ The use of ozone is as simple and effective in treating root caries in medically compromised patients and elderly people.⁸

2. TREATMENT OF HYPERSENSITIVITY

Dentin hypersensitivity, often resulting from exposed dentinal tubules, can be effectively managed with ozone therapy. The treatment involves applying ozone gas to the exposed root surfaces, which removes the smear layer and allows for better penetration of desensitizing agents such as calcium and fluoride. Clinical trials have reported significant reductions in sensitivity following ozone treatment, making it a valuable option for patients suffering from this condition.^{9,10}

3. ENDODONTICS

Ozone therapy serves as a potent adjunctive treatment due to its ability to eliminate resistant

microorganisms within the root canal system. Ozonated water, gas, and oils are used to irrigate the canals, reducing the microbial load and enhancing the success rate of root canal treatments.^{11,12} The antimicrobial action of ozone helps to disinfect the canals and promotes peri-radicular tissue healing.

4. RESTORATIVE DENTISTRY

Prior to etching and sealing, ozone can be applied to eliminate bacteria within the dentinal tubules, reducing the risk of secondary caries and improving the longevity of restorations. Research indicates that ozone treatment does not adversely affect the physical properties of enamel or the bond strength of restorative materials, making it a safe and effective adjunctive procedure in restorative treatments.¹³

5. PERIODONTAL THERAPY

Ozone therapy plays a significant role in managing periodontal diseases by targeting the plaque biofilm, a major etiological factor in these conditions. Ozonated water and gas can be applied to periodontal pockets, significantly reducing bacterial counts and inflammation.¹⁴

6. ORAL AND MAXILLOFACIAL SURGERY

Ozone therapy is used to enhance bone metabolism and accelerate the healing process. It is particularly useful in treating conditions such as chronic mandibular osteomyelitis and bisphosphonate-related osteonecrosis of the jaws.¹⁵

7. PERIIMPLANTITIS AND IMPLANT MAINTENANCE

Ozone therapy is effective in the prevention and management of periimplantitis, an inflammatory condition affecting the tissues

around dental implants. Ozone's antimicrobial action helps to control plaque accumulation and reduce inflammation around implants. Additionally, ozone promotes tissue regeneration and wound healing, supporting the overall health and longevity of dental implants.¹⁶

8. WOUND HEALING AND POST-SURGICAL CARE

Ozonated water has been shown to accelerate wound healing in the oral cavity by enhancing the physiological healing process.¹⁷ It reduces postoperative complications, minimizes the need for systemic medications, and promotes tissue regeneration. Ozone therapy is applied post-surgically to clean wounds, reduce microbial load, and stimulate healing.

9. DENTURE CLEANING AND MAINTENANCE

Ozone therapy is effective in reducing microbial plaque on dentures, particularly targeting *Candida albicans*, which is a common cause of denture stomatitis.¹⁸

ADVANTAGES OF OZONE THERAPY

1. Ozone can overcome oxidative challenges, making it effective against pathogens that may develop resistance to antibiotics. Evidence shows ozone directly inactivates bacterial toxins, unlike antibiotics.¹⁹
2. When used correctly, ozone therapy is simple, less invasive, painless, and time-efficient. It is considered completely safe for patients, practitioners, and the environment.
3. Reduces patient anxiety compared to traditional drilling and filling techniques in dentistry.

4. Ozone therapy is cost-effective, potentially reducing medical costs and invalidity compared to traditional treatments like antibiotics and disinfectants.²⁰

5. Can be used as a sole treatment or combined with minimally invasive techniques to improve treatment quality.

DISADVANTAGES OF OZONE THERAPY

1. Inhalation can be toxic to the pulmonary system and other organs due to the vulnerability of mucosal cells to oxidation. The European cooperation of Medical Ozone Societies prohibits intravenous injections of ozone gas due to the risk of air embolism.²¹
2. Respiratory irritation (rhinitis, cough), headache, occasional nausea, and vomiting. Shortness of breath, blood vessel swelling, poor circulation, and heart problems.²²
3. Due to its high oxidative power, all materials in contact with ozone must be resistant (e.g., glass, silicon, Teflon).²³
4. Patients should be placed in the supine position, inhale humid oxygen, and take ascorbic acid, Vitamin E, and N-acetylcysteine in case of intoxication.

