



ORO-FACIAL PHAKOMATOSIS

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Abstract : Phakomatoses are a heterogeneous group of disorders primarily involving structures derived from the embryologic neuroectoderm. Although it can also affect the skin, viscera, and other connective tissues, phakomatosis mainly affects the central nervous system and manifests clinically in a variety of ways. Phakomatoses are mainly connected with benign malignancies. They often lack the ability to proliferate indefinitely present in malignancies and are stagnant or slowly progressing lesions.

IndexTerms - Oro-facial Phakomatosis, Phakomatosis, Neurocutaneous syndromes, Neurofibromatosis, NF1, Von Recklinghausen disease, NF2, Sturge Weber syndrome.

I. INTRODUCTION

The neurocutaneous syndromes, often known as phakomatoses, are a diverse collection of diseases that largely affect tissues generated from the embryologic neuroectoderm^{1, 2}. Phakomatosis typically affects the central nervous system, although it can also affect the skin, viscera, and other connective tissues, with varying clinical manifestations³. The name "phakoma" suggests a benign development of normal or almost normal cells that are indolent to the affected tissue; it is comparable to the term "hamartoma." The name "phakomatosis" comes from the Greek word "phakos," which means "birthmark." Van der Hoeve used it for the first time in 1923¹. The majority of tumors associated with phakomatoses are benign. They often lack the ability to proliferate indefinitely present in malignancies and are stagnant or slowly progressing lesions⁴. They are characterized by widespread abnormalities often with characteristic appearances.

II. CLASSIFICATION

Most commonly seen phakomatosis include:

1. Neurofibromatosis
 - Neurofibromatosis type 1 (NF1) (Von Recklinghausen disease)
 - Neurofibromatosis type 2 (NF2)
2. Tuberous Sclerosis (Bourneville-Pringle Disease)
3. Sturge-Weber Syndrome (Encephalotrigeminal Angiomatosis)
4. Von Hippel-Lindau Disease (Retinocerebellar Angiomatosis)

Less common:

1. Ataxia Telangiectasia
2. Incontinentia Pigmenti (Bloch-Sulzberger Syndrome)
3. Basal Cell Nevus Syndrome (Gorlin-Goltz Syndrome)
4. Wyburn-Mason Syndrome (Bonnet-Dechaume-Blanc Syndrome)
5. Encephalocraniocutaneous Lipomatosis
6. Nijmegen Breakage Syndrome
7. Epidermal Nevus Syndrome
 - Schimmelpenning Syndrome
 - Phakomatosis Pigmentokeratotic
 - Nevus Comedonicus Syndrome
 - Angera Hair Nevus Syndrome
 - Becker Nevus Syndrome
 - Proteus Syndrome
 - Type 2 Segmental Cowden Disease
 - CHILD Syndrome (Congenital Hemidysplasia with Ichthyosiform Erythroderma and Limb Defects Syndrome)
 - FGFR3 Epidermal Nevus Syndrome



VASCULAR ANOMALIES IN OROFACIAL COMPLEX

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Abstract : According to the International Society for the Study of Vascular Anomalies (ISSVA) classification, vascular anomalies include a variety of illnesses that are split into two groups: vascular tumours with proliferative changes of endothelial cells and vascular malformations, which primarily involve structural vascular abnormalities. These head and neck lesions can develop early in development or later in life, posing functional, aesthetic, and bleeding issues. They occasionally co-occur with a wide range of other illnesses and elements of different syndromes. Here, we've included a summary of the many vascular abnormalities, their clinical characteristics, imaging techniques, related syndromes, and available therapeutic options.

IndexTerms – Vascular anomalies, vascular tumor, vascular malformations, hemangioma

INTRODUCTION:

The term "vascular malformations" refers to congenital lesions that develop from dysplastic vascular channels that lack endothelial proliferation or involution and may be a result of hemodynamic causes⁽¹⁾. Vascular malformations are categorized according to their common embryological basis of developmental mistakes made during embryogenesis, such as faulty signaling pathways that regulate vascular cell death, maturation, and growth. These mistakes cause vascular plexus cells with a particular level of differentiation to persist.

