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Evaluation of Diagnostic Efficacy of Improved Interproximal Program and Bitewing Program in Proximal Caries Detection- An Extraoral Radiographic Comparative Study

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Abstract

Background: To look for an alternative to intraoral bitewing radiographs when the intraoral placement of film is not feasible or multiple teeth have to be screened. **Objectives:** A study to evaluate and compare the efficacy of improved interproximal and bitewing programs for detection of proximal caries Planmeca ProMax was conducted. **Materials and Methods:** Fifty patients who were screened for proximal caries and confirmed with intraoral bitewing radiography were subjected to improved interproximal program and bitewing program in Planmeca ProMax (Planmeca Oy, Helsinki, Finland) after obtaining informed consent. These radiographs were evaluated by three observers. Intra- and interclass correlation was done to check reliability of the observers, and ROC analysis was done to evaluate the diagnostic accuracy. Critical ratio analysis was done to know the significance. **Results:** Both improved interproximal program and bitewing programs have similar diagnostic efficacy. ROC curve area of improved interproximal program was 0.833 while bitewing program showed 0.878. Bitewing program showed specificity value of 76% compared to 67% in improved interproximal program while both were equally sensitive. **Conclusion:** Both bitewing program and improved interproximal program are highly sensitive in detecting proximal caries when compared to intraoral bitewing radiography which is still considered the gold standard in diagnosis of an interproximal caries.

Keywords: Bitewing program, improved interproximal program, orthopantomograph, planmeca ProMax

INTRODUCTION

Since the density of the proximal surface is large and mineralization is less, it is quite difficult to identify an interproximal caries occurring in the early stages.^[1] The conventional intra-oral bitewing technique is still considered ideal in proximal caries and alveolar bone loss detection due to its projection geometry and better image resolution. Panoramic radiography can be opted to reduce patient discomfort and radiation dose if multiple teeth have to be radiographed compared to intraoral. Panoramic radiography alone is considered inferior to bitewing radiography in the diagnosis of proximal caries due to its lesser resolution of structures, unequal magnification, and geometric distortion and proximal overlap.^[2,3] The newer panoramic machines incorporate programs like improved interproximal and bitewing programs that open the contact points of the premolars

so that interproximal carious lesions are visible on a panoramic image. Planmeca machine uses SCARA technology which provides interproximal separation between contacts.^[4]

This study evaluated and compared the efficacy of improved interproximal program and bitewing program in the detection of proximal caries keeping intraoral bitewing as gold standard.

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Dysgeusia: A Misdiagnosed Case of an Early Manifestation of Varicella-Zoster Infection

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Abstract

Bitter taste dysgeusia is a rare symptom where patients experience all foods as bitter. While its cause is still unknown, it has been increasingly reported in infections. The altered taste sensation associated with herpes zoster infection is not uncommon. However, it is rare in primary varicella infections. In this case report, we present what we believe to be the first case of bitter taste dysgeusia presenting as a prodromal symptom in primary varicella zoster infection.

Keywords: Bitter taste, chicken pox, dysgeusia

INTRODUCTION

Humans can detect and distinguish the five basic taste qualities—salty, sour, sweet, bitter, and umami. Out of these, the bitter taste is the most unpleasant. According to Robert J. Lee and Noam A Cohen, bitterness is perceived on the tongue and throughout the body, where they defend against microbial invaders.^[1]

Varicella zoster virus (VZV) is an exclusively human neurotropic alpha-herpesvirus. Varicella is characterized by fever concurrent with a self-limiting rash on the skin and sometimes mucosa. Headache, malaise, and loss of appetite are also attributed to VZV.^[2] Oral manifestations like dysgeusia have been less widely investigated. Here, we present a case in which an atypical initial presentation of bitter taste dysgeusia later developed into chickenpox.

CASE REPORT

A general physician referred a 41-year-old-woman without any medical history with a complaint of abnormal bitter taste sensation in the oral cavity. A general examination revealed generalized pallor; however, her vitals were normal. She had no history of weight loss or anorexia, no eating disorder, and did not crave unusual foodstuff. Her cranial nerve examination showed no abnormalities. The salivary flow test was normal. A tongue smear test showed no evidence of Candida infection.

Laboratory investigations revealed a normal complete blood count, serum vitamin B12 folate, and zinc level of 65 mcg/dl. Since zinc deficiency is associated with dysgeusia, she has empirically prescribed a 50 mg zinc sulfate capsule daily for two months and was encouraged to have a zinc-rich diet. She returned 5 days later with intense throat pain and a bitter taste. On general examination, multiple vesicles were noticed on the ears, nose, and nape of the neck, with itching. An antihistamine was prescribed, suspecting an allergic reaction to zinc, but the patient later developed multiple vesicles with a fever. She was advised to consult a general physician. She was diagnosed with varicella zoster infection, for which she was prescribed antivirals and antipyretic drugs, leading to the resolution of the lesion with no further complications.

DISCUSSION

Dental practitioners are often the first clinicians to be presented with complaints about changes in taste. This raises a problem in terms of appropriate evaluative responses. Local factors

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Systematic Reviews and Meta-Analysis

Antibiotic Prophylaxis Before Invasive Dental Procedures for Patients at High Risk of Infective Endocarditis - A Systematic Review

Abstract

Background: Clinical use of antibiotics prophylaxis (AP) for preventing infective endocarditis (IE) after invasive dental procedures is controversial. Expert consensus guidelines are inconsistent, either restricting its use to high-risk individuals or advising its use again. **Objectives:** To determine whether there is a genuine need for AP to prevent IE in high-risk patients undergoing invasive dental procedures. **Methods:** Online search was performed on PubMed, Science Direct, British Dental Journal and Cochrane Register of Controlled Trials. The methodological quality of each study was assessed using the Cochrane Handbook for Systematic Reviews of Interventions. **Results:** Seventeen (17) clinical trials were included in the final analysis recruiting 2,410 patients (AP = 1,366; placebo = 1,044). Bacteraemia was detected in 302 AP patients (22.1%) and 362 placebo patients (34.7%). AP reduced the risk of bacteraemia by 49% (risk ratio: 0.51; 95% CI; 0.45 to 0.58; $P = 0.0001$). **Conclusion:** Although using AP for IE may be pragmatic and justified for high-risk patients undergoing invasive dental procedures, the evidence is inconclusive because post-procedural bacteraemia may not be a good surrogate marker for IE. Moreover, trials investigating the direct association between AP and IE are lacking due to low disease prevalence and high-cost challenges.

Keywords: Antibiotic prophylaxis, bacterial endocarditis, infective endocarditis, invasive dental procedure

Introduction

Infective endocarditis (IE) is a cardiac condition characterised by infection of the endocardial surface of the heart, which may involve the mural endocardium, one or more heart valves, or a septal defect.^[1] It is a low prevalent disease but with high mortality and morbidity. The overall incidence of IE in the general population ranges between 1 and 5 per 100,000 person years.^[2] Its intracardiac complications include severe valvular insufficiency, which can result in intractable congestive heart failure (HF) and myocardial abscesses.^[3] The main aetiological agent of IE is bacteraemia, although the presence of fungi and other pathogens in the bloodstream can also be causative. Normally, bacteria cannot adhere to the normal smooth endocardial lining unless it is damaged, which can occur in the presence of certain types of congenital and acquired structural heart diseases or valve surgery. The damage causes the release of substances, including tissue factors

and cytokines, leading to the formation of a platelet-fibrin thrombus (also known as non-bacterial thrombotic endocarditis) to which bacteria in the bloodstream can adhere and colonise to cause IE.^[1] Thus, individuals with damaged endocardium and high loads of bacteria in their blood are at the highest risk of developing IE.

Oral Bacteria and IE

The link between oral bacteria and IE has been known for decades and is a cause of concern for dentists, patients, and cardiologists. The oral microbiota is extremely diverse but non-uniformly spread throughout the oral cavity. The maximum concentration occurs in bacterial plaque, estimated at 10^{11} and 10^{12} microorganisms per gram of wet weight, although the high concentration may also occur at the back of the tongue, cheek and palatal mucosa.^[4] More than 700 bacterial species have been isolated from the oral cavity, but the usual candidates are 20 species, with streptococci of the viridans group (mostly

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Research article

Patients' perception of gustatory changes after lower molar extractions

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ABSTRACT

Introduction and Aim: Gustatory changes in the form of loss of taste or alteration of taste or lingual paresthesia are often encountered post-extraction of molar teeth. The aim of this study was to assess patients' perception of gustatory changes/taste alterations following lower molar extractions in female patients attending the OPD (dentistry-clinics) at College of Dentistry, King Khalid University, Abha, Saudi Arabia.

Materials and Methods: Thirty consecutive new female adult patients indicated for extraction due to grossly decayed mandibular molars between the age of 19-45 were included in the study. These patients were evaluated using a self-administered interview to assess the lingual tactile and gustatory function impairments immediately after surgical procedures/extraction involving the lower molar region. They were re-evaluated seven days and one month after the surgical procedure. ANOVA for repeated measures was used to assess the statistical difference between patient responses at baseline (before the procedure), seven days, and one month after the surgical procedure. Tukey HSD post hoc multiple comparisons were made to find the group that is significantly different from others.

Results: There were no statistically significant differences between the responses at baseline, seven days, and one month after the surgical procedure concerning all the questions asked except Q2 and Q7 that dealt with the presence of tingling sensation on the tongue and ability to continue with their usual diet after the dental procedure, respectively.

Conclusion: There was only a transient change in a small proportion of patients in the lingual tactile and gustatory function after surgical extraction of mandibular molars, which was self-limiting and resolved by one month postoperatively.

Keywords: Extraction; molar; perception; surgery; taste.

INTRODUCTION

Extraction of molars is one of the most frequently performed procedures in oral and maxillofacial surgery. It could be due to many reasons such as dental caries, periodontal disease, fracture, or impacted dental arch position. Intraoperative and postoperative complications associated with this surgical procedure include pain, swelling, tooth-fracture, fracture of the tuberosity, injury to an adjacent tooth, immediate and delayed hemorrhage, gustatory impairment, and other sensory deficits due to peripheral nerve damage (1).

The special sensory innervation of the anterior two-thirds of the tongue is by chorda tympani (CN VII), and general sensory is by the lingual nerve (CN V₃), while the posterior third is by glossopharyngeal nerve (CN IX) and internal laryngeal nerve (CN X). Gustatory changes in the form of loss of taste (ageusia) or alteration of taste (dysgeusia), or lingual paresthesia are often due to the proximity of the chorda tympani nerve and lingual nerve to the surgical site. Retraction of the lingual flap, extraction of

unerupted impacted molars, increasing age, type of impaction, surgical technique used, surgeons' experience, and sutures are all predisposing factors for nerve injury during tooth extraction. Pressure from local anesthetic solution after injection (2), intraoperative hemorrhage, or postoperative complications such as swelling, hemorrhage, and perineural inflammation may also cause damage to the lingual nerve (3). Symptoms such as burning sensation of the tongue and dysgeusia also depend on the severity of nerve injury (4, 5).

Authors have reported the prevalence of molar extractions in Saudi Arabia(6),India(7),United States of America, and other countries(8).Furthermore, the varying incidence of gustatory impairment following extraction of molar teeth under local anesthesia has been reported in the literature. Shafer *et al.*, used a standard buccal approach in 17 young patients and found that only 2.9% of patients had a temporary deficit of taste disturbance and lingual nerve deficit up to 6 months after surgery(9).

Prevalence and Risk Factors of Oral Cancer Among Saudi Women: A Systematic Review

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ABSTRACT

Background: Incidence of oral cancer among women has been increasing globally. Consumption of tobacco and alcohol are predominant cause while other factors such as genetics, dietary habits, nature of occupation, and oral hygiene barely determine prevalence of oral cancer among women. Aim of this study was to conduct a systematic review to assess the prevalence and the risk factors of oral cancer among women of Saudi Arabia.

Methods: Search was done with combination of keywords in Google database using English language from 1990 till August 2020 with inclusion criteria includes original research, reviews, and studies focused on the prevalence and risk factors of oral cancer among Saudi Women. Case reports, investigative methods, treatment modalities for oral cancer, and articles that focused on other type of cancers were excluded from the study.

Results: Out of 2,373 articles obtained, nine articles were under final selection after removing duplicates, irrelevant articles for the current topics and after application of inclusion and exclusion criteria. These articles reviewed to identify useful insights about oral cancer among women with special focus on Saudi Arabia.

Conclusion: Observed geographical differentials of oral cancer subject to the development indexes of countries indicate that incidence rate of oral cancer among Saudi women is relatively lower compared to other regions, due to less exposure to cancer-causing risks. Tobacco consumptions particularly smokeless tobacco (Shammah) is the dominant cause among Saudi women, followed by genetic factors. However, a continuous vigilance for oral cancer among women in Saudi Arabia is critically needed for reducing common risks factors of the disease.

Keywords: Alcohol, Oral cancer, Saudi Arabia, Smokeless tobacco, Tobacco, Women.

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INTRODUCTION

Oral cancer is a malignant epithelial tumor involving oral cavity. It is ranked tenth among cancers globally with an incidence rate of 300,000 cases annually. Incidence of oral cancer is increased in women worldwide due to increase in smoking habit and alcohol consumption equivalent to men.¹ Other risk factors may include diet, hormonal, genetic, and viral such as human papilloma virus infection. In Saudi Arabia, It is the third most common cancer next to Lymphoma and Leukemia.² Adults in Saudi Arabia smoke cigarette (15–39.6%) that increases prevalence of oral mucosal precancerous and cancerous lesions followed by Shammah and smokeless tobacco.³

Shammah is a mixture of powdered tobacco with carbonate of lime, oils, and ash, black pepper, and flavoring substances. The use of Shammah in the Kingdom of Saudi Arabia is most commonly practiced in Jizan province, although it is not limited to this province and studies showed there is a high correlation between the use of Shammah, oral cancer and residency in Jizan province.⁴

The trend of increasing incidence of oral cancer among women could potentially lead serious and life threatening consequences. Gender based studies on various types of cancer have been identified globally, but there are very few studies regarding epidemiology, risk factors, susceptibility, and geographical differentials of oral cancer focused on women.

This Systemic review is conducted to assess the prevalence and associated risk factors of oral cancer in Saudi women.

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MATERIALS AND METHODS

Search Strategy

Electronic database Google Scholar and Pub Med in English language were used for review from the year 1990 till August 2020. Keywords used were “oral cancer,” “squamous cell carcinoma,” “epidemiology,” “risk factors,” “women,” “Saudi Arabia.”

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Assessment of Mandibular Canal Using Cone-Beam Computed Tomography (CBCT) and Its Relevance in Post-Operative Neurosensory Split Osteotomy Setback

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Abstract

Aim: Damage to the inferior alveolar nerve (IAN) during bilateral sagittal split osteotomy (BSSO) causes neurosensory disturbances (NSD) of the lower lip and chin. The study aims to investigate the pre-operative position and course of the mandibular canal using cone-beam computed tomography (CBCT) and orthopantomogram (OPG) and compare if there is any difference in NSD following the BSSO setback procedure.

Materials and methods: This is an observational study. This study was conducted in the Department of Oral and Maxillofacial Surgery, Mar Baselios Dental College, Kothamangalam, from November 2017 to October 2019. Thirty patients undergoing BSSO setbacks are selected based on the inclusion and exclusion criteria and randomly grouped into two groups - group A (15) and study group B (15). OPG was done for both groups as it was required during surgical orthodontic evaluation and preoperative assessment of the mandibular canal was done using CBCT in group B. Neurosensory assessment was done in all the patients and compared the results.

Results: NSD were reported in all the patients on the first postoperative day. The correlation between subjective and objective evaluation showed absolute coincidence but nearly all the patients returned to their presurgical situation within six months in group B and one year in group A who had NSD problems.

Conclusion: From the study, it can be concluded that a CBCT scan is a useful and reliable modality in the pre-operative evaluation of the mandibular canal in patients undergoing BSSO setback procedures, which helps to improve the patient's post-operative care and quality of life.

Categories: Dentistry, Oral Medicine

Keywords: neurosensory disturbances, cbct, inferior alveolar nerve, bssso, bilateral sagittal split osteotomy

Introduction

Bilateral sagittal split osteotomy (BSSO) is the most stereotypical orthognathic surgical treatment for jaw deformity correction [1]. The statement mentioned is unique to this article. While most of the reference articles state that BSSO is one of the 'most common', 'standard procedure', for the treatment of mandibular deformities no article uses the word 'stereotypical' in their text. Although, the literature review does show that BSSO is one of the most widely used and preferred surgical procedures in the treatment of mandibular deformities and hence the statement mentioned in the article seems to agree with the already published articles. The ramus and posterior body of the mandible are divided sagittally in this method, allowing for either setback or advancement. The inferior alveolar nerve (IAN) is at high risk of damage during BSSO with respect to the placement and course of the mandibular canal [1]. Numerous prospective and retrospective investigations show that neurosensory disruption (NSD) occurs 80% to 100% of the time following BSSO [2]. Expertise in the anatomic position and course of the mandibular canal is essential to reducing damage to the IAN during BSSO. Anatomic investigations of the mandibular canal have been conducted, however, they have mostly used human cadaver mandibles [3,4]. Many factors are thought to be responsible for the development of neurosensory disturbances after BSSO, as well as surgical procedures, the extent of mandibular movement, patient age, fixation methods, the type of screws used, surgeon experience, and the timing of postoperative neurosensory evaluation [5]. The literature indicates that planned surgical incision can reduce postoperative edema, pain, speech and chewing problems, and neurosensory disturbances. It also improves patient satisfaction [6].

In our study, cone-beam computed tomography (CBCT) and orthopantomogram (OPG) were used to establish the pre-operative anatomical position of the mandibular canal and the course of the mandibular canal. We also wanted to compare if there is any difference in neurosensory disturbances following the BSSO

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Management of ankyloglossia by functional frenuloplasty using diode laser

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Abstract

Ankyloglossia or tongue-tie is a condition present since birth that results in restricted movement of the tongue due to the attachment of the lingual frenulum. The condition affects breastfeeding, speaking, swallowing, occlusion, and proper tongue posture. Tongue ties vary in degree of severity from mild cases of mucus membrane bands to complete tongue ties where the tongue adheres to the floor of the mouth. Treatment options such as speech therapy, frenotomy, frenectomy have all been suggested in the literature. Surgical correction often causes, bleeding, chances of infection, swelling, and relapse. A systemically healthy 23-year-old male patient who experienced difficulty in speech since childhood was referred for treatment to the dental clinic in September 2020. He was diagnosed with Kotlows class III tongue tie and angles class 3 malocclusion. Orthodontic correction and Functional frenuloplasty using a diode laser was carried out. In conjunction with it, orofacial myofunctional therapy was advised. Follow-up: The surgical procedure was uneventful. The patient was reviewed post-operatively at regular intervals every 3 months to check for relapse. This paper elaborates on the newer modes of diagnosis, orofacial myofunctional therapy, and lingual frenuloplasty with diode laser. This technique will help to overcome all the challenges of conventional tongue-tie treatments providing long-term excellent results.