CONTRAINDICATIONS FOR OZONE THERAPY

The use of ozone therapy is contraindicated in several conditions. These include pregnancy, severe anemia, and hyperthyroidism. Other contraindications are thrombocytopenia, severe myasthenia, and acute alcohol intoxication. Recent myocardial infarction, hemorrhage from any organ, and glucose-6-phosphate dehydrogenase deficiency are also on the list.²⁴ Additionally,

individuals with an ozone allergy should avoid this therapy.

Prolonged inhalation of ozone can be harmful to the lungs and other organs, however, when used in well-calibrated doses, ozone therapy can be therapeutic for various conditions without causing toxicity or side effects.²⁵

CONCLUSION

Ozone therapy aligns with the public's demand for non-invasive, effective dental care, representing a paradigm shift in dental practice. It offers a range of benefits, including immunostimulant, analgesic, anti-hypnotic, detoxifying, antimicrobial, bioenergetic, and biosynthetic actions, making it ideal for a wide range of dental conditions affecting intraoral hard and soft tissues.

Ozone therapy is especially suitable for younger patients who are often afraid of traditional drilling techniques. These advantages increase patient acceptability and compliance, showcasing ozone therapy's potential in dentistry.

Despite these benefits, the application of ozone therapy in dentistry is limited due to its possible side effects, particularly its toxicity when inhaled or administered intravenously. Proper usage and adherence to safety guidelines are crucial to avoid these risks.

Dental practitioners need to be educated on the correct usage of ozone therapy to enhance patient care while minimizing treatment time and costs. Additionally, developing and utilizing precise ozone generators with defined gas volumes and concentrations will help mitigate the risks associated with ozone toxicity.

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AESTHETIC CROWNS : EMERGING TRENDS IN PEDIATRIC DENTISTRY

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ABSTRACT

Early childhood caries (ECC) commonly affects the primary dentition, particularly the maxillary anterior teeth and molars. When it comes to restoring these anterior teeth, one of the primary considerations is esthetics. The appearance of these teeth has a significant impact on young children's self-esteem and confidence. Dentists and clinicians have developed various types of aesthetic crowns over the years to assist in the restoration of deciduous anterior teeth. The continuous evolution of materials and technologies in paediatric dentistry has paved the way for new trends in dental aesthetics. Therefore, staying updated on these emerging trends is essential for ensuring effective rehabilitation and enhancing the esthetics of anterior teeth for young patients. By exploring and incorporating these newer materials and technologies into practice, dental professionals can improve the quality of care provided to young children with ECC, ultimately leading to better outcomes and increased patient satisfaction.

Keywords : ECC, Anterior aesthetics, Aesthetic crowns

INTRODUCTION

Dental caries affecting children's teeth is a significant public health problem affecting 40 to 60% of schoolchildren in India. In Scotland, the National Dental Inspection Program (NDIP 2003) showed that over half of 5-year-old children had decayed primary teeth. Primary dentition plays critical morphological, functional and psycho social roles in child development, by providing proper conditions for skeletal and muscular growth, establishment of occlusion, mastication, phonation and esthetics. Further more, maintaining deciduous arch integrity exerts a storing influence on developing permanent dentition, conserving dental arch, and retaining the space needed for successor teeth to erupt.¹

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Today there are many solutions available for esthetic problems in pediatric dentistry. But the biggest dilemma is choosing the best treatment modality for a particular patient and situation which depends on various factors like the age of the patient, motivation of the parent, child's behavior in the dental clinic, and the socioeconomic status of the patient. Earlier used restorations were unaesthetic and the use was limited to posterior teeth. Over the last two decade higher aesthetic standard is expected by parents for the restoration of children's scariest teeth. Esthetic full coverage restorations are available for anterior and posterior primary teeth, which preserve the functions of primary teeth until they exfoliate.²

DISCUSSION :

Dental aesthetics and the preservation of the anterior teeth are crucial factors that can significantly impact the proper psychological development of children from a very young age, especially as they engage in social interactions with their peers. This is evident in the evolving trend where the emphasis on aesthetics, along with function, is becoming more pronounced in the realm of restoring primary teeth. This shift in demand has led to notable changes in the market, particularly in the gradual departure from conventional stainless-steel crowns. In response to this burgeoning preference for aesthetics, the market has witnessed the emergence of prefabricated zirconia crowns, such as NuSmile, Cheng Crowns, and Kinder Crowns, which are crafted from yttrium-stabilised zirconia through either milling or injection moulding processes. Additionally, hybrid resin polymer Bioflex crowns have also been introduced to cater to this growing demand. Each type of crown, be it zirconia or Bioflex, comes with its own set of advantages and limitations that need to be carefully considered.