CLASSIFICATION:

The ISSVA's ("International Society for the Study of Vascular Anomalies") classification of vascular lesions as vascular tumors and vascular malformations was updated in 2014 by Arnold C. Morrow et al. Vascular lesions are categorized by the ISSVA (International Society for the Study of Vascular Anomalies), which is widely recognised and regarded as the industry standard. The ISSVA classification, which was most recently revised in 2018, divides vascular anomalies into two categories. Vascular tumours and vascular malformations are the two categories⁽⁴⁾. Infantile, congenital, and tufted angiomas are examples of benign vascular tumours. Kaposiform hemangioendothelioma (KHE) and Kaposi's sarcoma are examples of locally aggressive or borderline vascular tumours. Angiosarcoma and epithelioid hemangioendothelioma are examples of malignant vascular tumours. According to the rate of flow, vascular malformations can be classified as slow-flow (capillary, venous, or lymphatic malformations) or fast-flow (arteriovenous malformation). A vascular tumour, which develops by cellular hyperplasia, can be separated from a vascular malformation, which is a specific fault in vascular morphogenesis.

HEMANGIOMA:

One of the most common vascular tumours of the head and neck are haemangiomas. The Greek words "haema" (blood), "angelo" (vessel), and "oma" (tumour) make form the word "haemorrhage." These benign lesions, which are usually painless and are only localised to the head and neck 60% of the time, are made up of a growing mass of blood vessels. The remaining percentages are found in the trunk (5%) and extremities (15%). Haemangiomas are commonly located on the skin's surface, yet they can also affect internal organs such the liver, larynx, lung, or gastrointestinal tract. Lips, tongue, buccal mucosa, gingiva, palatal mucosa, salivary glands, the alveolar ridge, and the jawbones are among the oral cavity's structures where they can manifest⁽⁴⁾. Cavernous, capillary, and other types of haemangiomas are the three main divisions. It can also be classified into infantile or congenital haemangiomas. Infantile haemangiomas can form from embolised placental cells or from invading

Assessing the relationship between the intercondylar distance and mandibular intercanine distance in orthopantomogram – A retrospective study

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ABSTRACT

Background: In completely edentulous patients, it is necessary to replace the teeth with at most esthetics and comfort with less patient strain. **Aim:** The current retrospective study was done to find the relationship between the intercondylar distance and intercanine distance of the mandible by obtaining the ratio using an orthopantomogram (OPG) for lower anterior teeth selection in completely edentulous patients. **Materials and Methods:** The OPG of 500 subjects was selected randomly. The OPGs were taken using the Sirona Orthophos XG machine and exposed for 14.1 s at 64 kvp, 8 mA. Then, the intercondylar distance and mandibular intercanine distance were measured from the soft copy of the OPG using the software "Sidexis." The required measurements were taken digitally from the OPG using the software "Sidexis" in millimeters (mm). The SPSS software version 22.0 was used for statistical analysis. **Results:** Pearson correlation coefficients (r) displayed a significant positive association between the intercondylar distance and intercanine distance of the mandible ($r = 0.42$; $P = 0.0002$). The correlation between intercondylar width and mandibular intercanine width was significant and positive for men ($r = 0.26$, $P = 0.0003$) but negative for women ($r = -0.41$, $P = 0.0001$). The ratio between the mean intercondylar distance and the mean intercanine width was 1:4.90. **Conclusion:** The mandibular intercanine distance and the intercondylar distance have a positive and significant association. The ratio obtained in this study was 1:4.90 between the mandibular intercanine distance and the intercondylar distance that could be employed for the choice of mandibular anterior teeth.