Keywords:

Ankyloglossia, diode laser, functional frenuloplasty, tongue-tie

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Introduction

The tongue is an important organ, which helps a person in speech and mastication. Proper positioning of the lingual frenum enables the tongue to carry out its functions.^[1] The development of the lingual frenum is guided by a fibrous band of tissue located in the center of the mouth before birth. As the growth progresses, the lingual frenum usually recedes and becomes thin.

There are reports of lingual frenum which does not recede as the growth advances and leads to tongue immobility.^[2,3] This causes ankyloglossia (AG) or tongue-tie. AG can be an isolated finding in routine

clinical examinations in children. There are reports of a few syndromes associated with AG like Ehler-Danlos syndrome, Beckwith-Wiedemann syndrome, Simosa syndrome, X-linked cleft palate, and Orofacial digital syndrome.^[4] There are also reports stating that the use of maternal cocaine increases the risk of AG more than three times.^[5] AG may cause functional issues like:

1. Lingual hypomobility could lead to difficulty in breastfeeding. The inability of a nursing infant to squeeze the nipple against the hard palate can be a potential problem during breastfeeding. The lateral margins of the tongue are raised to form a U-shaped channel that covers the nipple to avoid the leakage of milk to the vestibule of the oral cavity.

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PRIMARY INTRAOSSEOUS CARCINOMAS OF THE JAW: A REPORT OF TWO RARE CASES

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Acknowledgement: The completion of this article could not have been possible without the assistance of so many people whose names may not all be enumerated. Their contribution is sincerely appreciated and gratefully acknowledged. However, I would like to express my gratitude particularly to the following

Dr Ahna Ali Akbar for their endless support, kind and understanding spirit during my case presentation. Above all the great almighty the author of knowledge and wisdom for his countless love.

Abstract

Primary intraosseous carcinoma of the jaw is a rare tumour presumably developing from residues of the odontogenic epithelium. The epithelial lining of odontogenic cysts has the potential to transform into various types of odontogenic tumour. Only a few cases have been reported in the literature with malignant changes in odontogenic cysts. In most cases, the diagnosis is delayed because of nonspecific clinical and radiologic findings, when present, they should alert the clinician to consider potential neoplastic growth within the cystic lining. The frequency of carcinomatous transformation within odontogenic cysts is reported to range from 0.13 to 3%. Knowledge of the clinical, radiographic, and histopathologic features of PIOC allows accurate diagnosis and appropriate treatment of this rare malignancy. Here we report two cases of primary intraosseous carcinoma of the jaw.

Key words: primary intraosseous carcinoma, odontogenic cysts, Residual cyst, Odontogenic keratocyst



Role of artificial intelligence in the diagnosis of COVID-19: A mini review

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ABSTRACT

The ongoing COVID-19 pandemic due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection has resulted in a significant public health care system crisis. This disease has resulted in devastating damage to human lives and significant disruption in economies. Use of “machine-learning” algorithms as tools of artificial intelligence may help identify a suspected or infected individual with an estimation of chances of survival. These algorithms make use of recorded observational data including medical histories, patient demographics as well as any related data on COVID-19.

KEYWORDS: COVID-19; Artificial intelligence; Algorithm; Analysis

1. Introduction

Coronavirus Disease 2019 (COVID-19) has quickly turned into a pandemic involving the whole world with a very high exponential rate of growth and a lesser understood process of disease transmission. This virus stays in one's body with little or nil symptoms, although it may lead to a rapid spread and progressive severity with a fatal variety of pneumonia that has been seen in 2% to 8% of infected individuals[1-3]. The exactness of mortality, disease prevalence as well as dynamics of disease transmission is ill-defined partly due to uniqueness of challenges caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, for example, peak infectivity after or before onset of symptoms and poor understanding of its pathophysiology with multiple organs involvement[4].

The rapid spread of the novel coronavirus-19 (nCOVID-19) all over the world has raised alarms regarding this pandemic. As people continuously try to control the rapidly spreading of the virus, this pandemic has resulted in large numbers of deaths all around this world. Its rapid spreading has overwhelmed healthcare systems due to an acute shortage of important equipments along with a shortage of trained health providers. Also, there are various testing methodologies including reverse transcription-polymerase chain reaction (RT-PCR). The availability of rapid RT-PCR tests, high frequency of false negative results, delays in processing, variations in testing techniques as well as low sensitivity ranging 60%-70% have further resulted in a burden on the healthcare workers.

Computed tomography (CT) provides an insight into pathophysiology of this disease at various stages, its evolution, and detection. Although there are many challenges in diagnosing this disease, expert radiologists have reported a definitive pattern of infection characterized as “ground glass” opacities, round opacities, enlargement of intra-infiltrate vasculature, and greater consolidation which are signs of the progression of severe disease. CT scan can even detect COVID-19 at

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Review

PRIMARY INTRAOSSEOUS CARCINOMA ARISING FROM ODONTOGENIC KERATOCYST

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Dr.Swapna Honwad. *Dr.Sithara

Abstract

Primary intraosseous carcinoma (PIOC), NOS is a rare malignant neoplasm of jaws with poor prognosis. The overall survival rate of an individual is a period of two years, possibly due to a delayed diagnosis. A better understanding of PIOC, NOS allows accurate and early diagnosis of the lesion so that an early and appropriate treatment can be instituted for better prognosis. PIOC, NOS has no initial connection with oral mucosa and usually develops from the residues of the odontogenic epithelium or from an odontogenic cyst or tumour. Studies investigating the clinicopathologic features of PIOC, NOS arising from OKC are extremely rare, Therefore, the aim of this article is to analyse the clinicopathologic characteristics of PIOC, NOS ex OKC and systematically review the literature to improve the understanding of this disease

Key words; Primary intraosseous carcinoma, OKC

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ESTHETIC RECONSTRUCTION WITH CHEEK PLUMPERS: A CASE REPORT

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Abstract

Ageing and long span edentulism is associated with loss of teeth, alveolar ridge resorption, and loss of support and tonicity of facial muscles. This is a great concern in treating completely edentulous patients. Flaccid facial musculature eventually results in sunken cheeks and unesthetic appearance, causing a negative impact on psychological well-being of the patient. Prosthetic rehabilitation of completely edentulous patient with conventional complete denture doesnot confine to replacement of missing teeth, but may require additional support in some instances. The present clinical report exemplifies the use of non-detachable maxillary cheek plumper prosthesis in a completely edentulous patient with sunken cheeks.

Keywords: Cheek Plumpers, Non-Detachable, Lost-Salt Technique

INTRODUCTION

Denture esthetics produced by dental prosthesis affects the delicacy and attractiveness of an individual. Facial esthetics play a major role in an individual's psychosocial and professional life. The loss of oral structures affects the appearance of face by changing the contour of jaw bones, soft tissues & surrounding orofacial musculature. As age progresses, the loss of subcutaneous fat

& elasticity of the tissues causes the cheeks to become slumped.¹ This result in hollowed-out, sunken appearance & exaggeration of wrinkles because of tissue laxity².

When missing teeth is replaced, it is necessary to restore the facial contours. A properly extended and contoured denture flange can adequately support the overlying lips and cheeks. But sometimes, the denture flange doesnot provide adequate support to the facial musculature & requires additional support³.

Cheek plumpers are prosthesis used to enhance the support of sunken cheeks providing better esthetics. Earlier, it was used for improving aesthetics & psychosocial profile of patients affected with Bell's palsy⁴. It can be fabricated either as conventional or detachable type. Conventional cheek plumper is single unit prosthesis with extensions on either side, near the premolar-molar region that supports the cheek. But this design has many drawbacks¹. The external contour of the cheek plumper is not contoured to function in harmony with muscular activity in the region of its incorporation. This leads to frequent dislodgement of denture during speech. It may interfere with masseter muscle and coronoid process of the mandible. Moreover, patients with limited mouth opening have difficulty in insertion and removal of dentures as additional thickness hinders it. The detachable cheek plumper is a separate unit from

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Smartphone addiction and its impact on knowledge, cognitive and psychomotor skills among dental students in India: An observational study

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Abstract:

BACKGROUND: Addictive behavior toward the use of smartphones has turned out to be a commonly present phenomenon in this digital era. An individual's overindulgence in smartphone devices has turned into an obsessive and compulsive disorder. This addiction has been found to influence the physical, social, and psychological wellbeing of the studied population. This observational study aimed to assess smartphone addiction and its impact on knowledge, cognitive, and psychomotor skills in students pursuing dentistry in India.

MATERIALS AND METHODS: This prospective and cross-sectional survey-based study comprised 100 dental undergraduate students who were selected by a random sampling technique. The age range of subjects ranged between 18 and 22 years with equal gender distribution (50 each male and female). A prevalidated questionnaire containing 30 items encompassing five variables, that is, applications related to healthcare, entertainment, shopping, communication, and education were used to assess the response. Based on scores, patients were categorized as addicted or with no addiction. For evaluating the knowledge, cognitive, and psychomotor skills of students, theory-based examinations were held in different subjects as per the semester year of selected students while psychomotor skills were assessed by conducting clinical or preclinical examinations conducted by two separate examiners who following mutual agreement were assigned appropriate scores. All scores were categorized into four grades, that is, from grades I to VI.

RESULTS: Students with smartphone addiction exhibited lower performance in both theory-based and clinical/preclinical assessment examinations with a majority of them scoring grade III or IV.

CONCLUSION: Smartphone addiction reduces the academic knowledge, cognitive, and psychomotor skills of dental students.

Keywords:

Addiction, behavior, cognitive, skill, smartphone, psychomotor

Introduction

Smartphones have evolved into a vital and an integral part of school and college culture. A brief observation of day-to-day collegiate life can show the routine use of smartphones. Its use has both physiological

and psychological impacts. A smartphone is a type of mobile cell phone equipped with an advanced operating software system. It possesses combined characteristics of a personalized computer's operating system combined with essential features that show usefulness for mobile and/or hand-held

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AWARENESS, KNOWLEDGE AND ATTITUDE REGARDING DENTAL IMPLANTS AS A MODE OF REHABILITATION AMONG FINAL YEAR STUDENTS AND INTERNS.

ABSTRACT

Purpose: This study aims to gauge awareness, knowledge and attitude regarding dental implants as a mode of rehabilitation among final year students and interns.

Materials and methods: : This cross-sectional survey was conducted on interns and final year undergraduate dental students from KMCT dental college Kozhikode, by using questionnaire under the approval of the Scientific Research Committee of college in 2022. Hundred interns and final year undergraduates each from college were divided by random selection method. A self-explanatory questionnaire consisting of 15 questions, which assessed the level and source of information regarding implants, was prepared and distributed through Google forms.

Results: There were two hundred students who had filled the questionnaire and were included into the analysis of the result. For the study it was very clear that the respondents are aware of different procedures involved in Dentistry including Implants. Therefore the survey response is from the respondents who are aware and have sufficient basic knowledge about the different procedures involved in Dentistry.

Conclusion: Dental undergraduates are aware of implant treatment as a restorative option in replacing a single missing tooth. : It could not be concluded that knowledge about dental implants increased with increase in academic level. Even at the late-clinical year students gave unsatisfactory responses. There is a need for discussion for introducing a comprehensive implant dentistry curriculum in undergraduate dental education.

Key Words: Implants, Knowledge, Missing Teeth, Undergraduate Awareness, Dental Implants.

INTRODUCTION

The aim of modern dentistry is to restore the patient's teeth to normal function, aesthetics, speech and health. Implant dentistry is unique in possessing the ability to achieve these ideal goals i[1]. The loss or removal of the one or more of the natural teeth results in disabilities in daily activities such as eating, speaking, or leading to social embarrassment. In such conditions, the role of the dental practitioner is very important regarding the choice of the replacement of the teeth [2]ii. . Faramarzi et al. concluded that an acceptable number of patients had heard of dental implants as a treatment option for replacing missing teeth, with dentists

being the main source of information iii[3]. Every patient has the right to know complete information, including benefits, drawbacks, possible risks and complications, financial cost, longevity, and other alternatives to the treatment. Fresh dentists should have a sound knowledge and comprehensive understanding of the implant treatment protocol so that they can appropriately guide their patients [4].iv This study was conducted to ascertain the level of information about dental implants among undergraduate dental students from final year and internship to know whether there is a need to survey the curriculum and teaching materials and methods.

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Mandibular Advancement: Cost Next To Nothing

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Type of Publication: A Case Report

Conflicts of Interest: Nil

Abstract

A case report of a 14 year old girl, with class II division I malocclusion and mandibular deficiency, treated with a modified Mandibular Protraction Appliance type II. Modified MPA type II could be easily made by the operator himself. 20 and 23 gauge stainless steel wires, silver solder and blow torch are needed for its fabrication. Maxillary unit consist of TPA and wires on labial side connecting molar and

premolar/canine band with a circular loop on the distal side of molar band. Mandibular unit consist of a lingual arch and wires on labial side connecting molar and premolar/canine band with a circular loop on the mesial side of premolar/canine band. Two ends of push type coil spring is inserted in to this upper and lower circular loops. Post treatment lateral cephalometric reading showed improvement of SNA, SNB, ANB, remodeling

Corresponding Author: Dr. Naseem K.T, Volume – 4, Issue - 2, Page No. 01 – 09

**A STUDY TO ASSESS AWARENESS OF DENTAL POST-EXTRACTION INSTRUCTIONS
AMONG THE GENERAL POPULATION IN INDIA**

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ABSTRACT

Background: Awareness of post-extraction instruction is essential to avoid any complications and untoward events after the removal of a tooth. Hence the purpose of the study was to assess the knowledge of dental post-extraction instructions among the general public in Kerala.

Materials and methods: A descriptive cross-sectional survey was conducted among the general public in Kerala. 1000 eligible subjects responded to the questionnaire. The questionnaire consisted of participants' demographics (age, gender, and educational level) and the 10 items to assess the knowledge of dental post-extraction instructions. The questionnaire was constructed in Malayalam and English languages by bilingual experts.

The questionnaire responses were collected and analysis was performed. Descriptive statistics, chi-square test, Mann-Whitney and Kruskal-Wallis tests were applied to compare the knowledge across different groups. A level of significance was set at $p < 0.05$.

Results: An overall mean knowledge score of 5.4 was observed among the study participants. An overall mean knowledge score of 5.4 was observed among the study participants. While study subjects with graduate or higher (5.6) educational level showed significantly higher knowledge of post-extraction instructions than those of high school (4.97) and secondary school (4.82) ($p=0.026$).

Conclusion: The study participants from the Kerala region demonstrated adequate knowledge of post-extraction instructions.

Key words: Awareness, dental extraction, post-extraction, instructions, public.

KEYWORDS: Knowledge, oral surgery, post extraction

Review

THE ROLE OF GROWTH FACTORS FOR REGENERATION AROUND TEETH AND DENTAL IMPLANTS

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Dr. Navia George, *Dr. Santhosh V.C, *****Dr. HarishKumar V.V

Abstract

Dental diseases are wide spread in nature and the complexity of damage it causes is a major concern. Many new scientific developments try to limit the damage or restore the health of the individual. Regenerative technology now represents a therapeutic reality applicable to various organic substrates, with the aim of repairing deficient tissues and restoring normal organ function. Of many tissue engineering and regenerative science, growth factor plays a important role in regeneration. Its ability in clinical science puts a promising front and provides cutting edge technology to treat periodontal destruction or any oral problems. An extension of conventional technology is the need of the hour and this provides a great insight in making life better.

Key words; Growth Factors, Regeneration, Teeth, Dental Implants

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MANAGEMENT OF A POLYTRAUMA CASE AT A TERTIARY CARE CENTRE- A CASE REPORT

ABSTRACT

Panfacial bone fractures are defined as facial fractures simultaneously involving the upper, middle, and lower thirds of the face. Fractures of the frontal bone, maxilla, zygomatic complex, nasoethmoid-orbital (NEO) region, and mandible are the most common. Management of such a emergency situation may require a multidisciplinary team including emergency department, neurosurgery and maxillofacial surgery. Here it is a case report of such a case where severe maxillofacial and brain injury managed with a multidisciplinary team approach

Key Words: Panfacial Fracture, Facial Trauma, Sequencing Repair

INTRODUCTION

Traumatic panfacial fracture repair is one of the most complex and challenging reconstructive procedures to perform¹. Restoring occlusion along with anatomic repair of the fracture is a challenge. Along with functional restoration, optimization of anatomical and structural outcome is important. Sequence of repair is always a topic of debate². Sequence of repair should be always customized according to the demand of situation. There is no hard core laws like inside out or outside in

CASE REPORT

A Patient of age 47 years reported to emergency department following a RTA. Patient presented with degloving injury of face with frontal bone exposed with saturation fall and GCS Score 8. No spinal tenderness noted. Patient is immediately intubated by tracheostomy and stabilized. CT taken shows comminuted fracture

of facial bone along with maxillary fracture and maxillary sinus and nasal bone fracture bilaterally. Right zygomatic fracture and right TMJ dislocation noted. Ophthalmology consultation done immediately and poor prognosis of vision is informed. patient is taken immediately to operation theatre for neurosurgery and maxillofacial intervention. Dural repair is managed by neurosurgery followed by frontal bone repair by maxillofacial surgeon. Comminuted frontal bone are arranged and stabilized by Ti mesh and screws. Nasal bones are stabilized with Ti plate screws after reduction of nasal bone and septum. Arch bar fixation of maxilla and mandible done and stabilization of both maxilla and mandible achieved. Occlusion is achieved after reduction of condyle. Layer by closure of soft tissue done after hemostasis achieved.



FIG 1,2 Extensive lacerated wound exposing the frontal bone

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Case Report

A rare case of high-grade non-Hodgkin's lymphoma with oral and multiple extranodal manifestations

ABSTRACT

Lymphomas are a group of malignant diseases affecting the lymphoreticular system. Lymphoma is the second most common neoplasm of the head and neck after squamous cell carcinoma, but the incidence of lymphomas in the oral cavity and orbit is rare. Non-Hodgkin's lymphoma (NHL) is less predictable than Hodgkin's but has a greater predilection to extranodal tissues. Non-Hodgkin's incidence in extranodal sites accounts for about 20% to 30%, but in the oral cavity, its around 0.1% to 5%. The rarity of incidence in the oral cavity and atypical radiographic features diagnosing a lymphoma is quite a challenge for clinicians. Here we describe a case of 31-year-old male patient with high-grade non-Hodgkin's lymphoma involving oral cavity with metastasis to orbit, skeletal structures, testes, liver, pancreas and nasopharynx, which is quite rare.

Keywords: Extranodal tissues, lymphoma, non-Hodgkin's lymphoma, oral cavity

INTRODUCTION

Lymphomas can be simply defined as malignant neoplasms of lymphocytes and their precursor cells. It has been known traditionally to divide lymphomas into Hodgkin's disease (HD) and non-Hodgkin's lymphomas (NHLs) based on their biological, histological, immunophenotypical differences, and clinical behavior patterns.^[1-4]

Lymphoma is the second most common neoplasm of the head and neck after squamous cell carcinoma,^[5] while in the oral cavity it is preceded by squamous cell carcinoma and salivary gland neoplasm.^[5,6] Lymphoma arising within the oral cavity accounts for less than 5% of all oral malignancies, and approximately 85% of the lesions involve the tonsils and the palate.^[6]

Here we are presenting a case of high-grade non-Hodgkin lymphoma with involvement of palate and metastasis to orbit, testes, skeletal structures, liver, pancreas, and nasopharynx which is quite rare.