TYPES OF ANTERIOR AESTHETIC CROWNS

1) OPEN-STAINLESS STEEL CROWN

These are SSC with fillers and composite facing made of di-methacrylate resin. These crowns are aesthetically good (the metal shows through the composite facing), very durable, retentive and cost effective. This is time consuming as it involves a two-step (crown cementation/composite facing). Placement of composite facing may be compromised when gingival bleeding or moisture is present or when the child exhibits less than ideal cooperation. Criteria for Selection: Durability needed accident prone child or severe bruxism evident severely decayed teeth (Fig 1a).³

2) PRE-VENEERED STAINLESS STEEL CROWN

Stainless steel veneered with tooth colored material (composite or dimethyl acrylate resin for their facing) is made of thermoplastic material. These are esthetically satisfying, require short operating time, have the durability of a steel crown, less moisture sensitive during placement than composite strip crowns. They are three times more cost effective than SSC, strip crown and polycarbonate crowns.

The demerits of these crowns include loss of veneer facing may occur Significant removal of tooth structure, difficult to recontour and reshape and limited shades, the tooth is adjusted to fit the crown, rather than adjusting the crown to fit the tooth as crimping is limited to lingual surfaces and not closely adapted to tooth, veneering placed over these crowns is sensitive to heat sterilization, which might weaken the bond. It is ideal when esthetics is major concern, when hemorrhage difficult to control⁴, and patient is willing to pay more (Fig 1b).⁴

3) JAVA CROWN (ALUMINUM VENEERED TOOTH-COLORED MATERIAL)

Made of heavy gauzealuminium instead of stainless steel. They are coated with tooth coloured synthetic epoxy polymer i.e., polytetrafluoro ethylene. The merits of these crowns include universal anatomy so that they can be used on either side. In contrast to preveneered stainless steel crown, it is easy to cut and crimp, without chipping or peeling. It can be easily repaired, as composite can be easily added. Their demerits include less durability and cannot with stand heavy occlusal forces. The tooth-colored coating often wears off on the occlusal surface. They are mostly used in children with behavior management problem (Fig 1c).⁵

4) ZIRCONIA CROWNS

Yttrium oxide partially stabilized zirconia (monoclinic or monolithic zirconia) is the material used for their fabrication. Maintains natural aesthetic with strength nine times harder than natural teeth, easy to place and offer superior durability, short chairside time, easily autoclaved without causing any change in colour or structural integrity, high durability needed as inactive accident-prone patient or severe bruxism. These crowns are highly expensive, can cause occlusal wear to antagonist tooth and are non-crimpable. EZPedo, ZirconiaKinder Krowns, Chengcrowns zirconia are examples of them (Fig 1d).⁶

5) POLYCARBONATE CROWNS:

Polycarbonate crowns are heat-moulded acrylic resin shells that are adapted to teeth with self-cured acrylic resin, polymer chain of bisphenol- a carbonate. The advantages of these crowns include natural translucency, aesthetically acceptable, less chair side time, improved retention

and flexibility, better adaptability, easy to trim and easy handling properties. The drawbacks of these crowns are poor retention and breakage and discoloration. These crowns are prone to occlusal wear, limited choice of shade and they look artificial in the mouth. Used in cases where there is adequate tooth structure, child is not highly prone to trauma, and, gingival haemorrhage is controllable(Fig 1e).⁷

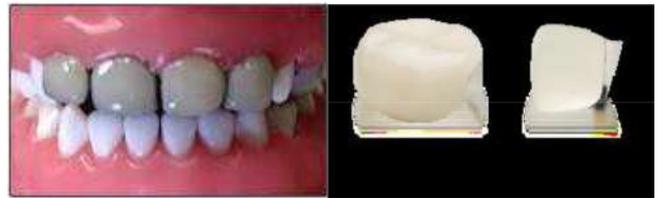


Fig : 1 (a,b,c,d,e)

6) STRIPCROWNS:

Strip crowns are transparent plastic crown forms made up of cellulose acetate filled with composite material. They are simple to fit and trim and removal is fast and easy. They easily match the shades of natural dentition and leaves smooth shiny surface, easy shade control with composite with superior aesthetics. These crowns are easy to repair and high level of parental and patient satisfaction is achieved with them. The strip crowns are highly technique sensitive, and, adequate tooth structure is

required for their fabrication. Lapses in patient selection, difficult for isolation, tooth preparation, and resin placement can lead to failure. Cellulose acetate material is prone to slump and deform during storage (Fig 2a).