Key words: Anterior teeth selection, complete denture, esthetic, intercondylar distance, mandibular intercanine distance, orthopantomogram

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INTRODUCTION

The mandible is one of the hardest and largest bones in the human skull which is a moveable part articulated

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Comparative Evaluation of Desensitizing Effect of Three Fluoride Varnishes in Patients with Dentinal Sensitivity under Palliative Care: A Cross-Sectional Study

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Abstract

Background: Hard tooth structures are susceptible to direct radiation damage. Dental sensitivity is more often encountered and the most distressing effect in post-radiotherapy patients. Fluoride varnishes are commonly used in dentistry to alleviate dentinal sensitivity. Employing fluoride varnishes in patients with dentinal sensitivity under palliative care can be evaluated. **Objectives:** To compare and evaluate the desensitizing effect of three fluoride varnishes in patients with dentinal sensitivity under palliative care. To assess and compare the sustainable desensitizing effect of three fluoride varnishes after 3 months. **Materials and Methods:** The study includes 45 samples satisfying inclusion and exclusion criteria. The samples were divided into three equal groups ($n = 15$): group A, group B, and group C. Three fluoride varnishes used were 5% sodium fluoride with xylitol-coated calcium and phosphate (CXP), copal gum, isopropyl alcohol, 5% sodium fluoride, and 5% sodium fluoride with bioglass to groups A, B, and C, respectively. Data were collected before application and 24 hours after application, 7 days, and 3 months after application for all three groups in terms of VAS. **Results:** A statistically significant improvement in VAS score was observed between pretreatment and 24 hours posttreatment follow-ups in all three groups. Patients under group C showed more improvements than the other two groups. In subsequent follow-ups on the 7th day and 3 months, patients under group C were observed to have sustained effects compared with the other two groups. **Conclusion:** Among the three compared fluoride varnishes, 5% sodium fluoride with bioglass proved to have a better immediate and sustained desensitizing effect in patients with dentinal sensitivity under palliative care.

Keywords: Dentin desensitizing agents, dentinal sensitivity, palliative care, postradiotherapy complication, radiotherapy

INTRODUCTION


Oral complications from cancer treatment are often associated with significant patient morbidity. Optimal treatment of head and neck cancer requires a multidisciplinary treatment plan.^[1] Radiation therapy is used as an independent treatment or as an adjunct to surgery. Radiation can cause direct damage to hard tooth structures, which is one reason why it accelerates the progression of caries in exposed people.^[2] Dentin hypersensitivity is common and most distressing in postradiation patients. The primary objective of palliative care is pain management. Dentin hypersensitivity is the "pain arising from exposed dentin in response to chemical, thermal, tactile, or osmotic stimuli and not due to another tooth defect or disease."^[3] The objective of dental treatment should encompass more than just curing

and treating dental issues. It should also prioritize improving the patient's overall quality of life. Fluoride varnishes are widely used in the management of dental hypersensitivity.^[4] This study aimed to evaluate the efficacy of three fluoride varnishes in patients with dentin hypersensitivity receiving palliative care.

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**PREVALENCE OF ORAL MUCOSAL ABNORMALITIES IN
THE PATIENTS VISITING GOVERNMENT TERTIARY CARE
CENTER IN SOUTH INDIA IN RELATION TO AGE AND SEX –
A RETROSPECTIVE STUDY.**

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Saravanan⁵, Dr. L. P. Raghupathy⁶**

Abstract:

Background & objectives: Epidemiological data of oral mucosal abnormalities (OMAs) are required to develop practical oral care policies. However, limited data are available for rural / urban areas in Tamilnadu. We aimed to estimate the Prevalence of OMAs and to identify their association between age and sex.

Materials and methods: This retrospective study was conducted in the Department of Dental Surgery, Chengalpattu Government Medical College & Hospital. Information on diagnosed oral lesion, age and gender were evaluated.

Results: The prevalence of Oral Mucosal lesions were 27.9%. The most prevalent oral mucosal abnormalities were frictional keratosis, followed by Fissured tongue, Leukoedema, Smoker's palate, Aphthous ulcers, traumatic ulcers etc.

Conclusion: The high prevalence of OMAs necessitates adequate awareness and management of these lesions in the general population. Dental clinicians should be knowledgeable and familiar with the etiopathogenesis, clinical presentation, diagnosis, and management of these lesions. We conclude that there was a highly significant association between these oral lesions, age and gender.