CASE HISTORY

A 31-year-old gentleman reported to the Department of Maxillofacial Surgery with swelling in the palate bilaterally since 1 month [Figure 1]. He gave a history of root canal treatment done two months back in the upper left back teeth region, following which he noticed the swelling in the palate initially on the same side, which later appeared on the opposite side too. He gave a history of swelling to be small in size, limited to the alveolus, later on extending

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Biofilms- A Never Ending Battle!!

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Abstract:

Microbial communities formed in root canals of teeth constitute the heart of the infected root canal ecosystem, and yet their establishment and development remains challenging to measure and predict. Biofilms are dynamic systems with attributes of both primordial multicellular organisms and represent a protected mode of growth that allows cells to survive. Although there is an initial understanding on the mechanisms of biofilm formation in root canals and its associated resistance to clinical antimicrobial regimens, this topic is still under investigation. A greater understanding of biofilm processes should lead to novel, effective control strategies for endodontic biofilm control and a resulting improvement in patient management.

Keywords:

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I. Introduction

Biofilms are recognized as one of the earliest ecosystems on earth. They are composed of aggregates of microbial cells enclosed in a self-produced matrix adherent to a surface. ⁽¹⁾ According to Ingle, Biofilm can be defined as a sessile multicellular microbial community characterized by cells that are firmly attached to a hard or soft surface and enmeshed in a self-produced matrix of extracellular polymeric substance (EPS), usually polysaccharide. ⁽²⁾ Biofilm mode of growth is advantageous for microorganisms, as they form three-dimensional structured communities with fluid channels for transport of substrate, waste products, and signal molecules. ⁽³⁾

HISTORY

- Anthony van Leeuwenhoek is known as the first biofilm experimenter. He noticed a vast accumulation of microscopic bodies in his own tooth scrapings, which he termed as "animalcules". In a report to the British Royal Society, he quoted, "The number of these animalcules in the scurf of a man's teeth is so many that I believe they exceed the number of men in a kingdom." ⁽⁴⁾
- Few years later, Heukelekian and Heller observed that: "Surfaces enable bacteria to develop in substrates either as bacterial slime or colonial growth attached to surfaces". ⁽⁴⁾
- In 1943, Claude ZoBell described many of the fundamental characteristics of attached microbial communities in seawater. ⁽⁴⁾
- Such communities were described and named "Biofilms" in 1978 by Paul Harremoës a Danish physicist. ⁽⁴⁾
- In 1987, Nair - described and presented the ultrastructural visualization of intracanal microbial flora. ⁽⁵⁾

BASIC CRITERIA FOR A BIOFILM

- Caldwell et al. in 1997 ⁽⁶⁾ highlighted four characteristics of biofilm as follows:
 - Autopoiesis – Must possess the ability to self-organize
 - Homeostasis – Should resist environmental perturbations
 - Synergy – Must be more effective in association than in isolation
 - Communality – Should respond to environmental changes as a unit rather than as single individuals.

STRUCTURE OF BIOFILM

Development and validation of a new prognostic tool for impacted maxillary canines, 'Easy box': A cone-beam computed tomographic study

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Muhammed Shibin P , Shobha Sundareswaran,
Faraj Mohammed and Baby Jisha

Abstract

Objective: To develop a tool to facilitate simple, easy and rapid assessment of the level of difficulty in disimpaction of an impacted canine using cone-beam computed tomography (CBCT).

Design: A cross-sectional study.

Methods: A panel of four experienced orthodontists formulated a questionnaire capable of portraying the limits of a three-dimensional (3D) area around impacted maxillary canines on CBCT images, which would determine the disimpaction difficulty level. In total, 14 experienced orthodontists graded each item in the questionnaire and assigned scores in the range of 0–5. Average scores obtained outlined the limits of a 3D area, within which an impaction was deemed favourable. This area was termed 'Easy box'. The disimpaction difficulty level of 170 impacted maxillary canines was then assessed using 'Easy box' and the existing tool KPG index for convergent validation.

Results: Perfect inter-examiner agreement was obtained as evidenced by Fleiss kappa value of 0.984 for the tool 'Easy box' and 0.948 for the KPG index. There was also perfect agreement between the two methods of assessment (Cohen weighted kappa, $k > 0.86$). The average time taken for assessment using 'Easy box' was 3.3 min compared to 8.8 min for the KPG index.

Conclusion: 'Easy box' proves to be a simple, accurate and rapid assessment tool for the prognostic evaluation of impacted canines using CBCT images. Impacted maxillary canines with cusp tips that lie beyond the limits of the 3D 'Easy box' area with a beta angle greater than 45° was rated to be more difficult to align.

Keywords

maxillary canine impaction, index, Easy box, disimpaction difficulty level, cone-beam computed tomography

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Introduction

Maxillary canines are the second most frequently impacted teeth, with a prevalence in the range of 0.9%–2.2% (Bishara, 1992). Even though its prevalence is low compared to third molars, management of maxillary canine impactions is of utmost importance owing to its contribution towards an aesthetic and stable functional occlusion (Fernandez et al., 1998). The prognosis for alignment of an impacted maxillary canine is affected by various factors such as its relationship with adjacent structures, amount of space available, position, angulation as well as age and cooperation of the patient (McSherry, 1996).

Several authors have developed prognostic indices in order to predict important clinical factors such as treatment duration and disimpaction difficulty level during the diagnostic process (Ericson and Kurol, 1988a; Pitt et al., 2006;

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Review

STEM CELLS IN ORTHODONTICS AND DENTOFACIAL ORTHOPAEDICS

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*Dr Safir N.K.

Abstract

For craniofacial anomalies, SCs have been applied to regenerate hard tissue (such as treatment of alveolar cleft) and soft tissue (such as treatment of hemifacial macrosomia). Several attempts have been done to reconstruct impaired temporomandibular joint. Also, SCs with or without bone scaffolds and growth factors have been used to regenerate bone following distraction osteogenesis of mandibular bone or maxillary expansion. Current evidence shows that SCs also have potential to be used to regenerate infrabony alveolar defects and move the teeth into regenerated areas. Future application of SCs in orthodontics could involve accelerating tooth movement, regenerating resorbed roots and expanding tooth movement limitations. However, evidence supporting these roles is weak and further studies are required to evaluate the possibility of these ideas. In this review current and future applications of stem cells (SCs) in orthodontics and dentofacial orthopedics have been discussed.¹

Key words; Alveolar bone grafting, Dentofacial deformities, Distraction osteogenesis, Orthodontic tooth movement, Root resorption, Stem cells

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Case Report

The lingual versus labial biomechanics – A case report

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ABSTRACT

Lingual orthodontics have stormed the world of orthodontics over the past few years with its esthetic superiority. But apart from its invisibility, this technique has very significant superiority in non extraction line of treatment where space is a requirement. This article is aimed at describing a case report of a 12-year-old girl who with almost 180 degree rotated upper left central incisor with its palatal surface facing labially. With the lingual technique the derotation of rotated incisor was completed. The incisors maintained the axial inclination without disturbing the profile. This proves that apart from the esthetic superiority, the lingual technique has the greatest advantage of its biomechanics in preventing unwanted proclination of anteriors, thus serving as the ultimate choice of treatment in non- extraction treatment.

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1. Introduction

Non extraction philosophy is an erstwhile treatment modality that has been popular ever since the Angle days. One of the significant aspects in this line of treatment is the creation of space. Some of the common methods for space gaining in non extraction method of treatment includes expansion, inter proximal stripping etc. However, in any non extraction method involving labial orthodontics, a small percentage of proclination of anterior teeth is bound to occur. Whatever the measures taken to prevent this unwanted labial flaring, it cannot be totally avoided. Various methods like passive lacebacks, cinching of distal ends and predominant usage of round wires have been suggested by various authors. Though these remedies are useful to some extent, they are not absolutely fail proof in regard to labial movement of anterior teeth.

Biomechanically, specifically, this occurs since the point of application of force on the labial surface is much ahead of the point of center of resistance of the tooth in the antero - posterior dimension. Therefore, the only alternative to prevent this undesirable labial movement is to relocate the

point of force application from labial to lingual/ palatal.

In labial orthodontic technique, when a wire is engaged to the labial bracket, since the point of force application is far labial to the center of resistance, there is a tendency for the tooth to move labially. Similarly, in lingual orthodontics, when wire is engaged to the lingual bracket, since the bracket is more closer to center of resistance, the tendency for proclination is much less. In fact, loosening torque in extraction cases is a common problem in the lingual technique while this is the biggest advantage to non-extraction line of treatment.

2. Case Report

A 12-year-old patient with a mild convex profile, incompetent lips, on intraoral examination exhibited an Angle's Class I molar relation with an almost 180° rotation of 21 with its palatal surface facing labially, reported for orthodontic treatment. (Figure 1)

Cephalometric analysis revealed an orthognathic maxilla, mildly retrognathic mandible, Class II skeletal pattern with almost upright upper and lower incisors (Figure 2). Cephalometrically, the upper incisor to NA angle was 23.5° and the lower incisor to NB angle was

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In vitro Evaluation of Laser vs. Handpiece for Tooth Preparation

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INTRODUCTION

Lasers were initially used in dentistry to replace mechanical cutting and drilling for hard-tissue procedures like caries excavation and cavity preparation. Hibst in addition to Keller was the first to use the Er:YAG laser in dentistry for hard-tissue therapy. Numerous investigators have testified that the Er:YAG laser ablates dental hard tissues further effectually and proficiently than other hard lasers, with less thermal damage to the teeth, exclusively in a wet field along with water spray.^[1-5] Because of the technological issues such as accessibility and laser irradiation operation, clinical usage of the Er:YAG laser for caries eradication

ABSTRACT

Background: The erbium-doped yttrium aluminium garnet (Er:YAG) laser has been revealed to effectively ablate dental hard tissues, and its utilisation to caries eradication and cavity preparation is envisaged. Nevertheless, only a limited research has been performed on the Er:YAG laser's capacity to treat caries. **Aim and Objectives:** The efficiency of caries elimination with an Er:YAG laser *in vitro* was equated to that of traditional mechanical therapy in this study. **Methodology:** The investigation made use of teeth that had suffered from root caries. The Er:YAG laser was used to treat half of each tooth, while the other half was either removed with a conventional bur or left untouched as a control. Each therapy was evaluated in terms of how long it took to remove cavities, histological examinations of decalcified serial sections, scanning electron microscopy (SEM) analyses and the density of the dentin. **Result:** A longer treatment time was required for the Er:YAG laser to completely eradicate carious dentin because of its precise irradiation strategy. However, the Er:YAG laser was effective in removing diseased and softening carious dentin with little heat injury to neighbouring intact dentin, much as the bur treatment. It was also shown that the Er:YAG laser treatment had a lower amount of vibration than other methods. The SEM study of the lased dentin surface revealed characteristic micro-irregularities. **Conclusion:** The Er:YAG laser system appears to be a potential novel technical option for caries therapy, based on our findings.

KEYWORDS: Caries removal, cavity preparation, dentin, Er:YAG laser, root caries

is currently restricted. One of the most common indications for laser therapy appears to be root caries, which occurs frequently in ageing patients and patients having maintenance therapy following periodontal therapy. Its simple cavity structure, non-requirement for caries elimination in the undercut area, makes it suitable for laser therapy, along with lesions in the labial or buccal areas that may be simply treated.^[6-10] "As well, because a root caries cavity does not require a huge

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Knowledge Of Oral Hygiene Aids In School Going Children: An Original Research

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Abstract

The study has the purpose to evaluate the association between data collected from rural and urban schools for dental screening carried out on children and their oral hygiene practices. The dental screening was carried out on a sample of 100 children in the age group of 5-15 year-old, attending the schools and its nearby areas. Demographic data, oral hygiene history and clinical examination results were recorded. Graphical and statistical analysis using Java Stat- 2way contingency table has been performed. On the sample of 100 children the results showed the number of school going students who adopted the practice of twice brushing is 70% of the total number of students as compared to the number of students undergoing dental checkup, which contributes to only 19% of the total students irrespective of rural or urban area. Moreover, in rural areas 86% and in urban area 76% is non users of dental check up. Among non users of dental check up, 78.37% of urban and 76.7% of rural students are having dental disorder. The analysis of the data reflects that children who practice the habit of twice brushing and use of other dental aids generally neglect regular dental checkups but majority of them suffer from dental disorders. The results of this study shows that regular dental check up is equally important for school going children, along with practicing good oral habits like twice brushing and using other dental aids to maintain a healthy oral status.

INTRODUCTION

Oral hygiene refers to maintaining normal and healthy micro flora in our oral cavity and their homeostasis with human host [2]. Oral hygiene plays a crucial role in individual's general health and well being.[1]. Effective oral hygiene is associated with overall health and quality of life of an individual [4]. So it's very important to keep a good social, behavioral and biological health for maintaining a proper oral hygiene [9]. A good oral hygiene helps an individual to communicate effectively, to eat, to speak well and to enjoy a better quality of life [1]. Oral diseases possess a significant health challenges especially among children and adolescents. [11]. Children belonging to age group of 5 to 17 years are more susceptible to dental health problems. [8] Oral diseases cover a wide range of diseases and conditions which includes dental caries, dental plaque, periodontal diseases, tooth loss, oro-dental trauma, gingivitis, noma and so on [5]. Among these the prevalence of dental caries is most common in school going children [1]. Children with compromised oral health not only experience pain but also face several problemlike sleeping disorders which in turn affects their performance in school, change in eating habits, malnutrition leading to decrease in growth and body weight [7]. There are various factors which are responsible for initiating and progressing oral related health problems in children [10]. Some of them are: Environmental factors (premature birth or low birth rate, poor parental education, low socio-economic status), dietary habits (high level of consumption of fermentable carbohydrates) and lack of oral hygiene [12, 13, 14, 16]. Sometimes unequal distribution of oral health professionals and a lack of appropriate health facilities especially in rural areas make it difficult to meet the oral healthcare necessities of the affected people which results in compromised oral health [17]. Therefore proper care of our oral hygiene is important for prevention of these common oral related diseases. Use of various oral hygienic aids and healthy oral practices must be followed to keep our oral cavity healthy.

ORIGINAL RESEARCH

Virtual learning object for developing knowledge about the diagnosis and management of molar incisor hypomineralization-An original research

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ABSTRACT

Aim: To develop, apply, and evaluate a virtual learning object (VLO) for teaching undergraduate dental students and paediatric dentists to diagnose and manage molar incisor hypomineralization (MIH).

Methodology: This controlled educational intervention included 170 undergraduate dental students and 50 paediatric dentists. The student intervention group (VLOG) was trained by the VLO, the control group of students (CG) received a synchronous virtual class, and the group of paediatric dentists (PDG) was trained by the VLO. Pre-test and post-test data were analyzed with a mixed one-way and Tukey's post hoc ANOVA test ($\alpha = 0.05$).

Results: The values obtained in the pre-test were significantly lower than those obtained in the post-test for all groups. The specialists showed a higher level of knowledge before and after the MIH training compared with the students ($p < .001$). Similarly, statistical differences were found in the level of knowledge, which increased after MIH training ($p < .001$). There were no differences between the CG and VLOG.

Conclusion: The level of knowledge increased in all groups after training regardless of the method used. VLOG works similar to traditional teaching approaches.

Keywords: dental; dental enamel hypoplasia; distance; education; health education.

Antimicrobial therapy in dental infections: revisited, reviewed and regulated.

* Harish Kumar V.V., ** Dona Susan Varghese

Abstract

Antibiotics is an integral part of day to day dental and medical practice. The clinician or the surgeon or physician chooses that antimicrobial which is most appropriate, most suitable and most effective for the patient. But what are the criteria which guide the prescriber to select that medicine

which is advised? How does it act against the bacteria? What are its benefits, merits, demerits, advantages and disadvantages? This article deals with basics in antibiotic prescriptions and selection. About ethical prescriptions and about not prescribing when not required.

Keywords: Antibiotics, antimicrobials, bacterial resistance, dosages

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Antibiotics are the drugs that destroy microbes, prevent their multiplication and growth, or prevent their pathogenic action. They differ in their physical, chemical and pharmacological properties as well as in their antibacterial spectrum of activity. They also differ in their mechanism of action as they can be bactericidal or bacteriostatic.

Developing evidences (Fig 1)

When there is a microbial challenge to the periodontium or the oral tissues there is a host immune response, inflammation, infection and it affects the connective tissue first and then the bone. The disease ensues. Bone is lost progressively due to bacterial action, and also due to host response. The clinical signs of the disease develop which makes us prescribe the medication to prepare the patient for the next level of treatment¹.

How to select an Antibiotic?

Confirmation of the presence of infection

- . History
- . Signs and Symptoms
- . Predisposing factors

Identification of the pathogen

- . Collection of infected material
- . Identification of Strains
- . Serology
- . Culture and sensitivity

Selection of presumptive therapy

- . Drug factor
- . Host factor

Monitoring the therapeutic response

- . Clinical assessment
- . Lab tests
- . Assessment of therapeutic failure

Periodontal infections or dental infections are not caused by a single micro-organism. It is a multibacterial infection and the clinician needs to have an idea about the causative pathogens, as well as whether the infection is superficial or deep seated before the prescription.

Drug properties

Pharmacokinetics is what the body does to the drug. Pharmacodynamics is what the drug does to the body and body

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Laser - Burning it for the Better

*Harish Kumar V V, **Sudheer K T, ***Nikhila T M

Abstract

Use of lasers has proved to be a powerful tool for the treatment of reactive lesion in the oral cavity. Gingiva is the commonest site for the reactive Granulomas occurring

in the oral cavity. The article presents two cases of reactive lesions where the growth is removed using the laser ablation procedure with a diode laser.

Keywords: diode lasers, reactive lesions, tissue ablation

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► Introduction

Laser (Light amplification by stimulated emission of radiation) is a monochromatic, collimated, coherent, and intense beam of light produced by stimulated emission of radiation of a light source. When directed at tissues, different interactions result. The absorption, reflection, transmission, and scattering of the laser light vary depending on the wavelength of the laser and the characteristics of the tissue.¹ The recently rapid developments in laser technology and better understanding of bio-interactions of different laser systems have broaden the clinical use of laser in dentistry.²

Lasers carry the advantage of being less invasive and suture less procedures that produce only minimal postoperative pain. Rapid healing can be observed within a few days of treatment, and as blood vessels are sealed, there are both a reduced need for post-surgical dressings and improved haemostasis and coagulation. It also depolarizes nerves, thus reducing post-operative pain, and also destroys many bacterial and viral

colonies that may potentially cause infection. Reduced post-operative discomfort, edema, scarring, and shrinkage have all been associated with its use.³

Gingival growth are majorly reactive and demonstrate tumor like hyperplasia which frequently result from underlying systemic disease, drug induced stimulus, dental plaque and local iatrogenic factors.⁴ Pyogenic granuloma (PG), irritational fibroma, peripheral ossifying fibroma (POF), peripheral giant cell granuloma (PGCG) and inflammatory gingival hyperplasia (IGF) are the frequent reactive lesions of the oral cavity.⁵ The clinical features of these reactive lesions of gingiva appear to reflect the various stages of development since in the early stages they appear red, raw with ulcerated surfaces and bleed on slight touch or spontaneously, while in the late stages, they appear as firm, mature and avascular fibrous growths which may be pedunculated or leaf like in shape or as sessile.⁶

Gingiva is the predominant site followed by lips, tongue,

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OZONE IN PEDIATRIC DENTISTRY- A REVIEW

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Abstract

The therapeutic use of ozone has been suggested for a long time in general dentistry and paediatric dentistry for its antimicrobial, virucidal, disinfectant, and biocompatible properties. Ozone has also anti-inflammatory, analgesic, and immunostimulant properties, and it promotes tissue regeneration. Dental treatment in children is often complex and ozone could support the clinician to enhance the approach and prognosis with young patients, non-cooperant children, or special needs patients. The efficiency of ozone will certainly increase if studies continue to show positive outcomes in a growing number of dental paediatric conditions. This review explores the recent literature of ozone therapy in paediatric dentistry and suggests fields of application for future randomized controlled trials (RCTs).