7) PEDOJACKET CROWNS:

Pedo-jacket crowns are made up of tooth-colored polyester material and is filled with a resin material like purified terephthalic acid or its dimethyl ester dimethyl terephthalate monoethylene glycol. They are easily sized and trimmed with scissors. The demerits of these crowns are they come in one shade, which is very white, so matching the adjacent, non-restored teeth is difficult (Fig 2b).

8) BIOLOGIC CROWN:

Bonded natural teeth or its fragment is called biologic crown. Autogenous or donated extracted teeth can be used like these. The advantages of these crowns include preservation of tooth structure, retention/mastication is satisfactory, economical, prevention of wear and no need of complex material resources. Long clinical appointments, laborious technique are required for their bonding. Also the sterilization part is also difficult. Possibility of fracture or degradation between the margins of the fragment and the tooth surface is another drawback of these crowns. Indicated when tooth or fractured fragment is available or can also be obtained from tooth bank, cooperative child, esthetic is not a great concern and hemorrhage is controllable (Fig 2c).

9) COMPOSITE SHELL CROWN:

The crowns are prepared with composite material by indirect method. The advantages of these crowns are less chair side time, no need of trimming or crimping during clinical procedure,

and is less technique/moisture sensitive as compared to strip crowns. It is a two visit procedure which needs lab support. This can be done in a less cooperative child, and, where hemorrhage is difficult to control (Fig 2d).

10) LIFE-LIKE PEDIATRIC CROWNS:

These crowns are made up of innovative ceramics. They are highly durable and aesthetically translucent, stable in color, does not stain or discolor but highly expensive.

11) BIOFLEX CROWNS:

Bioflex crowns are made up of hybrid resin polymer. They improve patient satisfaction and clinical performance with super flexibility, more adaptability, easy to prepare, and is a faster technique for full coronal restorations. They are not recommended in Hall Technique, bruxism, and are manipulated by crimping. Tooth preparation and handling properties very similar to stainless steel crowns, saving chair side time (Fig 2e).⁸

12) EDELWEISS PEDIATRIC CROWNS:

Edelweiss pediatric crowns are made of a laser sintered barium glass, which makes them both highly antibacterial and plaque resistant. These crowns are biocompatible; they have the same abrasion as natural tooth; hence the edelweiss pediatric crown does not damage the antagonist tooth. The unique vitrification process makes the edelweiss pediatric crown highly esthetic with optical properties similar to that of enamel. The incorporation of zinc oxide nano particles makes this product uniquely antibacterial and therefore, highly plaque-resistant. The mesial and distal margins of the edelweiss pediatric crown follow the natural gingival-line of the milk teeth minimizing excessive tooth reduction. These pre-fabricated, bio-esthetical morphology permits a quick and safe

treatment with maximum esthetic results. In a single appointment with the edelweiss pediatric crown, the treatment can be completed is minimally-invasive with a perfect occlusion (Fig 2f).⁹



Fig : 2 (a,b,c,d,e,f)

CONCLUSION

The selection of a suitable restorative technique hinges on a variety of factors, including the clinician's preferences, parental aesthetic concerns, cost considerations, and the child's behavior, all of which can inevitably impact the final outcome of the restoration. Looking ahead, advancements in dental technology hold promise for enhancing patient satisfaction and streamlining treatment processes for children. Innovations such as tooth size scanning and the precise fabrication of esthetic crowns boasting a comprehensive array of beneficial properties are poised to revolutionize the field, reducing the trauma associated with dental procedures in young patients and saving valuable time for both clinicians and families alike.

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OFFICE ADDRESS

Dr. Premjith S.

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Attingal P.O., Trivandrum District-695101
Mob : 📞 9847240328, 8075070983
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HOW TO BECOME A MEMBER?

Apply to the Hon. Secretary, IDA HOPE through the branch representative with

1. Completely filled application in the prescribed form attested by the branch secretary /representative
2. Admission fee (depending on age) taken as DD/ NEFT in favour of IDA HOPE Payable at Attingal or Account transfer (proof of transfer compulsory)
3. Two recent passport size photographs
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5. Updated Dental Council Registration copy
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New memberships stops at the age of 50 (as on 1st April of current year)

Who can become a member of IDA HOPE?