Keywords: Oral mucosal lesions, Oral health, Oral Abnormalities, Oral Disorder

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ORIGINAL ARTICLE

Evaluation of Mandibular Canal Anatomy, Variations, and its Classification in Panoramic Radiographs: A Retrospective Study

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ABSTRACT

Introduction: Oral surgical procedures involve the risk of injuring the mandibular alveolar, buccal, and lingual nerve with consequent transient or permanent paresthesia. The lack of knowledge concerning the anatomical variations of the mandibular canal had proven to increase the incidence of surgical complications. The purpose of the study was to evaluate the incidence and configuration of the bifid mandibular canal (BMC) based on orthopantomogram (OPG) images.

Materials and methods: The sample of the research article consists of panoramic radiographs of 500 patients, of which 270 were men (54%) and 230 were women (46%). The normal anatomy of the mandibular canal and its variations were recorded according to the BMC classification given by Freitas et al.

Results: Fifty-three BMCs were observed and their prevalence rate was 10.6%. The BMC was most predominant in men (56.6%) than in women (43.4%). The most predominant classification was class B (62.3%), followed by class C (24.5%), class D (11.3%), and class A (1.9%), mostly on the left side (51.0%).

Conclusion: Based on the results obtained in the study, the prevalence rate was 10.6%. It was most predominant in men, unilaterally, on the left side and the most predominant classification was class B. It is concluded that a panoramic radiograph can also be used as a reliable tool in the identification of mandibular canal anatomy and its variations since it also provides accuracy as that of cone-beam computed tomography (CBCT). A thorough radiological evaluation is very important prior to surgical approaches in the mandible in order to prevent and avoid potential complications.

Keywords: Bifid mandibular canal, Mandibular canal, Panoramic radiograph, Research article.

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INTRODUCTION

Oral surgical procedures such as exodontia of mandibular third molars, osteotomy, bone remodeling, and implant placement involve the risk of injuring the mandibular alveolar nerve, buccal nerve, and lingual nerve, with consequent transient or permanent paresthesia.¹ Knowledge about the mandibular canal is essential to decrease the rate of surgical complications.²

The mandibular canal contains its nerve, artery, and vein.³ It runs downward and forward in the ramus of the mandible, and then horizontally forward in the body of the mandible, where it is placed under the small openings.

An orthopantomogram (also commonly known as panoramic radiography) is a 2D representation of a 3D structure and plays a specific role in dentistry.⁴

The mandibular canal is best viewed in CBCT than in OPG. Advantages of OPG over CBCT include patient exposure being low, valuable aid in patient education, cost-effectiveness, and easily available in all dental hospitals.⁵ Taking into consideration of advantages of OPG and easy availability, the study was conducted using the OPGs of the patients who visited Karpaga Vinayaga Institute of Dental Sciences for the past 5 years from the population age of 14 years and above.

Radiographically, the mandibular canal appears as a tube-like passage, a radiolucent area surrounded by two radiopaque lines below mylohyoid lines.⁶ The presence of an accessory canal is called bifid. Since bifid is not common among all individuals, dentists should be aware of its presence to avoid further complications

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after and during surgical procedures and implants.⁸ Some of the complications are unexpected bleeding, nerve damage, and inadequate anesthesia. Some of the complications that occur after surgery include paresthesia and uncontrolled bleeding.

The objective of our study was to find the variations in the inferior alveolar canal (i.e., mandibular canal) anatomy by making the use of OPGs. The motive of the study was to evaluate the mandibular canal anatomy, variations, and classification based on OPG images.

MATERIALS AND METHODS

The retrospective study sample consisted of OPGs of the patients who visited the Karpaga Vinayaga Institute of Dental Sciences for the past 5 years with a count of 500. The submitted project



**INITIAL DIAGNOSIS AND IMPROVED CLASSIFICATION OF
ANEMIA BY RED CELL DISTRIBUTION WIDTH AND MEAN
CORPUSCULAR VOLUME FROM ITS ORAL
MANIFESTATION.**

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Dr. Kalaiselvi Santhosh⁵, Dr. L.P. Raghupathy⁶**

Abstract

Background/Purpose: Anemia is the most common hematological disorder around the globe. This study evaluated whether anemia patients had specific oral manifestations based on the classification by Mean Corpuscular Volume and Red Cell Volume Distribution Width

Methods: The hematological screening includes estimations of red blood count, hemoglobin %, mean corpuscular volume, mean corpuscular hemoglobin, hematocrit, red cell distribution width, ferritin, iron, total iron binding capacity, vitamin B12, liver function tests, and kidney function tests and anemia classified and matched with oral manifestation.