Keywords: ozone; minimal invasive therapy; paediatric dentistry.

INTRODUCTION

Ozone (O₃) is a natural gaseous molecule made up of three oxygen atoms. The word ozone originates from the Greek word *ozein*, which means odor and was first used in 1840 by German chemist Christian Friedrich Schonbein “The father of ozone therapy.”¹ The stratosphere layer of the atmosphere contains abundance of ozone² and it protects the living organisms from the ultraviolet rays. Ozone is heavier than air and hence it falls downward to earth from such high altitudes.³ It cleanses the air and combines with any pollutant that it comes in contact. This is earth’s natural way of self-cleansing.⁴ Since more than 100 years medical grade ozone has been used as one of the non-medication methods of treatment. The first dentist to use ozone therapy in his practice was E. A. Fisch in the 1930’s, to aid in disinfection and wound healing during dental surgeries.⁵ The main use of ozone in dentistry relies on its antimicrobial properties.⁶ Ozone therapy can be defined as a versatile bio-oxidative therapy in which oxygen/ozone is administered via gas or dissolved in water or oil base to obtain therapeutic benefits.⁷

Applications

Antimicrobial effect of ozone is the most studied. Oxygen/ ozone therapy in dentistry contains a multiplicity of protocols to deal with dental infection. Three fundamental forms of application to oral tissue are applied — (1) ozonated water, (2) ozonated olive oil, and (3) oxygen/ ozone gas. Ozonated water and olive oil have the capacity to entrap and then release oxygen/ozone, an ideal delivery system. These forms of application are used singly or in combination to treat dental disease. Ozone application has various beneficial effects on the oral tissues including remission of various mucosal alterations, enhanced wound healing and increased turnover rate of oral cells. (Table 1)



Review Article

Brief Overview on Probiotics

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ABSTRACT

Probiotics are generally safe to consume, but may cause bacteria-host interactions and side effects in few cases. Bacteria play an essential role in maturation of the intestine, development and control of the immune system. In a newborn, this bacterial flora is transferred from mother through breastfeeding. The imbalances of oral microbial flora are responsible for various oral diseases. Probiotics are live microorganisms that provide health benefits when consumed. Probiotics are generally safe to consume, but may cause bacteria-host interactions and side effects in few cases. The recent researches review that the judicious use of probiotics play a vital role in limiting these diseases. Probiotics are generally safe to consume, but may cause bacteria-host interactions and side effects in few cases.

Keywords: Probiotics; Microbial flora; Oral health

1 INTRODUCTION

The proper functioning of the digestive ecosystem is affected by the microbial load in the diet. The interaction of food and the gut microbiota determines the status of healthy living. Probiotics have been associated with gut health, and focused on the prevention or treatment of gastrointestinal infections and diseases. During the last few years, several authors have suggested that probiotic bacteria originally planned for gut health could also be beneficial to oral health⁽¹⁾. Dental caries and periodontal disease are the most prevalent diseases that affect oral health.

Effective antimicrobial treatment modulates the microbial ecology of dental plaque in a pathogen-targeted manner. The non-selective antibacterial killing cause imbalance of the ecology of normal oral flora and results in persistent pathogenesis⁽²⁾. Eliminating the pathogenic organisms and maintaining the favourable microbes with probiotics for preventing oral diseases has become a recent trend in dentistry.

2 BACTERIA USED AS PROBIOTICS

1. Lactobacillus species
2. Bifidobacterium
3. Streptococcus

2.1 Commercially used probiotics Lactobacilli and Bifidobacterium strains

- *Lactobacillus rhamnosus* GG
- *Lactobacillus johnsonii* Lal
- *Lactobacillus acidophilus* NCFM

2.2 Probiotic organisms⁽³⁾

- *Lactobacillus casei* CRL-43i Gilliland (La-Mo)
- *Lactobacillus reuteri* SD
- *Lactobacillus plantarum* 299V
- *Lactobacillus rhamnosus* 271
- *Lactobacillus casei* DN 014001
- *Lactobacillus casei* Shirota
- *Lactobacillus delbrueckii* subsp bulgaricus 2038
- *Streptococcus thermophilus* 1131

Shear Bond Strength of Glass Ionomer Cement to Er, Cr:YSGG Laser-irradiated Dentin in Primary Teeth: An *In Vitro* Study

Nagarathna Chikkanarasaiah¹, Hrishida P² 

ABSTRACT

Background: The clinical success of restorative materials depends upon a good adhesion with the dentinal surface to resist various dislodging forces acting within the oral cavity. Shear bond strength is the resistance to forces that slides restorative material past tooth structure. The Er, Cr:YSGG pulsed laser irradiation may be used to prepare enamel, dentin, cementum, and bone effectively and cleanly without leaving a smear layer.

Aim: To compare the shear bond strength of GIC to dentin treated with conventional cavity conditioning and laser irradiation methods.

Methodology: Thirty samples of noncarious human primary molars which get exfoliated either due to physiologic reasons or extracted due to any therapeutic reasons were collected for the study. Occlusal enamel was removed and teeth were then embedded in self-cured acrylic mold. All the prepared specimens were disinfected with Chloramine T solution and stored in distilled water for 24 hours at room temperature and teeth were randomly divided into the following groups; group 1: conventional cavity conditioning and type IX GIC restoration, group 2: Er, Cr:YSGG conditioning and type IX GIC restoration. Specimens were then subjected to thermocycling and shear bond strength was evaluated using the Lloyd testing machine.

Statistical analysis: One-way ANOVA test followed by Tukey's HSD *post hoc* analysis was used to compare mean shear bond strength between two study groups. The level of significance [*p*-value] were set at *p* < 0.05.

Result: Conditioning the dentin surface with Er, Cr:YSGG laser can increase the shear bond strength of glass ionomer restoration than conventional cavity conditioning.

Keywords: GIC, LASER, Shear bond strength.

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INTRODUCTION

Glass ionomer cement was developed with the objective to produce a restorative material that would possess the desirable properties of silicate cement and polycarboxylate cement. It was first developed by Wilson and Kent. Even though conventional GIC's has properties that makes them a useful restorative material it has got some drawbacks like low wear resistance, less fracture toughness, increased chance of moisture attack, etc. These limitations of conventional GIC were overcome by GC Fuji IX, which was developed especially for Geriatric and Pediatric patients and possess improved qualities like high strength, better wear resistance, fluoride release, and chemomechanical adhesion. The clinical success of restorative materials depends upon a good adhesion with the dentinal surface to resist various dislodging forces acting within the oral cavity. Among such forces, shear stress is the force that tends to resist the sliding movement of the restoration. It is important for the restorative material clinically because the shearing effect has a major role at the tooth restoration interface. As a result, when shear bond strength is more, better will be the properties of restoration.¹

One of the methods to improve the shear bond strength of GIC is to remove the smear layer.

A smear layer is a layer of debris on tooth surfaces formed when a tooth is cut with rotary or hand instruments. It may consist of bacteria, saliva, blood cells, dentin debris.² Conventional method of cleaning the dentin surface and removing the smear layer is done by using 10% polyacrylic acid prior to the application of GIC-based restorative

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materials. Apart from removing the smear layer, it decalcifies the dentin surface to a depth ranging from 0.5–0.1 μm and creates a mechanical interlocking through the process of hybridization. A chemical bond is created due to the ionic exchange between the carboxylic group of polyacrylic acid and the calcium ions. Thus polyacrylic acid increases the bond between GIC and tooth structure for added longevity.³

One of the latest and improved methods of dentin conditioning is the use of Laser.

Light amplification by stimulated emission of radiation also called Laser, is used in different fields of dentistry. Laser conditioning of enamel or dentin creates an anfractuous surface and open dentin tubules, which are ideal for adhesion.⁴ The surface produced by laser etching is acid-resistant. Irradiation of laser on dental hard

Importance of Breastfeeding in Dentistry – A Dentist Perspective

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Abstract

This article gives a contemplative viewpoint on the importance of breastfeeding in dentistry. Giving a new born solely breast milk, without any other solid or liquid meal, including water or formula, is the definition of breastfeeding, according to the AAP. Since it meets the majority of a baby's nutritional needs when supplied appropriately and in the right way, breast milk is the most useful and perfect diet for a developing new born. This article gives a contemplative viewpoint on the importance of breastfeeding in dentistry. This article gives a contemplative viewpoint on the importance of breastfeeding in dentistry.

Keywords: Breastfeeding, Caries, Malocclusion.

INTRODUCTION

Life in its fullness is enjoyed when Mother Nature is obeyed – Weston Prince

World breastfeeding week is an annual celebration which is held every year from 1 to August 7 in more than 120 countries. Every year there goes for a theme too. The theme of world breastfeeding week 2020 is support breastfeeding for healthier planet. Along with this, WHO and UNICEF are calling on government to protect and promote women's access to skilled breastfeeding counseling a critical component of breastfeeding support.

According to AAP exclusive, breastfeeding defined as giving infant only breast milk – no water, no formula, and no other solid or liquid food. It is the norm against which all alternative feeding methods should be compared.

Breast milk is the most ideal and valuable food for the growing infant since it suffices most of the nutritional requirements if given adequately and in appropriate manner. However, anecdotal reports suggest that the incidence of breastfeeding is declining in almost all parts of the world probably due to increasing modernization, introduction of artificial feeds, and early initiation of complimentary feeds.

Dentist engages themselves in new roles as advocates of health promotion and disease prevention beyond oral cavity. Hence, as a dentist, we can also embrace the role of counselor regarding health benefits associated with breastfeeding giving extra

emphasis on oral health which often remains unexplored. This short communication throw some light in regard to importance of breastfeeding from dentist perspective.^[1]

DISCUSSION

1. What is the process of breastfeeding?
As the baby suckles, a wave passes along the tongue from front to back, pressing the teat against the hard palate, and pressing milk out of the sinuses into the baby's mouth from where he or she swallows it. The baby uses suction mainly to stretch out the breast tissue and to hold it in his or her mouth. The oxytocin reflex makes the breast milk flow along the ducts, and the action of the baby's tongue presses the milk from the ducts into the baby's mouth. When a baby is well attached his mouth and tongue do not rub or traumatize the skin of the nipple and areola. Suckling is comfortable and often pleasurable for the mother. She does not feel pain.^[1]
2. What are the recommended infant and young child feeding practices?

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Comparative evaluation of efficacy of three different denture cleansing methods in reducing *Candida albicans* count in removable partial denture wearers: A randomized controlled trial

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Abstract

Aims: The study aims to find out the best possible method of cleaning the removable partial denture (RPD) by evaluating the *Candida* count limiting ability in RPD users using three different cleaning methods.

Settings and Design: The present study is randomized controlled trial. Three groups were formed with 20 participants in each. The groups were Group 1 RPD cleansing done using sterile saline and denture brush (negative control group), Group 2 RPD cleansing done using soap and denture brush and Group 3 RPD cleansing done using denture cleansing tablet and denture brush.

Materials and Methods: A baseline data and 15 days' postinsertion data of *Candida* count was recorded using swab collection, from the RPDs given. The swab was collected, cultured, and incubated using standard methods. Once *Candida* was identified using Sabouraud's dextrose agar, *Candida albicans* was further confirmed using germ tube test and cornmeal agar.

Statistical Analysis Used: The analysis was done using SPSS software (IBM Corp. Released 2010. IBM SPSS Statistics for Windows, Version 19.0. Armonk, NY: IBM Corp.). Paired *t*-test, was used to compare the number of colonies pre and postintervention. The difference between the groups was analyzed using one-way analysis of variance (ANOVA) and Tukey's *post hoc* analysis.

Results: The comparison of baseline data and postintervention data within each group using paired *t* test demonstrated statistically significant values; $P = 0.046$ and 0.000 in Group 2 and 3 respectively. The difference between the *Candida* colonies in three different groups after the intervention (15 Days) was analyzed using analysis of variance and found to be statistically significant with $P = 0.004$. Tukey's *post hoc* analysis was used to analyze the difference between the groups. It was concurred that there was a statistically significant difference between all three groups, but the difference in the mean was highest between the Group 1 and 3 (1210.99).

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Evaluation Of Stress Among Undergraduate Students: An Original Research

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Abstract

Aim: The aim of the research on evaluation of stress among undergraduate dental students would be to investigate the prevalence, sources, and effects of stress on the mental and physical health of dental students.

Objective: To determine the prevalence of stress among undergraduate dental students. To identify the sources of stress among undergraduate dental students, including academic, clinical, personal, and financial factors. To assess the impact of stress on the mental and physical health of undergraduate dental students. To investigate coping mechanisms that undergraduate dental students use to deal with stress.

Methodology: The research design would involve a cross-sectional survey that aims to investigate the prevalence, sources, and effects of stress among undergraduate dental students. The study would use a self-administered questionnaire to collect data from a convenient sample of undergraduate dental students.

Result: The results of the evaluation of stress among undergraduate dental students showed that stress is a prevalent experience among this population. Of the 210 participants in the study, 89% reported experiencing stress during their dental training. Academic factors were the most commonly reported source of stress, with 80% of participants reporting academic stress. Clinical factors were also significant sources of stress, with 66% of participants reporting clinical stress.

Conclusion: In conclusion, this research provides valuable insights into the experiences of undergraduate dental students regarding stress. The findings underscore the need for interventions that can mitigate stress and improve the mental health and wellbeing of dental students. Future research may explore the effectiveness of specific interventions and strategies for managing stress among this population.

Keywords: Dental students, environment, performance, profession, stress

INTRODUCTION

Dental education can be a critical wellspring of stress among dental students, and studies have observed higher levels of stress among dental students than in the all-inclusive community.[1] A large body of literature examining stress in undergraduate dental students has revealed a significant increase in stress that intensifies with student's year of study.[2] Stress is an aftereffect of certain external physical or mental variables that influence a person's physical and mental prosperity.[3] Stress-related symptoms over a long period of time may result in substance abuse and a diminished efficiency at work or learning [4], as well as being negatively related to academic performance and health [5]. Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor

Smile Correction through Lip Repositioning: A Series of Ten Cases

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Abstract

Excessive gingival display is often very disturbing as it is considered unaesthetic by many. Acceptable gingival display is in the range of 2-3 mm, and anything beyond may require surgical procedures for correction. Many of the procedures advocated are extensive and had substantial morbidity associated with it. Here, we present a series of ten cases where excessive gingival display was managed through lip repositioning technique under local anesthesia. All the cases had good prognosis and none of them exhibited recurrence in 6 month follow-up.

Keywords: Gummy smile, Hyperactive muscle, Lip repositioning, Myotomy.

INTRODUCTION

Gummy smile is often considered unaesthetic by patients. Although some amount of gingival display is acceptable, excessive gingival display can be intimidating. A normal gingival display between inferior border of upper lip and gingival margin of the upper central incisors during smile is 1-2 mm. Gingival to lip distance of 4mm or more is considered unattractive by lay people. Excessive gingival display can be due to various reasons. One possible cause is delayed eruption in which gingival fails to complete apical migration. Second possible cause is compensatory eruption of maxillary teeth along with attachment apparatus. Vertical maxillary excess with incompetent lips can cause excessive gingival display. Fourth possibility is forced or exaggerated smile pattern exposing dentition and gingival excessively.^[1]

CASE REPORT

Healthy patients in the age group of 21-35 who reported to our institute with chief complaint of excessive gingival display from year 2018 to 2019 were selected for the procedure. A diagnosis of hyper mobility of lip was made in most of the patients. Selected patients had a gingival display of 4-6 mm. Few cases had moderate maxillary vertical excess. However, proposal for orthognathic surgery was denied and patient preferred a less invasive procedure and informed consent for lip extension procedure was obtained. Total of seven female and three male patients opted for the

procedure. All procedures were done under local anesthesia and patients returned home same day. Regular 6 months to 1 year follow-up was made.

Surgical site was anesthetized from first molar of one side to first molar of other side by local infiltration with local anesthetic solution. Incision outline was marked with surgical marker pen (Figure 1). All patients were demonstrated with planned lip position prior to surgery by suturing. First incision is given at the mucogingival junction and a partial thickness flap is elevated. Second incision is given 10-12 mm above the first incision in the labial mucosa. A strip of partial thickness flap was removed exposing the connective tissue. The first and second incision lines are approximated with simple interrupted sutures after placing the midline suture first, which will maintain the midline as well as the "gull wing" design of the smile (Figure 2). Patients were prescribed with amoxicillin 500 mg TID along with diclofenac 50 mg TID for 5 days. Patient presented with slight pain and increased tension on lips while smiling 1 week postoperatively. Suture removal was done

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Multiple Osteomas of Mandible in a Patient with Gardner's Syndrome - Report of a Case.

Arun George, Sankar Vinod Vichattu, Joy R Das, Atic Thomas, Jinu Elizabeth James

ABSTRACT

Introduction: Osteomas are benign tumors of the bone usually seen in craniofacial bones which arise from either the cortex or medulla. They are usually asymptomatic with slow painless growth. Multiple osteomas are often associated with Gardner's syndrome. Solitary osteomas are typically non syndromic.

Case Presentation: The patient presented with remarkable facial asymmetry following the growth in the mandible. Multiple osteomas were noted which invoked suspicion of a syndrome. On endoscopic evaluation the patient was found to have multiple intestinal polyps, pathognomonic for Gardner's syndrome.

Management and prognosis: The lesion was surgically removed under local anaesthesia, as an excisional biopsy and the asymmetry was rectified. Histopathologic examination revealed it to be ivory osteoma with dense compact bone and less marrow spaces. The jaw lesions would precede the development of colonic polyps and therefore may contribute to early diagnosis of Gardner's syndrome. There is also a chance of malignant evolution associated with the polyps.

Conclusion: People with the condition have a higher risk of developing other family adenomatous polyp (FAP) related cancers including pancreatic cancer and liver cancer. The patient should be in close follow up.