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- Valid membership in any local branch in IDA Kerala State certified by Branch Secretary.
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Started as PPS in 2002
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SSS Social Security Scheme **PPS** Professional Protection Scheme

MEMBERSHIP STRENGTH



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Social Security (Death/Total Permanent Disability)
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Professional protection
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- **Extended Professional Indemnity cover of Rs. 25 Lakhs to 2 crores.**
 - **Clinic & Residence Insurance against natural calamities-Fire, Floods, Burglary, Theft, Vandalish etc.**
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 - **New Public liability cover**
- RENEWAL - JULY 10**

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LEGAL AID to the members for cases that may arise during the course of their professional practice. The coverage for the new members starts **one month** after the acceptance of the complete documents including membership fee by the Hon. Secretary. Takes up Dento - Legal cases of HOPE members from the first stage itself - Lawyer's Notice. Engages and gets advice and support of Advocate Pays Advocate's / Legal fee and other expenses. Fights out the case in Forum / Court Pays the compensation amount, if awarded
For Legal Assistance Contact **Dr. Satheesh K Joseph**, Vice Chairman-Legal Cell **Mob 9447141008**

SOCIAL SECURITY

- Supporting the family in the event of **Death / Total Permanent Disability** of a member.
 - The contribution to the family (**Fraternity Contribution**) is collected from the members of the scheme @ **Rs. 500** per claim in a year.
 - The coverage for the new members Starts **one year** after the acceptance of the complete documents including membership fee by the Hon. Secretary.
- Dr. Anwar M Ali** Vice Chairman- Social Security **Mob: 9446354333**

HOPE MEDI

Tailor Made Group Medical Insurance Policy for IDA Hope Members.

-  For HOPE members
-  No Medical Checkup Needed
-  Lowest Premium in the Market
-  Pre-existing Illness Covered
-  Add Spouse, Kids & Parents
-  Cashless Facility Available

100% claim benefit for IDA KSB Members



SUPER TOP-UP

-  Super Top-Up plan offers medical cover when a single or multiple Claim amount Exceeds the threshold limit as chosen by you.
-  Super Top-Up plan would consider the total of all bills that are submitted, regardless whether they are for a single event or multiple events, but those bills should be within the Super Top-up policy period.



UNIQUE TO HOPE MEDI

- Parents of primary members are also covered
- No age limits for parents
- No check up tests prior to joining
- Pre existing illness of parents also covered* (after 1 year for new joining)
- Additional expenses bound to occur for treatment in higher centers also covered*

HOPE MEDI Claims

Claim Management Guidelines- Reimbursement

For reimbursement of claims, claim form, discharge summary, discharge bill (summary and detailed) from the hospital, medical certificate, investigation reports etc., should be submitted to TPA through M/s Jubilee Insurance Brokers **within 15 days of discharge from hospital.**

**In emergency contact:
Hon. Secretary IDA HOPE
@9847240328**

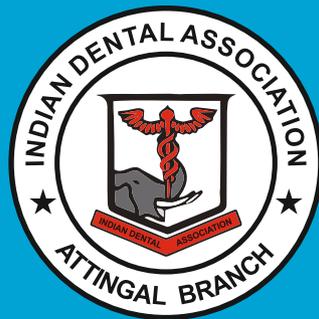
HOPE MEDI-HIGHLIGHTS

- All HOPE members are automatically eligible
- Tailor-made policy for US, 4th term running with minimum glitches and complaints
- No age limit for joining
- No medical checkups prior to joining
- All pre existing illness covered for members and after one year for family
- No additional premium for pre existing illnesses
- Newborn baby cover from day 1 without any additional premium*
- Cashless treatment facility available*
- Standard treatment charge reimbursed*
- Premium subject to revision each year in accordance to cash out flow
- Policy premium in shared and hence the lowest figure quoted
- Minimum exclusion applicable for payment denial
- Premium paid is eligible for income tax exemption under section 80D.

RENEWAL-30th SEPTEMBER

Getting Hospitalised??

Contact:
Jubilee Insurance Broking Services
Rahul R: 7736810082
Jomcy George : 9544157066



IMPRESSIONS

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