Results: In the study, the occurrence of oral signs and symptoms could not be correlated with the distribution of subjects because of the overlap of oral manifestations in different causes of anemia. The hemoglobin % was significant with a p-value of 0.001 which means that hemoglobin % has an important role in the occurrence of anemia. The Mean corpuscular volume in diseases was found to be statistically significant, with a p-value of 0.001 which means that it is necessary for the classification of different types of anemia. The standard deviation of red cell distribution width values in diseases was found to be statistically significant, with a p-value of 0.001 which means that it is important for the classification of different types of anemia.

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Recurrence of Ameloblastoma on the Right Side of the Mandible: A Case Report

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ABSTRACT

Ameloblastoma is a benign, locally invasive epithelial odontogenic tumour occurring in the jaw. Among all types, multicystic ameloblastoma is a locally aggressive lesion and prone to recurrence. Hereby, the authors present a case report of a 23-year-old female with a chief complaint of painful swelling on the right lower third of the face for the past one month. History revealed a gradual increase in size of the swelling, along with intermittent and non radiating pain that worsened during mastication and improved with rest. Patient past history revealed similar swelling in the same region twice, with the first occurring five-years-ago and a recurrence after two years of treatment. Both the episodes were treated with laser ablative surgery and extraction of the affected tooth. The patient presented with recurrent swelling one month ago and underwent an incisional biopsy, which revealed a histopathological diagnosis of unicystic ameloblastoma. Additional investigations, including an occlusal radiograph, orthopantomogram, and Computed Tomography (CT), were performed. Based on the recurrence, clinical examination, and investigations, the present case was diagnosed as unicystic ameloblastoma. It was treated with segmental resection followed by reconstruction of the mandible using a free fibula graft was planned. The prognosis was good, and regular follow-up has been maintained for the last four months, with the patient still under review. The uniqueness of present case lies in the patient's second decade of life, three episodes of recurrence within five years, and the treatment approach of segmental mandibulectomy with immediate free fibula graft reconstruction. This procedure reduces the risk of recurrence, allows for full rehabilitation within a short period, and minimises the number of surgical procedures.

Keywords: Acanthomatous ameloblastoma, Mixed/solid type, Squamous metaplasia

CASE REPORT

A 23-year-old female patient presented to the Department of Oral Medicine and Radiology, Karpaga Vinayaga Institute of Dental Sciences, with a chief complaint of painful swelling in the lower back jaw region of the face for the past one month. The history of the presenting illness revealed that the swelling gradually increased in size and was accompanied by intermittent, non radiating pain that worsened during mastication and was relieved by rest. The intra oral images have been shown in Table/Fig-1a-c). The patient

from the apical region of tooth 43 to 47 [Table/Fig-4], with mesial root resorption on 47. An occlusal radiograph showed buccal cortical plate expansion with radiopacities [Table/Fig-5].