Keywords: Benign, Facial asymmetry, FAP, Gardner's Syndrome, Intestinal polyps, Malignancy

Oral and Maxillofacial Pathology Journal (2023): <https://www.ompj.org/archives>

INTRODUCTION

Osteoma is a benign, slow growing, painless growth that is usually seen in bones formed by membranous ossification. They usually develop on the surface of the craniofacial skeleton and have a propensity to involve the bones of the paranasal and frontal sinuses and the orbit where they are found in 1% to 3% of the adult population. Rarely, osteomas are located in the vertebral column and the appendicular skeleton where they develop on the surfaces of long tubular bones.¹ They are usually composed of compact mature bone. They are mostly seen in the skull, facial and jaw bones with a predilection to paranasal sinuses. When seen as multiple osteomas in the craniofacial skeleton, they raise a strong suspicion of Gardner's syndrome, component of Gardner's syndrome. Gardner's syndrome is a combination of intestinal polyps mainly in the colon and lower gastrointestinal tract, multiple bony osteomas especially in the jaw bones, supernumerary or unerupted tooth and epidermoid cysts.²

Because osteomas of the bones, including the jaws may be the initial symptom or the clinical finding in the Gardner's syndrome, this entity should always be included in the differential diagnosis.³ Gardner and Richards described the syndrome along with its genetic pattern in 1953.

Osteomas might be composed of either dense compact bone with scanty marrow spaces (compact/ivory osteoma)

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or cancellous bone with abundant bony trabeculae along with fibro-fatty marrow tissue (cancellous/trabecular/spongy osteoma).⁴ Based on its site of origin they can be classified as central (arising from the medullary cavity) or peripheral (arising from the cortex).⁵

In view of the finding of a mutation in gene adenomatous polyposis coli (APC) located on the long arm of chromosome⁶ in both Familial Adenomatous Polyposis (FAP) and Gardner's syndrome, the latter was considered as a variant

Original Research

BIOMEDICAL WASTE MANAGEMENT KNOWLEDGE, ATTITUDE AND PRACTICES - A CROSS SECTIONAL SURVEY OF STUDENTS OF A DENTAL TEACHING INSTITUTE IN KERALA

*Dr Dhanya Muralidharan, **Dr Arun Paul, ***Dr Shahla A, ***Dr Shadiya K,
***Dr Shibini Shareef

Abstract

Dental waste consists of both hazardous and infectious wastes which can be harmful to the public and environment if not disposed carefully. Dentists' need to be aware of correct methods of waste segregation and disposal in order to prevent health hazards. The present study was undertaken to determine the dental student's Knowledge, Attitudes and Practices of Biomedical Waste Management of a dental teaching institution in Kerala. A cross-sectional descriptive online questionnaire study was conducted for a period of four months from August to November 2021. A total of 414 students participated for the study with a mean age of 23.66 ± 2.042 . The current study revealed Dental students had positive attitudes towards Biomedical waste management but definite inadequacies in their Knowledge and Biomedical waste management Practices. Modifications in the dental curriculum stressing on importance of Biomedical waste management as early as in the pre-clinical years will help improve understanding of Biomedical waste management concepts and its application.

Key words: Biomedical waste management, Dental students, Knowledge, Attitudes, Practices

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A Comparative Analysis on Fracture Resistance of Three All-Ceramic Systems – An *In Vitro* Study

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Abstract

Background: All-ceramic dental materials, like any other ceramics, are inherently fragile in tension, and may be affected by microcracking, flaws, and defects that may be introduced during thermal treatment or fabrication procedures. The objective of the study was to evaluate and compare the fracture resistance of three all-ceramic materials, zirconia, lithium disilicate, and conventional feldspathic porcelain under standardized laboratory condition. **Methods:** Sixty identical monolithic disk-shaped samples of approximately 10 mm diameter and 2 mm even thickness were fabricated using zirconia, lithium disilicate, and feldspathic porcelain with 20 samples in each group. All the sample specimens were stored in artificial saliva (prepared according to Macknight – Hane and Whitford formula 1992) at temperature of $37 \pm 1^\circ\text{C}$ for 3 months until they underwent compressive loading in a Universal Testing Machine. The values so obtained were evaluated and compared. **Results:** The results on fracture resistance showed that zirconia had the highest fracture resistance ($3542.98 \pm 176.00589\text{ N}$) exhibiting highest strength followed by lithium disilicate ($2504.03 \pm 264.35990\text{ N}$) and feldspathic porcelain ceramics ($732.09 \pm 15.23330\text{ N}$). **Conclusion:** Within the limitations, the present study supports the finding that monolithic zirconia crowns were found to have higher fracture resistance than monolithic heat pressed lithium disilicate crowns. The fracture resistance of conventional monolithic feldspathic porcelain crown was significantly lower compared to the other two groups.

Keywords: All-ceramic systems, Fracture resistance, Lithium disilicate, Monolithic, Zirconia.

INTRODUCTION

In dentistry, ceramics represent one of the major classes of materials used for the reconstruction of decayed, damaged or missing teeth, as well as associated supporting structures. The American Ceramic Society had defined ceramics as inorganic, non-metallic materials, which are typically crystalline in nature, and are compounds formed between metallic and non-metallic elements such as aluminum and oxygen, calcium and oxygen, and silicon and nitrogen. All-ceramic materials mimic the life-like esthetics of natural teeth, but they too have some drawbacks.^[1] All-ceramic dental materials, like any other ceramics, are inherently fragile in tension, and may be affected by micro cracking, flaws, and defects that may be introduced during thermal treatment or fabrication procedures. All-ceramic restorations are subjected to intermittent forces during fabrication and mastication. The optimum strength of any ceramic is dependent on the fabrication procedure and the minimization of flaws extensive research into the mechanical properties and clinical performance of various all-ceramic

materials have been carried out over the past two decades. In spite of this, there still exist a dilemma as of which material is best in its performance.^[2]

Before being adopted as a routine clinical or laboratory procedure, it is important that the procedure be substantiated by *in vitro* and *in vivo* studies. With the plethora of new ceramic systems and materials on the market, the selection and decisions about their suitability in different clinical stress situations can be difficult. Therefore, it is advantageous to assess the fracture and durability of ceramic materials using relevant *in vitro* tests. This study investigates the fracture

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Impression Techniques for Patients with Limited Mouth Opening- A Review

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ABSTRACT: Limited mouth opening is a common occurrence in prosthodontic practice. It may occur due to burns, genetic disorders, oral cancers, scleroderma, surgical treatment for neoplasms etc. The prosthetic treatment of such patients presents difficulties in all the stages of rehabilitation. This mainly leads to compromised impressions and prosthesis. Traditional impression methods were extremely cumbersome and it is very difficult for proper tray insertion and alignment. Mouth opening smaller than size of the tray is a challenging factor for a prosthodontist. This will affect fabrication of a successful prosthesis. It may be necessary to modify the standard impression techniques to fabricate a prosthesis successfully. Digital impressions represents a new technology to replicate hard and soft tissue virtually and will provide high accurate images. It also enables to see positive images and magnify, evaluate and correct immediately before submitting to the laboratory. A broad search of published literature was performed using the keywords impressions, limited/restricted mouth opening, microstomia, trismus, sectional tray, hybrid impression and digital impressions from 2000 to 2021 in Medline, Google scholar and internet. This article aims to review and give basic knowledge of various modifications of the standard impression methods, digital impressions and hybrid impression techniques for patients with limited mouth opening.

KEYWORDS: Impressions, limited/restricted mouth opening, microstomia, trismus, sectional tray, hybrid impression, digital impressions

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I. INTRODUCTION

The common causes of limited mouth opening include congenital disorders, infections, trauma, iatrogenic, neoplasia, chemotherapy, radiotherapy, temporomandibular joint disorders, drugs, psychogenic and oral sub mucosal fibrosis.^[1] Another cause of the decreased range of opening is the tetanic contraction of the masseter muscle that can occur during bruxism or mechanical trauma.^[2] All prosthetic procedures require wide mouth opening in order to obtain perfect impressions. Different modifications are necessary to achieve a successful prosthesis. The custom made impression tray for impression making may help to resolve such issues. Several custom trays are available on the market varying in size, design and elasticity, but it is still not suitable for all extremely restricted cases. Intra oral scanning and digitalized three dimensional printing technologies had been incorporated in order to achieve good and perfect digital dental models in a short time. Analog techniques requires experienced prosthodontist and dental technicians and may compromise patient's comfort, so digitalizing the area of interest might overcome the shortcomings.^[3,4] This article reviews various modifications of the standard impression methods, Digital impressions and hybrid impression techniques for patients with limited mouth opening.

II. MATERIALS AND METHODS

Electronic databases were searched using Medline, PubMed, and Google for the keywords: impressions, limited/restricted mouth opening, microstomia, trismus and digital impressions from 2000 to 2021. Selection criteria included case reports and review articles focusing mainly on the impression techniques of patients with restricted mouth opening and its recent advances. The majority of the selected articles were case reports. So for summarizing various techniques, it was explained under 3 headings: Analog, Digital and Hybrid technique.

Case report

MANAGEMENT OF A COMPLICATED FRONTAL AND NASO-ORBITO-ETHMOID COMPLEX FRACTURE

*Dr Appu Mohan *Dr Anahita Ann Koruth ***Dr Sanju Lakshmanan **Dr Subin Varughese
Mathew**** Dr Manoj Kumar K P

Abstract

The Frontal and nasoorbitoethmoidal fractures remain the most complex of all facial fractures to diagnose and treat, largely because of the complex anatomy and difficulty in fracture reduction and fixation. Such fractures are increasing with the rising incidence of high-speed, high-force accidents. The nasoorbitoethmoidal fracture rarely occurs as an isolated event. Associated injuries often include central nervous system injuries, cribriform plate fracture, cerebrospinal fluid rhinorrhea, and fractures of the frontal bone, orbital floor, and middle third of the face as well as injury to the lacrimal system. The appropriate management of these injuries require an understanding of the anatomic features of the region and the degree of severity of damage. This article discusses about a complex nasoorbitoethmoidal fracture, diverse approaches to expose the fracture and recontouring the fracture segments. The purpose of this article is to provide a general overview of the topic, with a specific focus on the pearls of managing these fractures. Postoperative results show stable symmetrical fixation of the frontal bone, anterior table of the frontal sinus and nasal septum. Prompt and proper management of these injuries can achieve adequate functional and aesthetic outcomes

Key words: NOE, ORIF, Titanium mesh

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Case Report

ROOT COVERAGE BY CONNECTIVE TISSUE GRAFT: A CASE REPORT

*Dr. Sneha Shajan, *Dr. Risvana S., *Dr. Dona Susan Varghese, ** Dr. Subisha S.B

Dr. Anish Varkey, *Dr. Santhosh V.C, *****Dr. Harish Kumar V.V

Abstract

Gingival recession is the exposure of root surfaces due to apical migration of the gingival margins. The increase in esthetic concerns and the subsequent need to solve related problems such as hypersensitivity and root caries have favoured the development of many surgical procedures that permit the coverage of exposed roots. This article describes the use of the subepithelial connective tissue graft as a donor source for root coverage. The success of these grafts has been attributed to the double-blood supply at the recipient site from the underlying periosteum and the overlying recipient flap. Case report is illustrated to demonstrate this procedure for coverage of a single gingival recession.

Key words; Sub epithelial connective tissue graft, Root coverage, Gingival recession, Periodontal Plastic Surgery

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Case Report

MEDIALY DISPLACED SUBCONDYLAR FRACTURE MANAGEMENT– AN ENIGMA TO SURGEON -A CASE REPORT

*Dr. Manoj Kumar KP, **Dr. Yefna Nazar, **Dr. Anahita Ann Koruth ***Dr. Vijayakumar Depesh
****Dr. Subin Varughese

Abstract

Sub condylar fracture of the mandible accounts for 25-35% of all mandibular fractures. The treatment of condylar process fractures has generated a great deal of discussion and controversy in oral and maxillofacial trauma and there are many different methods to approach this injury. For each type of condylar fracture, the techniques must be chosen taking into consideration the presence of teeth, fracture height, patient's adaptation, patient's masticatory system, disturbance of occlusal function, deviation of the mandible, internal derangements of the temporomandibular Joint (TMJ) and ankylosis of the joint with resultant inability to move the jaw, all of which are sequelae of this injury. Many surgeons seem to favour closed treatment with maxillomandibular fixation (MMF), but in recent years, open treatment of condylar fractures with rigid internal fixation (ORIF) has become more common. This paper reports the case of a 26-year-old male patient injured in the submental region leading to restricted mouth opening.

Key words; Sub condylar fracture, ORIF, maxillofacial trauma

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Review

SOLITARY PLASMACYTOMAS OF JAWS: A REVIEW OF LITERATURE

*Dr Ahna Ali Akbar.E, *Dr Anu.PV, **Dr Mayeesh Radhakrishna,

Dr Rajeesh Mohammed, *Dr.Rohit Mohan

Abstract

Plasmacytoma is a neoplastic proliferation of plasma cells that is discrete, unifocal and monoclonal. Solitary plasmacytomas (SP) are classified into two kinds based on their location: Solitary bone plasmacytoma (SBP) – which occurs most frequently in the vertebrae and subsequently in the long bones and Extramedullary plasmacytoma (EMP) – which includes all non-osseous SPs. Long bones are the most prevalent site for solitary plasmacytomas. SBP of the jaw is a rare entity, so the diagnosis is challenging and frequently leads to misdiagnosis. Long-term disease-free survival (DFS) is attainable for roughly 30% of patients with SBP and 65 percent of those with EMP. SBP has a far higher risk of progression to myeloma, and the treatment of choice is radiation. A literature review and discussion of solitary plasmacytomas of the jaws are included in this article.

Key Words: Solitary plasmacytoma, Mandible, Multiple myeloma

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Introduction

Plasma cell dyscrasias are a group of entities regarded as neoplastic proliferation

of a single clone of plasma cells, typically producing a monoclonal immunoglobulins.¹

Solitary plasmacytoma (SP) is an early-stage

plasma cell malignancy that is in between

Review

DENTAL MANAGEMENT OF PATIENTS WITH GLUCOCORTICOID DEFICIENCY

*Dr. Shahlaa Kassim Aravassery, *Dr. Aswathy S., *Dr. Fidha T.K, **Dr. Prejith Sampath,
Dr. Ashir K.R., *Dr. Manoj Vengal

Abstract

For the dentist, patients who have had glucocorticoid medication pose particular challenges. People who are currently using steroids have different reactions to infection and wound healing. The risk of developing acute adrenal insufficiency in patients who are taking or have taken glucocorticoids is also greater when they are exposed to stressful situations. In order to assess the relative risk of pituitary-adrenal suppression when treating individuals with a history of glucocorticoid medication, accurate information from the medical history is required. If the patient is at danger, the dentist must decide whether systemic antibiotic therapy, anxiety management, and enhanced glucocorticoid administration are necessary as preventative measures. The dentist must be able to recognise the symptoms of adrenal crisis in patients.

A Pub Med/MEDLINE search was conducted to gather available articles. A total of 4 articles and 4 textbooks were included that described the dental management of patients with glucocorticoid deficiency.

Key words; *Glucocorticoids, Adrenal insufficiency, Dental management*

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Review

ORTHODONTIC BONE SCREWS

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Abstract

The usage of orthodontic bone screws has gained immense popularity and has been revitalizing the treatment of complex malocclusions. They are larger in dimension than the regular mini-implants and are therefore placed in areas of high density like the infrazygomatic crest in the maxilla and buccal shelf in the mandible. Owing to the difference in size they are placed away from the roots and hence, the name extra-radicular implants seem to be a befitting one. This article aims to provide an overview of the salient features of orthodontic bone screws.

Keywords: Anchorage, IZC infrazygomatic crest, orthodontic bone screws, buccal shelf

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Introduction

Anchorage loss is one of the prime concerns in the field of orthodontics. Whenever an anchorage is derived from the posterior segment for retraction, almost all such cases showed unwanted movement of posterior segment. Many methods like extra-oral anchorage, increasing number of anchor units were tried, but all these methods had its own demerits and patient's compliances.

The introduction of mini screws followed by bone screws in orthodontics has been used successfully to provide skeletal anchorage for various tooth movement with less failure rates than regular mini-implants and doesn't require any extensive surgical intervention for their placement. It also helped the clinician in converting the borderline extraction cases to non-extraction and borderline surgical cases to non-surgical cases¹

The Bone Screws (infra-zygomatic and buccal shelf) can just provide that ray of

Case report

ORTHOGNATHIC SURGERY USING VIRTUAL SURGICAL PLANNING

*Dr Anahita Ann Koruth, *Dr Aswin S K, **Dr Deepthi Krishnan Kutty, ***Dr Anroop A

****Dr Manoj Kumar K P.

Abstract

Orthognathic surgery is a distinct endeavour in facial surgery: a patient's appearance and occlusal function can be ameliorated exceptionally, the patient's quality of life. Successful outcomes in orthognathic surgery depends on close collaboration between the surgeon and the orthodontist across all stages of treatment. Virtual surgical planning promotes a more meticulous analysis of dentofacial deformity and preoperative planning. This article reports the case of a patient diagnosed with nasomaxillary deficiency and mandibular prognathism treated with virtual surgical planning.

Key words: Orthognathic, BSSO, Le Fort 1 osteotomy

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Original Study

EFFECTIVENESS OF TRIPLE ANTIBIOTIC PASTE IN LESION STERILISATION AND TISSUE REPAIR OF PRIMARY TEETH: A PILOT STUDY

*Dr.Amith Adyanthaya , **Dr.Gopika Gopan, **Dr.Aparna Sivaraman , **Dr.Mubeena.T.A
**Dr.Preema.M.U

Abstract

Background: Root canals of primary teeth at the stage of root resorption, cannot always be biomechanically prepared and obturated by the conventional endodontic treatment. Anxiety, fear, lack of cooperation in young children makes the conventional endodontic procedure a tough challenge. The concept of lesion sterilization and tissue repair (LSTR) therapy employed a mixture of antibacterial drugs for disinfection. Repair of damaged tissues can be expected if lesions are disinfected.

Aim: To assess the clinical and radiographic success of triple antibiotic paste in the treatment of necrosed primary molars.

Materials and Methods: 15 necrotic primary molars were selected randomly. Triple antibiotic paste containing medicaments ciprofloxacin , minocycline and metronidazole mixed with propylene glycol were used to fill the medication cavities which was restored with zinc oxide temporary restoration which was then followed by glass ionomer restoration. Clinical and radiographic evaluation was done at 3 and 6 months.

Results: Clinical and radiologic examination during follow up periods revealed overall clinical success of 93% and radiographic success of 87% by the use of triple antibiotic medicament for lesion sterilization and tissue repair.

Conclusion: Lesion sterilization and tissue repair with triple antibiotic paste shows good clinical as well as radiographic success in the treatment of primary teeth with necrotic pulp

Review

PHOTOBIOMODULATION IN ORTHODONTICS

*Dr Binu Purushothaman,** Dr Fawaz Varik,***Dr Amrita Ashok,** Dr Bavitha T.K.

Abstract

Photobiomodulation, also known as low-level light therapy (LLLT), employs near-infrared light (600-1000nm) from a low-level laser or light-emitting diode. It is also known as *Low level Lasers; Cold Lasers; Therapeutic Lasers, and Soft Lasers*. This review article explains the mode of action of photobiomodulation and its application in orthodontics.