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		Dentistry
		VERRUCCOUS CARCINOMA OF LEFT BUCCAL MUCOSA - A CASE REPORT
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ABSTRACT	Wart carcinoma or Ackermann tumor is considered a low-grade variant of squamous cell carcinoma and often presents in the oral mucosa and skin. Oral wart cancer presents clinically as proliferative or cauliflower-like lesions of the buccal mucosa, or ulcero-proliferative lesions, followed by other sites such as the gingiva, tongue, and hard palate. Smoking and smokeless tobacco, alcohol, and opportunistic viral infections are the most commonly associated causes for most cases reported in the literature. Here, this article describes a case study of a 52-years-old woman diagnosed with verrucous carcinoma of the left buccal mucosa with constant traumatic stimulation from her teeth as the etiology of lesion development. Although described as a benign lesion with minimally invasive potential, cases over the years have shown transformation into squamous cell carcinoma. Therefore, early diagnosis and surgical excision of lesions are the most appropriate treatments for wart tumor.	
KEYWORDS : oral verrucous carcinoma, ackermann's tumor, carcinoma cuniculatum		
INTRODUCTION	Oral Verrucous Carcinoma (OVC), is a variation of Squamous Cell carcinoma (SCC), first defined through Lauren V Ackermann in 1948 so it turned into acknowledged as "Verrucous Carcinoma of Ackermann" or Ackermann's Tumor", different names utilized in literature are Buschke Loewenstein tumour, florid oral papillomatosis, epithelioma cuniculatum, and carcinoma cuniculatum. The term VC (Verrucous carcinoma) refers to the ones exophytic mucosal or cutaneous squamous tumors which can be heaped above the epithelial floor with a papillary micronodular floor and pushing margins. The most common site of occurrence is oral cavity, other different sites being larynx, pyriform sinus, esophagus, nasal hollow space and paranasal sinuses, outside auditory meatus, lacrimal duct, skin, scrotum, penis, vulva, vagina, uterine, cervix, perineum, and the leg. This closely keratinized, properly differentiated variation of squamous cell carcinoma suggests warty-like factors and lacks traditional cytologic findings of atypia, showing most effective domestically invasiveness and no metastatic potential. Lymph node involvement and remote metastasis are uncommon in Verrucous Carcinoma. It happens greater regularly in adult males over the 6th decade. Histopathologic and medical prognosis of oral Verrucous Carcinoma can be difficult, so near cooperation among pathologist and health practitioner is needed that allows you to discover the character of the lesion.	
Case Report	A 52-years-old female patient visited our Dental College and Hospital with a chief complaint of a painful ulcer in the left lower back tooth region for the past 2 months, associated with continuous and throbbing in nature of pain and does not subside on taking medication. Incisional biopsy was done in our hospital before 8 months and the report was found to be verrucous carcinoma of left buccal mucosa. Patient has no relevant medical history. Patient underwent uneventful extraction in lower left back tooth region. Patient has habit of betel nut chewing and pouching in left buccal mucosa with 5 times a day for past 20 years.	
	On extraoral examination, no facial asymmetry detected. Greyish discoloration present over the lower lips. On intraoral examination, an ulceroproliferative lesion of size 3x3 centimetres evident on the left retromolar trigone extending anteriorly distal to 35, posteriorly upto the left pterygomandibular raphae, medially involving buccal vestibule, distally involving buccal cortex. Margins are irregular and texture is rough. Surface and shape -irregular. On palpating it is tender, irregular. No bleeding and pus discharge was detected. Able to perform lateral tongue movements with restriction of superior movements. On hard tissue examination-generalized attrition, missing 36,37,38 was evident.	
Differential Diagnosis	Verrucous leukoplakia in left buccal mucosa Chronic non-healing malignant ulcer of left buccal mucosa Provisional Diagnosis Verrucous carcinoma in left buccal mucosa Partially edentulous in 36,37,38 Investigations Incisional biopsy reveals suggestive of verrucous carcinoma in left buccal mucosa High dose contrast enhanced computed tomography (CECT) reveals carcinoma in left buccal mucosa - posterior aspect of left buccal mucosa extending upto retromolar trigone Final Diagnosis Verrucous carcinoma in left buccal mucosa Partially edentulous in 36,37,38 Treatment plan and done Wide local excision + selective neck dissection + left radial foramen free flap reconstruction	
	DISCUSSION Verrucous carcinoma is defined as a warty variant of Squamous Cell Carcinoma characterized by a predominantly exophytic overgrowth of well-differentiated keratinizing epithelium with locally aggressive pushing margins, these tumors are slow growing, but they can cause extensive local destruction.	
	Aetiology The etiological factors are smoking, alcohol consumption, areca nut chewing and oral microbiota	
	Epidemiology And Prevalence Verrucous carcinoma is generally seen in elderly in patients, the mean age of occurrence being 60-70 years, with nearly 75% of the lesions developing in males. It is consistently reported that a very high percentage of patients with the disease are tobacco chewers. A small number of patients give no such history but instead use snuff or smoke tobacco heavily. Occasional patients deny the use of tobacco, and these usually have ill-fitting dentures. The vast majority of cases occur on the buccal mucosa and gingiva or alveolar ridge, although the palate and the floor of the mouth are occasionally involved.	
	Clinical Presentation Pain and difficulty in mastication are common complaints, but bleeding is rare. The neoplasm is chiefly exophytic and appears papillary in nature, with a pebbly surface, which is sometimes covered by a white leukoplakic film. The lesions commonly have ragae-like folds with deep clefts between them. Lesions of the buccal mucosa may become quite extensive before the involvement of deeper contiguous structures and lesions on the mandibular ridge or gingiva	

RESEARCH ARTICLE
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Age Estimation Using Exfoliative Cytology and CBCT – A Comparative Study

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ABSTRACT

Introduction: One of the most crucial steps in establishing someone's identification is making an educated guess about their age. One method is exfoliate cytology (EC), which involves painlessly and easily collecting unharmed cells from the oral cavity for microscopic examination. Pulp-to-tooth area ratio (PTR) measurements utilising cone beam computer tomography (CBCT), which is a 3D image of teeth in living humans, are another innovative nondestructive way of age estimate

The motivation behind this study is to decide a singular's age by estimating the pulp-to-tooth area ratio (PTR) of maxillary canines through the utilization of three-layered cone beam computed tomography (CBCT), (CBCT), and by analysing the average cell size of buccal smears through the use of image morphometric software in exfoliative cytology.

From 100 patients who seemed to be in good health, buccal swabs were obtained. The pulp and tooth regions were marked using the Kodak 9600 3D digital imaging device on the CBCT images of the mandibular canines.

Results: Using a paired t test, we found that there was no significant difference between the predicted age and the actual age using cell size and the pulp-tooth area ratio ($P > 0.05$). In the current investigation, CBCT and EC both yielded similarly accurate ages based on the pulp-tooth area ratio.

Keywords: Age estimate, exfoliation cytology, cone beam computed tomography, and pulp-tooth area ratio

INTRODUCTION

An essential aspect of the study of criminal justice is assessing a person's age, whether they are living or deceased. A subspecialty of forensic medicine called forensic age estimate aims to ascertain as precisely as possible the

sequential age of an individual whose age is obscure however who is engaged with a legitimate or judicial proceeding¹. Age assessment of living individuals is now becoming more and more necessary to resolve legal concerns.

OSSIFYING FIBROMA OF THE MAXILLA: CASE REPORT.

Dr. Kalaiselvi Santhosh^{*}, Dr Anu Sushanth. A^{**}

Abstract

Fibrous dysplasia, ossifying fibroma (OF), cemento-ossifying fibroma, florid osseous dysplasia, and localised osseous dysplasia are all fibro-osseous lesions in the jaw bones. The most frequent fibro-osseous lesion is OF, which appears as a slow-growing, well-encapsulated benign neoplasm made of various quantities of bone or cement-like tissue in a fibrous stroma well-demarcated from the neighbouring normal bone. OF is commonly found in the jaw bones, with a preference for the mandible. OF in a patient usually appears as a single lesion and less occasionally as numerous lesions. We discuss clinical features and radiologic findings, histology, and surgical care of a rare case maxilla, as well as a brief literature review.

Key words: *Fibrous dysplasia, ossifying fibroma (OF), Cemento-ossifying fibroma, Florid osseous dysplasia*

Fibrous dysplasia, ossifying fibroma (OF), florid osseous dysplasia, cemento-ossifying fibroma (COF), and localised osseous dysplasia are all examples of fibro-osseous lesions (FOL) of the jaw bones.¹The most common fibro-osseous lesion is OF, which appears as a slow-growing, encapsulated benign neoplasm composed of various quantities of bone or cementum-like tissue in a fibrous stroma, well-demarcated from neighbouring normal bone.² It is most frequent in the jaw bones, particularly the mandible. Because OF contains cementum-like tissue and bone, the terms OF or COF are sometimes used to characterize this tumour. However, the consensus is that both names represent the same underlying histology and so describe the same type of lesion.¹