Key words; *Photobiomodulation (PBM), low-level laser therapy, low-level light therapy, light emitting diode, orthodontic tooth acceleration, orthodontic pain*

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Introduction

Orthodontic treatment requires an average of 18 to 24 months of therapy. Several authors agree that these long treatment times, together with dental pain, are the main concerns for patients who undergo the treatment and are among the most important reasons causing them not to undertake it or to interrupt it¹. In light of these considerations, it was necessary to find a method that reduces the duration of orthodontic treatment but at the same time, was not invasive, was free of side effects,

was simple to use, and that can become part of the orthodontist's therapeutic tools.

To date, surgical, pharmacological, and physical approaches are the methods proposed the most often in the literature for increasing dental movements, and although they have shown positive results, some disadvantages prevent them from being applied in routine clinical practice². Pharmacological therapy with cytokine, Parathormone PTH, vitamin D, and RANKL/RANK/OPG show promising results, while on the other hand, relaxin

Review article

ROBOTICS IN PROSTHODONTICS: A STATE OF ART AND FUTURE CHALLENGES

****Dr.Ranjith. M, *Dr. Melisa Cheriyan, ***Dr.Sheejith.M, ****Dr.Niveditha**

Abstract: Robotics is a disruptive technology that will change diagnostics and treatment protocols in dental medicine. Robots can perform repeated workflows for an indefinite length of time while enhancing the overall quality and quantity of patient care. Early robots required a human operator, but robotic systems have advanced significantly over the past decade, and the latest medical robots can perform patient intervention or remote monitoring autonomously. Application of robot to prosthodontics is a novel application of robot technology in medical field. These kind of robots can realize the manufacturing of complete or partial denture, dental implantology. Robots are automatically operated machines that have replaced humans in performing various tasks. With advancements in robotic technology, a robotic system, the da Vinci Robot (Intuitive Surgery, Sunnyvale, CA, USA), has been gaining popularity for helping surgeons deliver a less invasive approach in the medical fields across gynecology, urology, and general surgery. Proven advantages of robot- assisted surgery include precise execution of technically demanding procedures and elimination of human tremors. This paper will provide dental practitioners and researchers with a comprehensive and transparent overview of the characteristics of literature regarding initiatives of robot technology in dentistry.

Key words: Robotics, Prosthodontics, Implantology, Yomi, Dental technology

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Comparative evaluation of bond strength on reattachment of fractured tooth fragments with different rehydration techniques-an Invitro study

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Abstract:

AIM AND BACKGROUND: Traumatic injuries involving fracture of anterior tooth is one of the common problems among children and adolescents. Tooth fragment reattachment technique represents an important step in the science and art of restoring fractured anterior teeth. One of the factors that play an important role in the success of fragment reattachment is the type of rehydration media. In the present study, effectiveness of various rehydration media; milk, coconut water and CPP-ACP on bond strength of reattached tooth fragments is compared with dry storage at 1 and 24 hour time intervals. Aim of the present study is to assess the effect of rehydration with coconut water, milk and CPP-ACP on the bond strength of the reattached tooth fragments at 1 and 24 hour time intervals.

METHODOLOGY: In this experimental study 72 extracted human permanent central incisors were selected and samples were divided into four groups of 18 teeth each. These groups were further divided into eight groups of nine teeth each based on the duration of placing in rehydration media and samples were sectioned stored in rehydration media coconut water, milk, CPP-ACP and dry storage as control group. After 1 and 24 hours the fragments were reattached using a flowable composite resin. The bond strength was measured using Universal Testing Machine.

RESULTS: Milk showed statistically significant increase in bond strength value of 273.30 ± 64.33 N at 1 hr storage and 285.76 ± 83.95 N at 24 hr storage which is followed by CPP-ACP, coconut water and dry storage respectively. In intra group comparison among 1 and 24 hr storage all groups have improved bond strength at 24 hr storage except for dry storage but this difference was not statistically significant.

CONCLUSION: Milk can be considered as the best rehydration media for fragment reattachment.

Keywords: Bond strength, CPP-ACP, Coconut water, flowable composite, fragment reattachment, G-aenial Universal Flo, Milk, Rehydration

Introduction

Traumatic injuries involving fracture of anterior tooth is one of the common problems among children and adolescents, which is detrimental to the esthetics and psychology of the individual.¹ Coronal fractures of permanent incisors represent 18- 22% of all trauma to dental hard tissues, 28-44% being simple involving enamel and dentin and 11-15% complex involving enamel, dentin and pulp. Of these 96% involve maxillary central incisors.²

Over time, numerous techniques have been developed for the reconstruction of injured teeth: resin crowns, steel crowns, orthodontic bands, ceramic crowns and resin composite restorations with and without pins.³ Although these techniques deliver a highly esthetic result, they suffer from the disadvantage of jeopardizing the tooth structure and, in cases of esthetic emergency, their application is not possible.⁴

With the development of adhesive dentistry, came the concept of 'Fragment Reattachment.' Chosack and Eidelman, in 1964, proposed the restoration of fractured crown by reattachment using the dental fragment.

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RESEARCH ARTICLE

Assessment of Biodentine Pulpotomy as an Alternative to Conventional Root Canal Treatment for Permanent Teeth in Children: An In Vivo Study

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ABSTRACT

Introduction: A vital pulp tissue is responsible for supporting the tooth structure through reparative dentin production. Preserving pulp vitality is essential in maintaining vascularization and nutrition to the tooth that eventually will support tooth structure & reduce teeth mortality. Root canal treatment for permanent teeth in children is a complex procedure requiring lengthy appointments and multiple visits and often require a full coverage restoration. on the other hand vital pulpotomy requires shorter appointments and usually accomplished in one visit. Vital pulp therapy can help to retain vital permanent teeth that are able to withstand normal function. Vital pulp therapy (VPT) has been increasingly considered as a minimally invasive approach for the management of teeth with inflamed pulps compared to the conventional approach of root canal treatment.

Aim:To assess the outcome of Biodentine in complete coronal pulpotomy in permanent teeth with symptomatic reversible pulpitis.

Methodology: In the present study 30 healthy children of age below 12 years requiring pulpotomy were selected after clinical and radiographic assessment. Pulpotomy technique was carried out after local anaesthesia and rubber dam application. After exposure, pulp was amputated to the level of canal orifices (full pulpotomy) using a sterile spoon excavator and high-speed round bur under water coolant. Hemostasis is achieved by cotton pellet moistened with 3 % NaOCl for 2 minutes and repeat as needed, after haemostasis achieved Biodentine was mixed according to the manufacturer's instructions and gently placed over the pulp to a thickness of 2-3 mm and after that a permanent restoration was placed. All treated patients were followed up at 3-month,6-month,9-month interval for clinical and radiographic evaluation. Resulting data were tabulated and statistically analyzed.

Results: Out of the 30 study samples,2 patient cases revealed abnormal clinical and radiographical changes at the end of 3 months and one more patient reported with pain and tenderness to percussion at the end of 6 months. At the end of 9 months follow up, clinical and radiographical success rate was 90.0% respectively.

Conclusion: Biodentine as a pulpotomy agent has a high successful rate and fulfilled all requirements of an ideal pulpotomy medicament. Hence Biodentine can be routinely used in practice for the management of carious permanent tooth in children. Excellent outcome of present study results were truly indicative of Biodentine being a promising pulp repair agent for pulpotomy in clinical practice.

Keywords: Biodentine,Permanent Molar,Pulpotomy,Clinical and radiographic outcome



Effect Of Probiotic Coconut Yogurt And Lactose Free Yogurt Consumption On Salivary Ph And Buffer Capacity In Children – An In Vivo Study

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Abstract:

Aims and objectives: To assess and compare salivary pH changes and buffer capacity of saliva after consumption of probiotic coconut yogurt and lactose free yogurt with that of regular yogurt.

Methodology: This double blind randomized clinical trial was conducted at the institution with 75 caries free patients belonging to the age group of 12-14 years who were allocated into three groups. Test group A, Test group B and Control Group consist of 25 subjects who consumed 90gm of probiotic coconut yogurt(PCY), probiotic lactose free yogurt(PLFY), regular yogurt(RY). Saliva samples were assessed at baseline, after ½ hour and 1 hour of intervention period using digital pH meter. All statistical procedures were performed using IBM Statistical Package for Social Sciences (SPSS) 25.0. One way ANOVA was done for multiple comparison and paired t test was used for association between variables within the group at different intervals. Probability value (p <0.05) was considered statistically significant.

Results: Study revealed an statistically significant increase in salivary pH in both test groups (group A and group B) after ½ and 1 hour than control group with a p value <0.05. There was no statistically significant difference in buffering capacity between the groups at ½ and 1 hour.

Conclusion : Consumption of both probiotic coconut yogurt and probiotic lactose free yogurt for a short period of time showed marked elevation in salivary pH which may help in preventing dental caries.

Keywords: Probiotics; coconut yogurt; lactose free yogurt; salivary pH; salivary buffering capacity.

Introduction

Dental caries is a multifactorial and the most prevalent chronic disease in Asian region. For dental caries oral hygiene, diet and streptococcus mutans plays an important role for initiation and progression of disease.¹ Saliva plays a critical role in the maintenance of optimal oral health and thus creates an appropriate ecological balance.² Salivary components are important in keeping balanced pH, buffering capacity and proteins that play an important role in maintenance of oral health.³ After the intake of any food containing sugar, the pH in saliva and plaque will drop from fermentation of carbohydrates by the cariogenic bacteria which will result in demineralisation of the tooth if the actual pH remains below the critical pH for a long time.⁴ It has been well documented that the dissolution of enamel occurs when the pH falls below critical pH of 5.5.⁵ Numerous non invasive strategies are being used to prevent dental caries formation. The non invasive treatment of initial lesions by remineralization has the potential to be a significant advance in the clinical management of caries.⁶ According to WHO probiotics are 'live micro-organism which when administered in adequate amounts confer a health benefit on the host'.⁷ The mechanisms by which probiotics exert their effects are largely unknown, but may involve modifying gut pH, antagonizing pathogens through production of antimicrobial compounds, competing for pathogen binding and receptor sites as well as for available nutrients and growth factors, stimulating immunomodulatory cells, and producing lactase.⁸ The thought was that the harmless bacteria in the fermented products competed with pathogens injurious to health.⁹



Original Research

Dentists use of caries risk assessment& individualized caries prevention among paediatric patients in Bengaluru - a cross sectional study.

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ABSTRACT

INTRODUCTION- The first stage of a comprehensive protocol for a child's oral health treatment is risk assessment.

AIM- The purpose of the current study was to determine if dentists in Bengaluru who are currently in practice carry out Caries Risk Assessment and offer individualized caries prevention to their paediatric patients.

MATERIAL & METHODS- A cross-sectional survey was carried out among Bengaluru's active dentists. The study individuals were picked using simple random sampling. Using a standardized self-administered questionnaire, the data was gathered.

RESULTS- Of the 215 dentists who responded, 80% thought it was crucial to undertake a caries risk assessment on young patients. Individualized Caries Prevention was used more frequently by 67% of dentists. There was no correlation between Individualized Caries Prevention and Caries Risk Assessment Factors, which suggested that patient affordability accounted for a large portion of treatment decisions.

CONCLUSION- Dentists should encourage parents and caregivers to start a dental home concept as soon as possible, which includes education, anticipatory guidance on the prevention of oral illnesses, and caries risk assessment.

Key words: Caries risk assessment, Individualized caries prevention, Use of fluorides, Xylitol gums

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Evaluation between Flowable Composite and Conventional Pit-and-Fissure Sealant among School Children in Bengaluru City: Randomized Controlled Trail

Abstract

Introduction: Restorative dentistry has achieved remarkable developments in halting caries predominantly seen in pit and fissures. Flowable composite resin is predominantly used as pit-and-fissure sealants in recent years. The aim of our study was to compare the retentive properties of a flowable composite resin compared to a conventional sealant in 6–9 years school children over 18 months' period. **Materials and Methods:** The study was a randomized controlled trail and conducted over a period of 18 months. Forty participants were randomly selected for this study from the private school. Flowable composite resin was used to seal the mandibular 1st molars on one side and conventional resin sealant was used on the other side. **Results:** The differences in the retention status between the sealants after 12 and 18 months were found statistically significant with $P = 0.02$ and $P = 0.03$, respectively. When the retention status was compared within the materials at different intervals, it was found to be statistically significant ($P < 0.001$). **Conclusion:** Conventional resin-based sealants had better retention rate at 12 and 18 months' duration than the flowable composite resin.

Keywords: Conventional resin sealant, flowable composite resin, retention status, school children

Introduction

Recent years have witnessed exceptional developments in preventive dentistry coupled with a significant reduction of dental caries worldwide. Caries preventive strategies are largely depending on noninvasive techniques rather than invasive ones.^[1] Most effective method of caries prevention is the application of pit-and-fissure sealants along with periodic fluoride application, adequate diet and good oral hygiene.^[2]

Occlusal morphology of young permanent molars and premolars, inherent anatomical aberrations including deep and narrow fissures make young permanent susceptible to caries.

Pit-and-fissure sealants get adhered to tooth structure effectively and seal the morphological irregularities completely. Adherence and retention to tooth structure are very critical in preventing microleakage and caries.^[3,4]

Sealants are economical and affordable preventive treatments when compared to other therapeutic treatments done before the caries progresses. Retention of the sealant is a determining factor for effective prevention of inception of any new caries lesion and its progression.^[5] Longevity depends on strict isolation, acid etching, micropore formation, flow of the material, and skill of the operator.

The three most commonly used materials as sealants are glass ionomer cements, compomers, and resins. Glass ionomer cements have the advantage of releasing active F⁻ in the surrounding enamel and make them less susceptible to caries. Resin-based sealants provide mechanical barrier to the nutrients for microorganism and inhibit their growth. Compomers have the advantages of both glass ionomer cements and resins.^[3] The most susceptible periods for young permanent teeth is 2-year post-eruptive maturation period and this critical period has to be seized by prompt placement of pit-and-fissure sealants. The aim of this clinical study was to evaluate

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Original Article

Effect of Periostin in Peri-implant Sulcular Fluid and Gingival Crevicular Fluid: A Comparative Study

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Abstract

Background: Various similarities have been observed between gingival crevicular fluid (GCF) and peri-implant sulcular fluid (PISF). This has resulted in research that has evaluated similar biological fluid markers that are similar to those present within the gingival sulcus. These biomarkers have high sensitivity and are a reliable biological tool when compared to clinical and/or radiographic examination and aid in diagnosis as well as monitoring the progression of periodontal disease surrounding teeth as well as the implants. **Aim:** The study aimed to compare the effectiveness of periostin in peri-implant sulcular and gingival crevicular fluids. **Materials and Methods:** This experimental prospective *in vitro* analysis was done following clearance by the institutional ethical committee. A total of 100 patients were selected. They were categorized into two groups: (I) Group A patients had peri-implant disease ($n = 50$), whereas (II) Group B patients had periodontitis ($n = 50$). Clinical loss of attachment score was noted in six sites around natural teeth and four sites around the implants. Presterilized filter paper strips were inserted within the sulcus/pocket till pressure was felt for 60 s. Periostin concentration levels in GCF and PISF samples were measured by the enzyme-linked immunosorbent assay technique. Statistical analysis of data collected was performed using Shapiro-Wilk statistical tool for normally distributed numerical data. **Results:** Mean $\pm$ standard deviation concentration of periostin in gingival crevicular fluid from periodontitis cases was recorded as 20.15 ± 2.76 ng/30sn, whereas in PISF was 19.23 ± 1.89 ng/30sn. On statistical analysis, no statistically significant differences were seen after comparing the concentration of periostin in periodontitis as well as peri-implantitis groups ($P > 0.05$). **Conclusion:** The present study analyzed periostin levels in gingival crevicular fluid obtained from patients diagnosed with periodontitis and sulcular fluid obtained from the sulcus around implants. Early biological markers or indicators of inflammation should be studied to determine the prognosis of treatment apart from the clinical assessment for the patient's benefit.

Keywords: Crevicular, fluid, gingival, peri-implant, periodontitis, periostin, prognosis, sulcular

Résumé

Contexte: Diverses similitudes ont été observées entre le fluide sulculaire gingival (GCF) et le fluide sulculaire péri-implantaire (PISF). Ce s'agit de recherches qui ont évalué des marqueurs fluides biologiques similaires à ceux présents dans le sillon gingival. Ces biomarqueurs ont une sensibilité élevée et sont un outil biologique fiable par rapport à l'examen clinique et/ou radiographique et aident à diagnostic ainsi que le suivi de la progression de la maladie parodontale entourant les dents ainsi que les implants. **Objectif:** L'étude visait à comparer l'efficacité de la périostine dans les fluides péri-implantaires sulculaires et gingivaux. **Matériels et Méthodes:** Ce test expérimental une analyse prospective *in vitro* a été effectuée après autorisation par le comité d'éthique de l'établissement. Au total, 100 patients ont été sélectionnés. Ils étaient classés en deux groupes: (I) les patients du groupe A avaient une maladie péri-implantaire ($n = 50$), alors que (II) les patients du groupe B avaient une parodontite ($n = 50$). Le score clinique de perte d'attache a été noté dans six sites autour

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Prosthodontics

KEYWORDS:

THE EFFECT OF POSTPOURING TIME ON TENSILE STRENGTH, SURFACE ROUGHNESS AND COMPRESSIVE STRENGTH OF TYPE IV DENTAL STONE: AN IN VITRO STUDY



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INTERNATIONAL JOURNAL
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ABSTRACT

A wide variety of materials are used to fabricate dental casts for fixed dental prosthesis, of which Type IV dental stones are commonly used because of its superior physical and mechanical properties. The principal requisites for Type IV dental stones commonly known as die materials are its strength, hardness, abrasion resistance and minimum setting expansion. The strength of die stone is generally expressed in terms of compressive and diametric tensile strength. Another mechanical property is surface roughness, which is influenced by the reproduction of impression material. The time between the pouring and removal of the gypsum cast from impression is termed as postpouring time, which has a major influence on physical and mechanical properties of dental cast. Moreover different commercial brands also exhibit distinct mechanical behaviour.

INTRODUCTION

Dental stone is versatile and important for the production of precise casts that represent clinical situations.^[1] An ideal die material should demonstrate high strength, superior abrasion resistance, and ability to reproduce the details of the impression, high dimensional stability, and good colour contrast with impression and pattern materials. Traditionally, gypsum products obtained by wet calcinations of the gypsum are most widely used for this purpose. These materials are easily available with suitable manipulative characteristics making them attractive for use in day-to-day practice.^[2] With numerous dental gypsum products available, dentists can be confused about which product will meet the clinical needs. The type IV American Dental Association (ADA)-approved die stones offer a variety of information about compressive strength as it may relate to surface hardness. A harder die stone, because it is more resistant to abrasion is theoretically a superior material.^[3] The point of discussion, when using dental stone materials, relies upon the final setting time to use in clinical and laboratorial procedures, because mechanical properties alter as time passes accordingly to the literature previously described.^[4]

Gypsum materials are chosen as a die material for the reason that is easy manipulation, economic disposition compatibility and their passion towards most impression materials.^[5] Die materials play an important role during the fabrication of indirect dental restorations and prostheses. Indirect method of fabrication of inlays, crowns and bridges demand die materials that are of the highest quality with respect to accuracy and strength.^[6] Successful die materials should

have good strength and hardness to withstand normal laboratory and clinical handling.^[7] Gypsum products are the most commonly used material to pour the impressions due to their versatile nature. Stone Type IV is a modified α -hemihydrate which is obtained by calcination of gypsum in calcium chloride solution and has very dense and cubic-shaped particles. They have a great strength, hardness, and resistance to abrasion, while their setting expansion is low. As a result, they are suitable for preparing die.^[8] The postpouring time (the time between the pouring and removal of the dental stone cast from the impressions) affects the mechanical properties of the stone.

Type IV dental stone casts should be manipulated 24 hours after pouring to minimize the risks of fracture, cracks, and abrasion because the compressive and diametric tensile strength will be increased.^[9] In this study, comparison of surface roughness, compressive strength and tensile strength according to postpouring time is done and also comparison between four different commercial brands of type IV dental stone is also done. This helps us to conclude which is a better type IV dental stone to use in our day to day practice. The purpose of this study was: evaluate and compare influence of postpouring time of Type IV dental stone on its surface roughness, compressive strength and diametric tensile strength. The null hypothesis tested was that postpouring has no effect on the mechanical properties tested.

MATERIALS AND METHOD

Sample size calculation

Applied formula

$$N = \frac{(Z_{\alpha/2} + Z_{\beta})^2 \times 210}{d^2}$$

d=2

A total of 288 specimens were prepared from four commercial brands of dental stones with 72 specimens from each brand. (Elite stone - Zhermack, Kalrock - Kalabhai, Moldastone - Heraeus Kulzer, GC Fuji rock) These 72 samples were divided into 24 samples each for compressive strength, diametric tensile strength and surface roughness. Each of these 24 samples are again subdivided into group of 8 each measured after 1 hour, 24 hours and 7 days' time intervals (postpouring time intervals) The materials used in study are described in Table I, together with their manufacturers, classifications, and proportions.

Table I. Description of materials used

Sl no:	Product name	Manufacturers	Batch No.	Powder - Water Ratio	Mixing Time
1	GC FUJIROCK	GC EUROPE	1811224	1:5	60 Sec
2	ELITE ROCK	ZHERMACK	295649	1:5	60 Sec

Original research

A FINITE ELEMENT ANALYSIS ON THE EFFECT OF FIBRE POST ON STRESS DISTRIBUTION IN ENDODONTICALLY TREATED MAXILLARY FIRST PREMOLAR

*Nevil Mathews **Vidya V*** Ravi SV****Subin Bharath

****Chandini Raveendran *Veena MV

Abstract

Context: The restoration of endodontically treated teeth has changed in recent years. The availability of adhesive techniques has increased the clinician's repertoire in terms of restoring teeth.

Aim: By means of a finite element method (FEM), the present study is to evaluate the effect of fiber post (FP) placement on the stress distribution in endodontically treated upper first premolars (UFPs) with mesial–occlusal–distal (MOD) composite restorations under static load.

Materials and Methods: FEM models are created to simulate three different clinical situations involving endodontically treated upper first premolars with MOD cavities restored with one of the following: composite resin, one fibre post in the palatal root and two fibre post – one in palatal and buccal root. As control, the model of an intact upper first premolar was included. A simulated load of 150 N is applied. Stress distribution is observed on each model surface, on the mid buccal– palatal plane and on two horizontal planes (at cervical and root-furcation levels); the maximum Von Mises stress values are calculated.

Results: Most favourable stress distribution was found in the intact tooth model and among experimental models, stress concentration was found to be the least in the cervical and furcation area in the model restored with fibre post in both buccal and palatal root

Original research

EFFICIENCY OF PASSIVE ULTRASONIC IRRIGATION AND GUTTAPERCHA SOLVENT IN REMOVAL OF ROOT CANAL FILLING MATERIAL USING PROTAPER RETREATMENT SYSTEM

* Chandini Raveendran **Noopura S ***Ravi SV ***Princy Paul *Mohammed Ashik

**Nimmy Kurian

Abstract

Background and Objective: The aim of the present study was to evaluate the efficacy of protaper retreatment instruments with and without guttapercha solvents and also with and without using passive ultrasonic irrigation on the removal of root canal filling material and the time required for its removal.

Materials and Methods: 40 mandibular premolars with single canals were decoronated, the root canals were prepared using the protaper rotary system and obturated with gutta-percha size (25/.06), using lateral compaction technique. Teeth were divided into four equal groups (n = 10) according to the final irrigation technique and gutta percha solvent was used in the removal of root canal filling material. Group 1 includes protaper retreatment system with conventional irrigation and gutta-percha solvent. Group 2 is protaper retreatment system with passive ultrasonic irrigation and gutta percha solvent. Group 3 is protaper retreatment system with conventional irrigation and without gutta-percha solvent and group 4 is protaper retreatment system with passive ultrasonic irrigation and without gutta percha solvent. Roots were split into two halves longitudinally and the canal walls were viewed under digital microscope. The remaining filling material in each root canal third was evaluated using ISO PRO software.

Review

BIOPHOTONICS IN DENTISTRY

*Divya. K. Raj, **Ravi. S.V, ***Elsy .P. Simon

Abstract

The aim of this review paper is to provide a comprehensive idea about the use and application of photonics in dentistry. This article will present and discuss the relevant aspects of biophotonics in the fields of dentistry. In the recent decades, biophotonics is revolutionizing in the field of medicine, biology and chemistry and creating a new breed of medical engineers and at the same time getting engineers a taste of medicine. In biomedical engineering detection, diagnosis and treatment targeting both macro-objects like the teeth or bone as well as micro-objects such as bacteria have seen better understanding through the development of new tools. Biophotonics is a multi-disciplinary field that bridges engineering, the sciences and medical fields. This review paper provides a comprehensive discussion of its main elements, such as photoelasticity, interferometry techniques, optical coherence tomography, different types of lasers and quantum dots.

Key Words: *Biophotonics, Dentistry, Laser, Quantum dots*

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Introduction

Photonics is a light based optical technology. During the last 50 years, there has been many breakthroughs in photonics which laid foundation for its wide range of

applications in health care.¹ Biophotonics is defined as the science of generating and harnessing light (photon) to image, detect and manipulate biologic materials.² Most applications of photonics in health care

Short Communication

DENTAL EDUCATION FOR GENERATION Z

Do we need a new strategy?

*Elsy P Simon

Abstract

The educators must consider that Gen-Z learns in a different way and has a unique and different vision of the world than the previous generation. They need to consider the constant use of technology, effective communication and feedback techniques, in addition to the implementation of educational methods that promote creativity and well-being².

**Professor and Head, Department of Conservative Dentistry and Endodontics, KMCT Dental College, Manassery, Kozhikode, Kerala.*

Introduction

Generation Z is a cohort with members born between 1996 and 2012. The majority of students who are currently studying or finishing University belong to the so-called "Generation Z", their ages ranging between the age of 18 and 27 years.¹ August Comte have argued that generational change is what drives social changes. More specifically, each generation entering into a new life stage at more or less the same time is the pulse that creates the history of a society.²

The first Gen Zers were born when the internet had just achieved widespread use. They are thus called "Digital Natives". With 24×7 access through their mobile phones, the digital world has revolutionized every part of life, including learning, socializing, shopping and entertainment. Shifting political, economical, and social landscape locally and globally; climate crisis and Covid 19 has also impacted the formative stages of this generation.¹

Today's dental students, Generation Z (Gen Z), are said to learn differently than those

Original Research

THE BIOMIMETIC RESTORATIVE APPROACH

*Kavya Belaram, **Princy Paul, ***Elsy P Simon

Abstract

Dr David Clark has introduced the innovative method of composite restoration, the bioclear method which has changed the course of dental restorations by bringing new dimensions to aesthetics and function through cutting edge procedural advantage. It involves five pillars:

- The removal of biofilm before bonding,
- Preparations for composite maximizing enamel involvement,
- The use of clear anatomically shaped mylar matrices,
- Injection molding warm 3M Filtek composite, and
- Establishing the final “rock star” polish.

These allow the conservation of enamel and create long lasting restorations.

Key Words: *Bioclear, Calalily design, Fissurotomy, Injection molded heated composite.*

Corresponding author: Kavya Belaram

* Assistant Professor, **Post Graduate Student, *** Professor, **** Reader

Department of Conservative Dentistry, KMCT Dental College, Kozhikode, Kerala

Introduction

Conventional class II cavity preparation originated around 120 years back.

Amalgam restoration procedures are tedious since they include metal band placement, difficulty in manipulation procedure, and forcible compaction of amalgam.

Case Report

Open Access, Volume 3

Management of odontogenic myxoma using particulated cancellous iliac bone graft and cortical bone as a crib along with a titanium reconstruction plate

Neelakamal Hallur¹; Aaisha Siddiqua²; Syed Zakoullah³; Shereen Fatima⁴; Deepti Krishnan Kutty^{4*}

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Abstract

A case of odontogenic myxoma in the mandible of a 23-year-old woman with a large expansile lesion involving right mandibular body and ramus is described. The patient underwent segmental resection of the mandible and primary mandibular reconstruction using particulated cancellous iliac bone graft and cortical bone as a crib and titanium reconstruction plate.

Keywords: Odontogenic myxoma; Segmental resection of mandible; Iliac bone graft; Titanium reconstruction plate; Osteoid phase - 1 bone formation.

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Introduction

Odontogenic Myxoma (OM) of the jaws was first described by Goldman and Thoma in 1947 [1]. It is a rare benign neoplasm of the jaws that accounts for 1–17.7% of all odontogenic tumors [2]. The World Health Organization (WHO) in 2003 classified OM as a benign neoplasm arising from odontogenic ectomesenchyme with or without odontogenic epithelium [3]. OM develops mostly during the second and third decades of life and is preferentially located in the mandible [2,4]. In both jaws, the molar region is most often affected [5]. Some authors have suggested that there is a female predilection [6], whereas others have reported no sex predilection [7]. It is usually asymptomatic and slow growing. It is found incidentally on radiographs, appearing as a "tennis-racket", "a honeycomb" or a "soap-bubble"

[6,8]. OM is locally aggressive and invasive with the potential for persistent local growth and bone destruction. The standard protocol is resection with safe margins of 1 cm. Because of its infiltrative nature, OM is prone to recurrence if resection is inadequate [9]. However, there has been some debate as to the most appropriate surgical approach. Reports of surgical treatment of odontogenic myxoma vary from simple enucleation and curettage to segmental resection of the lesion with 1 cm safe margin [8].

A case of OM in the mandible of a 23 year old woman who underwent segmental resection of the lesion with 1 cm margin and reconstruction using particulated cancellous iliac bone graft and cortical bone as a crib and a titanium reconstruction plate is described here.



A survey of commonly used impression materials and techniques for fixed partial denture among dentists in Malabar region – Kerala: A cross sectional study

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Date of Submission: 28-03-2023

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ABSTRACT:

Introduction: There are multiple concepts and techniques in fixed prosthodontic practice and several studies have concluded that clinicians definitely deviate from the recommended clinical protocols. If this happens during treatment with fixed prosthesis, the quality of fixed prostheses is compromised which affects its longevity. Aim of this study was to evaluate the use of impression materials and techniques in fixed partial denture among dentists in Malabar region - Kerala. **Materials and Method:** A cross-sectional, questionnaire-based online survey was done amongst dentists in Malabar region - Kerala through Google forms. Data from the completed questionnaires were analysed using the SPSS version 22. All statistical analyses were carried out at a significance level of $P < 0.05$. Out of 225 participants, 190 (84.4%) dentists always made diagnostic impression for fabrication of study cast. 102(45.3%) dentists used Addition silicone and 93(41.3%) used Alginate for final impression making. Most commonly used elastomeric impression technique was Putty Resin/Dual mix Technique (36%). Regarding retraction cord, 82.6% of dentists used Plain gingival retraction cord. **Conclusion:** The study found that most of the responses on use of impression materials and techniques were significantly associated with the level of knowledge, proficiency and clinical experience.

KEYWORDS: Fixed prosthodontics, Impression materials, Impression techniques, Retraction cord, Alginate

I. INTRODUCTION:

Twentieth century witnessed remarkable changes with regard to human life expectancy worldwide, and the twenty first century is set to carry forward the gain in life expectancy further,

both in the developing and developed world¹. Various impression materials and techniques came into use since times earlier till today. All of them have some pros and cons and are suitable for specific conditions.

Most of the dental practitioners pay more attention to patient's flow, cost and treatment time and less focus towards the appropriate technique, material and armamentarium which are required for long-term success². There are numerous technique described for making impression, including copper band technique, mono-phase technique, single step technique, or the double-step technique and several types of impression materials that can be used in fabricating prostheses which including alginate, condensation silicone, polysulfide, polyether and polyvinyl siloxane³.

As Fixed Prosthodontic procedures are widely practiced for dental rehabilitation, it is very important to evaluate the details of basic steps in the field of fixed prosthodontics and the way of practicing this important branch of dentistry. Therefore, knowledge of dental professionals regarding materials and techniques used is important for the successful outcome of dental treatment⁴. The ability to identify and analyze inaccurate impressions and to understand how to avoid them is key to successful treatment⁵. This study is a questionnaire-based survey to assess and know the impression materials and techniques for fixed partial dentures that are being followed by the dentist in Malabar region.

II. MATERIALS AND METHODS:

This study was conducted among general dentist and specialist among dentists of Malabar region from 15/11/2022 to 15/01/2023. 225 dentists practicing in the Malabar region were selected for the study. Approval of Institutional Ethics Committee, KMCT Dental College, Makkam, Calicut was obtained before starting the

Original research

COMPARATIVE ANALYSIS OF THE SEALING ABILITY OF MINERAL TRIOXIDE PLUS AND BIODENTINE AS ROOT END FILLING MATERIALS – AN INVITRO STUDY

*Subin Bharath **Ragina S.J *** Elsy P Simon *****Sarin K

***** Nevil Mathews *****Veena M.V

Abstract

Background and Aim: To compare the sealing ability of Mineral Trioxide Aggregate plus and Biodentine as root end filling materials in extracted natural teeth

Material and Methods: Forty premolars were used in this experimental study. Root canal treatment was done in each tooth and obturation was done with gutta percha and zical sealer. Access restored with type 2 glass ionomer cement. Root resection was done and 3mm class 1 cavity was prepared apically using ultrasonic retro tip. It was divided in to 2 groups. Samples in Group 1 was filled with MTA plus and Samples in Group 2 was filled with biodentine. Specimens were contaminated with fresh blood without anticoagulant to mimic the oral surgical field. Specimens were suspended in 1 percentage of methylene blue for 24 hours. Then the specimens were sectioned and were observed under optical microscope and length of dye penetration was assessed.

Results: The two groups (MTA plus group and biodentine group) did not differ statistically on the sealing ability as a root end filling material.

Statistical Analysis: Independent t test was used.

Conclusion: Within the limitations of this study no significant difference was noted in the sealing ability between MTA plus and Biodentine as root end filling material.

Key words: *MTA plus , Biodentine , Root end filling material*

Case Report

TOOTH INCLUSION: AN ANOMALOUS DISCOVERY ON A MANDIBULAR FIRST PREMOLAR

*Dr. Shehna Hameed, *Dr. Anlin Anto, **Dr. Prejith Sampath, ***Dr. Ashir K.R,

****Dr. Manoj Vengal

Abstract

Tooth inclusion, commonly known as dens in dente (DI), is a developmental malformation of the tooth that most commonly affects the permanent maxillary lateral incisor teeth followed by maxillary central incisors, premolars, canines, and molars. The presence of DI in mandibular permanent teeth is extremely rare. For clinicians, it is important to recognize these anomalies and be aware of their complications so that an effective treatment strategy can be planned. This article presents an unusual case of DI affecting the mandibular first premolar.

A Pub Med/MEDLINE search was conducted to gather available reports. A total of 15 articles were included that described the emergence profile.

Keywords: *Dens in dente, Dens invaginatus, Dilated odontome*

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Department of Oral Medicine and Radiology, KMCT Dental College, Kerala.

Introduction

Dens invaginatus (DI), also known as DI, dentoid in dente, dilated gestant odontome, tooth within a tooth, and dilated composite odontome, is a developmental anomaly resulting from invagination of a

portion of the crown (enamel organ) during odontogenesis.¹ The invagination ranges from a slight pitting (coronal type) to an anomaly occupying most of the crown and root (radicular type).² Although a clinical examination may reveal a deep pit or



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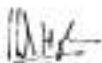
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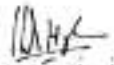
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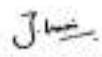
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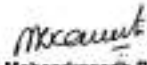
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We appreciate your contribution to the success of this conference.

S. Kiattavorncharoen

Clinical Professor Dr. Sirichai Kiattavorncharoen
Dean, Faculty of Dentistry, Mahidol University
IDCMR Secretariat Office



Prof. Sunil Muddaiah

Prof. Sunil Muddaiah
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26TH NATIONAL CONFERENCE INDIAN ASSOCIATION OF PUBLIC HEALTH DENTISTRY

Hosted by Goa Dental College & Hospital, Bambolim
Oral Health for All - Inclusive & Sustainable



CERTIFICATE OF PARTICIPATION

PRESENTED TO

Dr. Dhanya Muralidharan

for his/her participation in the 26th National Conference of Indian
Association of Public Health Dentistry held from 23rd to 25th September
2022 at Maquinez Palace (Entertainment Society of Goa), Panaji, Goa



Dr. Sabyasachi Saha
President IAPHD

Dr. Vamsi Krishna Reddy
Hon Gen. Secretary IAPHD



Dr. Ridhima Gaunkar
Organizing Chairperson

Dr. Akshatha Gadiyar
Organizing Secretary



Society of Periodontists & Implantologists of Kerala

15th SPIK ANNUAL CONFERENCE

SPIKCON-2023



CERTIFICATE OF ATTENDANCE



Presented to *Dr. Anish Varkey*

for participating and contributing to the success of

15th Annual Conference of **Society of Periodontists and Implantologists of Kerala (SPIK)**

held at Magnet Hotel, Puthiyatheru, Kannur on 29th & 30th April 2023,

hosted by **Kannur Dental College, Anjarakandy, Kannur.**

[Signature]
Dr. Arun Narayanan
Organising Chairman

[Signature]
Dr. Sameera G Nath
Scientific Convenor, SPIK

[Signature]
Dr. Presanthila Janam
President, SPIK

[Signature]
Dr. Deepthi V
Organising Scientific Convenor

[Signature]
Dr. Mohammed Feroz T.P
Secretary, SPIK

[Signature]
Dr. Deepak Thomas
KDC Observer



Society of Periodontists & Implantologists of Kerala
15th SPIK ANNUAL CONFERENCE
SPIKCON-2023



CERTIFICATE OF APPRECIATION

Presented to DR. ANISH VARKEY.....

for being the Chairperson at the 15th Annual Conference of

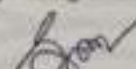
Society of Periodontists and Implantologists of Kerala (SPIK)

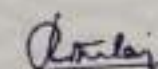
held at Magnet Hotel, Puthiyatheru, Kannur on 29th & 30th April 2023,

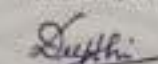
hosted by **Kannur Dental College, Anjarakandy, Kannur.**

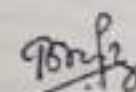
We appreciate your contribution to the success of this conference.


Dr. Arun Narayanan
Organising Chairman


Dr. Sameera G Nath
Scientific Convenor, SPIK


Dr. Presanthila Janam
President, SPIK


Dr. Deepthi V
Organising Scientific Convenor


Dr. Mohammed Feroz T.P
Secretary, SPIK


Dr. Deepak Thomas
KDC Observer



Society of Periodontists & Implantologists of Kerala
15th SPIK ANNUAL CONFERENCE
SPIKCON-2023



SCIENTIFIC PRESENTATION CERTIFICATE

Presented to **DR. ANISH VARKEY**

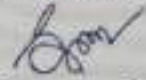
for Scientific Paper/Poster Presentation at the 15th Annual Conference of

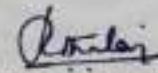
Society of Periodontists and Implantologists of Kerala (SPIK)

held at Magnet Hotel, Puthiyatheru, Kannur on 29th & 30th April 2023,

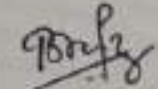
hosted by **Kannur Dental College, Anjarakandy, Kannur.**

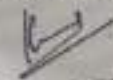

Dr. Arun Narayanan
Organising Chairman


Dr. Sameera G Nath
Scientific Convenor, SPIK


Dr. Presanthila Janam
President, SPIK


Dr. Deepthi V
Organising Scientific Convenor


Dr. Mohammed Feroz T.P
Secretary, SPIK


Dr. Deepak Thomas
KDC Observer



50th Golden Jubilee
CONFERENCE
INDIAN PROSTHODONTIC SOCIETY



10th-13th November, 2022
The Leela Ambience Convention Hotel, New Delhi (INDIA)

CERTIFICATE OF ATTENDANCE

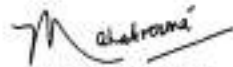
IPS No.: OL1265

Presented to

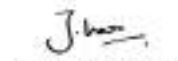
Conf. No.M564

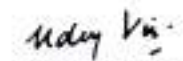
DR. SHEEJITH .M

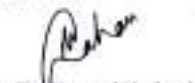
*for having attended the 50th Golden Jubilee Conference of the Indian Prosthodontic Society
held on 10th-13th November 2022 at New Delhi*

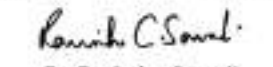

Dr. Mahesh Verma
Organizing Chairman

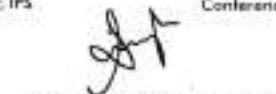

Dr. V. Rangarajan
President, IPS


Dr. Jangala Hari
Hon. Secretary, IPS


Dr. U. V. Gandhi
Conference Secretary


Dr. Manesh Lahori
Organizing Secretary


Dr. Ravindra Savadi
Scientific Committee Chairperson


Dr. Saranjit Singh Bhasin
Scientific Committee Chairperson

Golden Glory with Gold Standards



INDIAN PROSTHODONTIC SOCIETY

KERALA STATE BRANCH

PRESENTS

IMPRESSIONS '22

HOSTED BY

DEPARTMENT OF PROSTHODONTICS,
KANNUR DENTAL COLLEGE



Certificate Of Participation



THIS CERTIFICATE IS PRESENTED TO

DR. SHEEJITH M

FOR ATTENDING IMPRESSIONS '22 CONDUCTED BY IPS KERALA STATE BRANCH HELD ON
3RD DECEMBER 2022
AT MAGNET HOTEL, PUTHYATHERU, KANNUR

Dr. Cherian K P
President
IPS Kerala State

Dr. Rupesh P I
Secretary
IPS Kerala State

Dr. A V Sreekumar
Organizing Chairman

Dr. Nishna Pradeep
Organizing Secretary

Dr. Anand K S
Scientific convener



INDIAN PROSTHODONTIC SOCIETY
KERALA STATE BRANCH



Certificate Of Participation

THIS CERTIFICATE IS PRESENTED TO

.....
DR. SHEEDITH M
.....

FOR ATTENDING THE STATE LEVEL CONTINUING DENTAL EDUCATION PROGRAMME
CONDUCTED BY IPS KERALA STATE BRANCH HELD ON 4TH DECEMBER 2022
AT MAGNET HOTEL, PUTHIYATHERU, KANNUR

Dr. Cherian K P
President
IPS Kerala State

Dr. Rupesh P L
Secretary
IPS Kerala State

Dr. A V Sreekumar
Organizing Chairman

Dr. Nishna Pradeep
Organizing Secretary

Dr. Anand K S
Scientific convener

Dr. Chetan Hegde
Faculty

Dr. Unnikrishna K
Faculty



18th Annual State Conference

ASSOCIATION OF ORAL & MAXILLOFACIAL SURGEONS OF INDIA
KERALA STATE



CERTIFICATE OF ATTENDANCE

The Organising committee certifies that
Dr. SHEETITH-M
has attended the Pre Conference Course on **Hands-on Programme in Basal Implantology using Models** held at Kozhikode, Kerala on 14th of October 2022.

Dr. Prasanth Pillai
Course Director

Dr. Prasanth Panicker
PreConference Chairman

Dr. Soumithran C S
Scientific Committee Chairman

Dr. Manoj Kumar K P
Organizing Secretary

Dr. Ummar Mangalath
Organizing Chairman

PreConference

October 14th, 2022; 9am to 4pm
KPM Tripenta Hotel, Kozhikode



IPS SILVER JUBILEE PG CONVENTION

2nd, 3rd & 4th June 2023, Hyderabad



CERTIFICATE OF PARTICIPATION

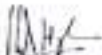
Reg. No.: **M256**

Presented to

Dr. SHEEJITH M

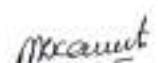
We acknowledge your presence at the convention
and recognise your commitment to advancements
in the field of prosthodontics.




Dr. Chetan Hegde
President, IPS


Dr. Jangala Hari
Secretary, IPS


Dr. K. Sanketh Reddy
Treasurer, IPS


Dr. K. Mahendranadh reddy
Patron


Dr. B. Chittaranjan
Organizing Chairman


Dr. D. Chalapathi Rao
Organizing Secretary

7th
ACDI
CONFERENCE
3,4,5 FEBRUARY 2023
KOCHI, KERALA, INDIA

CERTIFICATE
OF PARTICIPATION

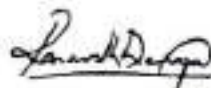
Awarded to

DR SUBINBHARATH

for participating and contributing to the success of the
7th ACDI Conference held from 3 - 5 February 2023
at Le Meridien Hotel and Convention Centre.



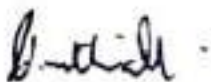
DR. B. MOHAN
President ACDI



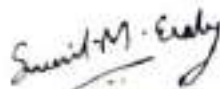
DR. PRASANTH DHANAPAL
Organizing Chairman



DR. MATHEW VARGHESE K
Organizing Secretary



VINUTHA MANJUNATH
ACDI General Secretary



DR. SUNIL M ERALY
Scientific Committee Chairman



46th Annual Conference of AOMSI 2022, Indore

Theme - "Challenges and Complications in Maxillofacial Surgery"



CERTIFICATE OF ORAL PRESENTATION

This is to certify that

DR. VIPIN DAS A.P

has presented the scientific paper titled

PAN FACIAL TRAUMA - A CASE REPORT 2479

in the 46th Annual Conference of AOMSI 2022, Indore

held on 17th, 18th & 19th November 2022 at Brilliant Convention Centre, Indore, Madhya Pradesh.

We appreciate your contribution to the success of this conference.

Dr. Manjunath Rai
President, AOMSI

Dr. S Girish Rao
Hon. General Secretary, AOMSI

Dr. M. Veerabahu
Conference Secretary
46th Annual Conference of AOMSI

Dr. Rajesh Dhirawani
Organizing Chairman
46th Annual Conference of AOMSI

Dr. Geeti Vajdi Mitra
Organizing Secretary
46th Annual Conference of AOMSI

Dr. Shaji Thomas
Chairman, Scientific Committee
46th Annual Conference of AOMSI



46th Annual Conference of AOMSI 2022, Indore

Theme - "Challenges and Complications in Maxillofacial Surgery"



CERTIFICATE OF PARTICIPATION

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DR. VIPIN DAS A.P

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46th Annual Conference of AOMSI 2022, Indore

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Dr. Manjunath Rai
President, AOMSI

Dr. S Girish Rao
Hon. General Secretary, AOMSI

Dr. M. Veerabahu
Conference Secretary
46th Annual Conference of AOMSI

Dr. Rajesh Dhirawani
Organizing Chairman
46th Annual Conference of AOMSI

Dr. Geeti Vajdi Mitra
Organizing Secretary
46th Annual Conference of AOMSI

Dr. Shaji Thomas
Chairman, Scientific Committee
46th Annual Conference of AOMSI

Dr. Amit Singh Nirwan
Treasurer
46th Annual Conference of AOMSI



INDIAN PROSTHODONTIC SOCIETY
KERALA STATE BRANCH

Certificate Of Participation



THIS CERTIFICATE IS PRESENTED TO

Dr. ANUSREE. GOPINATH

FOR ATTENDING THE STATE LEVEL CONTINUING DENTAL EDUCATION PROGRAMME
CONDUCTED BY IPS KERALA STATE BRANCH HELD ON 4TH DECEMBER 2022
AT MAGNET HOTEL, PUTHIYATHERU, KANNUR

Dr. Cherian K P
President
IPS Kerala State

Dr. Rupesh P L
Secretary
IPS Kerala State

Dr. A V Sreekumar
Organizing Chairman

Dr. Nishna Pradeep
Organizing Secretary

Dr. Anand K S
Scientific convener

Dr. Chetan Hegde
Faculty

Dr. Unnikrishna K
Faculty



IPS SILVER JUBILEE PG CONVENTION

2nd - 4th June 2023, Hyderabad

CERTIFICATE OF APPRECIATION

Awarded to

DR. ANUSREE GOPINATH

We appreciate and recognise your valuable contribution for
chairing the scientific session during the convention.




Dr. Gnanan Hegde
President, IPS


Dr. Jangala Ravi
Secretary, IPS


Dr. K. Sanketh Reddy
Treasurer, IPS


Dr. S. Mahendrasaiah Reddy
Member


Dr. B. Chittaranjan
Organizing Chairman


Dr. E. Chalapathi Rao
Sponsoring Secretary


Dr. R. Suresh Babu Reddy
Sponsorship Chairman





IPS SILVER JUBILEE PG CONVENTION

2nd - 4th June 2023, Hyderabad

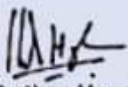
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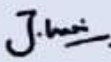
Awarded to

Dr. ANUSREE GOPINATH

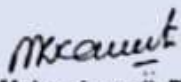
We acknowledge your contribution for conducting the
pre-convention course at Malla Reddy Institute of Dental Sciences,
Hyderabad, on June 2, 2023.




Dr. Chethan Hegde
President, IPS

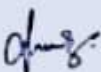

Dr. Jangala Hari
Secretary, IPS


Dr. K. Sanketh Reddy
Treasurer, IPS


Dr. K. Mahendranadh Reddy
Patron


Dr. B. Chittaranjan
Organizing Chairman


Dr. D. Chalapathi Rao
Organizing Secretary


Dr. P. Sateesh Srinivas Reddy
Scientific Chairman



IPS SILVER JUBILEE PG CONVENTION

2nd - 4th June 2023, Hyderabad

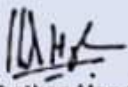
CERTIFICATE OF APPRECIATION

Awarded to

Dr. ANUSREE GOPINATH

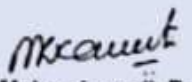
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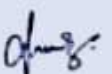

Dr. Jangala Hari
Secretary, IPS


Dr. K. Sanketh Reddy
Treasurer, IPS


Dr. K. Mahendranadh Reddy
Patron


Dr. B. Chittaranjan
Organizing Chairman


Dr. D. Chalapathi Rao
Organizing Secretary


Dr. P. Sateesh Shrinu Reddy
Scientific Chairman



IPS SILVER JUBILEE PG CONVENTION

2nd - 4th June 2023, Hyderabad

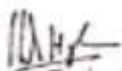
CERTIFICATE OF APPRECIATION

Awarded to

DR. MONISHA VS

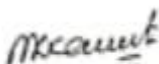
We appreciate and recognise your valuable contribution for
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Dr. Chethan Hegde
President, IPS


Dr. Jangala Hari
Secretary, IPS


Dr. K. Sanketh Reddy
Treasurer, IPS


Dr. K. Mahendranadh Reddy
Patron


Dr. B. Chittaranjan
Organizing Chairman


Dr. D. Chalapathi Rao
Organizing Secretary


Dr. P. Sateesh Simha Reddy
Scientific Chairman



21st ISP NATIONAL PG CONVENTION

A. B. Shetty Memorial Institute of Dental Sciences, Mangalore



CERTIFICATE OF APPRECIATION

Acknowledges your contribution towards the success of the event as a

CHAIRPERSON / JUDGE

for SCIENTIFIC SESSION(S)

at the 21st ISP National PG Convention
held at Mangalore from 31st March to 2nd April, 2023

Dr. Abhay Kolte
President, ISP

Dr. H.S. Grover
Hon. Secretary, ISP

Dr. Anil Melath
Organising Chairman

Dr. Nandini Manjunath
Scientific Chairperson

Dr. Biju Thomas
Convention Secretary

Dr. Rahul Bhandary
Organising Secretary



21st ISP PG CONVENTION

A.B. Shetty Memorial Institute of Dental Sciences, Deralakatte, Mangalore



Certificate of Participation

Presented to

Dr V C SANTHOSH

for attending the 21st ISP National PG Convention
held at Mangalore from 31st March to 2nd April, 2023.

Dr. Abhay Kolte
President ISP

Dr. H.S. Grover
Hon. Secretary, ISP

Dr. Anil Melath
Organising Chairman

Dr. Biju Thomas
Convention Secretary

Dr. Rahul Bhandary
Organising Secretary

Dr. Nandini Manjunath
Scientific Chairperson



CERTIFICATE OF PARTICIPATION

6th International Conference on Cortico Basal Implantology

Proudly Presented to Dr.

DR V.C. SANTHOSH

for having participated and contributed towards the success of
6th International Conference on Cortico Basal Implantology held from
22nd to 24th July 2022 at The Ananta Resort, Udaipur, India



PROF. DR. STEFAN IHDE
ORGANISING CHAIRMAN

DR. ANTONINA IHDE
ORGANISING CO-CHAIRMAN

DR. VIVEK GAUR
ORGANISING PRESIDENT

DR. KIRAN PATEL
ORGANISING SECRETARY

DR. MMEHUL JANI
SCIENTIFIC SECRETARY



Society of Periodontists & Implantologists of Kerala
15th SPIK ANNUAL CONFERENCE
SPIKCON-2023



CERTIFICATE OF APPRECIATION

Awarded to



Dr. V.C Santhosh

for being the faculty on the topic

Introduction to Cortico Basal Implantology

during the 15th Annual Conference of

Society of Periodontists and Implantologists of Kerala (SPIK)

held at Magnet Hotel, Puthiyatheru, Kannur on 29th & 30th April 2023,

hosted by **Kannur Dental College, Anjarakandy, Kannur.**

Dr. Arun Narayanan
Organising Chairman

Dr. Presanthilla Janam
President, SPIK

Dr. Mohammed Feroz T.P
Secretary, SPIK

Dr. Sameera G Nath
Scientific Convenor, SPIK

Dr. Deepthi V
Organising Scientific Convenor

26TH NATIONAL CONFERENCE
INDIAN ASSOCIATION OF PUBLIC HEALTH DENTISTRY



Hosted by Goa Dental College & Hospital, Bambolim
Oral Health for All - Inclusive & Sustainable



CERTIFICATE OF EXCELLENCE

This Is to Certify that

DR. ARUN PAUL E.M.

has been awarded the

BEST PAPER AWARD

for presenting a Scientific Paper titled

PSYCHOLOGICAL IMPACT OF COVID-19 PANDEMIC AMONG DENTAL PROFESSIONALS IN KOZHIKODE

DISTRICT - A CROSS SECTIONAL STUDY

during the 26th National Conference of Indian Association of Public Health Dentistry held from 23rd to 25th September 2022 at Maquinez Palace (Entertainment Society of Goa), Panaji, Goa

Dr. Sabyasachi Saha
President IAPHD

Dr. Vamsi Krishna Reddy
Hon. Gen. Secretary IAPHD



Dr. Ridhima Gaunkar
Organizing Chairperson

Dr. Akshatha Gadiyar
Organizing Secretary

Dr. Vinayak Kamath B.
Scientific Chairperson

Dr. Phelen Da Costa
Scientific Co-Chairperson



46th Annual Conference of AOMSI 2022, Indore

Theme - "Challenges and Complications in Maxillofacial Surgery"



CERTIFICATE OF ORAL PRESENTATION

This is to certify that

DR. DEEPTI KRISHNANKUTTY

has presented the scientific paper titled

MANAGEMENT OF SUB-CONDYLAR AND ANGLE OF MANDIBLE FRACTURE BY A TRANS-BUCCAL TROCAR ALONG WITH AN INTRA-ORAL APPROACH

in the 46th Annual Conference of AOMSI 2022, Indore

held on 17th, 18th & 19th November 2022 at Brilliant Convention Centre, Indore, Madhya Pradesh.

We appreciate your contribution to the success of this conference.

Dr. Manjunath Rai
President, AOMSI

Dr. S. Girish Rao
Hon. General Secretary, AOMSI

Dr. M. Veerababu
Conference Secretary
46th Annual Conference of AOMSI

Dr. Rajesh Dhirawadi
Organizing Chairman
46th Annual Conference of AOMSI

Dr. Geeti Vajdi Mitra
Organizing Secretary
46th Annual Conference of AOMSI

Dr. Shaji Thomas
Chairman, Scientific Committee
46th Annual Conference of AOMSI



CERTIFICATE OF ATTENDANCE

Awarded to

VC Santhosh

For attending the

CAD CAM Workshop conducted by **Dr. Roberto Molinari** at

DS World Dubai

held on 5 - 6 February, 2023 at Atlantis, The Palm, Dubai, UAE.

4.75 CPD Points awarded by Dubai Health Authority

Accreditation Number: **DHA/MTS/ACC/23-2395/A**

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XIX KSOMP ANNUAL
STATE CONFERENCE &
IX POST GRADUATE
CONVENTION



INDIRA GANDHI
INSTITUTE OF
DENTAL SCIENCES

CERTIFICATE OF APPRECIATION

PROUDLY PRESENTED TO



Dr. MAYEESH RADHAKRISHNA

For being the Judge for PG Paper Presentation in
MILAN 2023 - XIX ANNUAL CONFERENCE AND IX PG CONVENTION
of Keral Society of Oral and Maxillofacial Pathologists organized by
Indira Gandhi Institute of Dental Sciences, Kothamangalam at PCS,
Vedanta, Kochi on 4th and 5th March 2023


Dr. Naveed
General Secretary &
Organizing Committee


Dr. Anila Karaman
General Secretary


Dr. Jose Van Abraham
General Secretary


Dr. Asha C.P.
President


Dr. Anu Varghese
President


Dr. Shibu Jacob
President


Dr. Sasi Kumar
President