CASE REPORT

A 53-year old male patient came to dental OP with the chief complaint of a painless swelling in the left mid face region for the past 1 year. History of presenting illness revealed an asymptomatic swelling which started 1 year back on the left side mid-face region. It gradually increased to attain the present size. It is not associated with pain, and/or fever. No history of secondary changes. He had taken medication for about one week, but the

swelling didn't subside. On general examination it was revealed that the patient was afebrile with gross facial asymmetry due to a single, smooth surfaced, well-defined swelling, which was roughly oval in shape and approximately 3 × 2 cm in size, seen in the left middle third region of the face. Overlying and surrounding skin was normal. Swelling extends superiorly 2cm below the infraorbital margin, inferiorly 1cm below line joining angle of the mouth to pinna of ear, medially up to lateral extend of nose, obliterating the naso-labial fold. There was no secondary changes. On palpation, swelling was not warm. Inspection findings with respect to size, shape, margin, and surface were confirmed. The swelling was non tender, hard in consistency and not mobile.

Intra-Oral Examination: Single, smooth surfaced, well defined swelling measuring 3×2cm in size, roughly oval in shape presented in the left side palatal region. Swelling was extending anteriorly from mesial aspect of 24, posteriorly to distal aspect of 27; medially till mid line of the palate, laterally till attached gingiva of 24, 26, and 27. Colour appeared pale, surrounding mucosa and mucosa over the swelling were normal. No visible pulsation or secondary changes. On palpation inspection findings with respect size, shape, margin, extent and surface were confirmed. The swelling was non tender, hard in consistency. Bi-cortical expansion was elicited.

Considering an old aged male patient, with a complaint of a long standing asymptomatic swelling on his upper left back teeth region which was hard in consistency, we provisionally diagnosed as a benign lesion.

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Microbial Contamination of White Coats and Dental Chair Among Clinical Dental Students - A Cross Sectional Study

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Abstract

Introduction: Oral surgical procedures gives rise to aerosols which include saliva, nasopharyngeal secretion, organic particles and blood. The aerosols act as a carrier for various bacteria and hence become a potent source for infection. Oral surgical procedures are highly prone to create contamination of aerosols and pathogens which arise from the blood. White coats worn by dentists and the dental chair are highly potent to be contaminated with bacteria and has been an important risk factor in the transmission of infection in the hospital. There is very little evidence available in the current literature regarding contamination of white coats worn by dentists and contamination present in the dental chair. With this background this study was designed to determine the level and type of bacterial contamination on the white coat and the dental chair in the department of oral and maxillofacial surgery at Karpaga Vinayaga Institute of Dental Sciences, Madhuranthagam, Chengalpet.

Materials and method: All the participants were subjected to pre-tested self-administered questionnaire to assess their perception on contamination of white coat and the frequency of washing. Samples for the study were taken from the white coats of undergraduate final year students, interns and various sites of dental chair. Sampling was carried out by an inert vector and the microorganisms were recovered later for analysis. Sterile cotton swab, and Stuart's transport media with proper microbiological quality control check which were Approved by Clinical Laboratory Standards Institute were used.

Result: Among 200 students, participants more than half of the students (60%) stated that the number of white coats used in a week was one, of which 75% were final year students and 45% were interns. It was found to be statistically significant ($P=0.032^*$). Majority of the final year students (70%) reported that their white coat was last washed a week ago and there was a statistically significant difference found between final year and interns ($P = 0.021^*$). Almost 50% of interns got their white coats washed twice a week and 70% of final years once a week. There was a statistically significant difference found between final year and interns ($P = 0.024$). More than half (55%) of the study participants wear their white coats before entering the respective department or laboratory, of which (87% were final years and (23%) were interns and it was found to be statistically significant ($P=0.036^*$). Interestingly, a greater number of students (90%) agreed that they never had the practice of exchanging their white coat with their colleagues some or the other time, of which 88% were final years and 92% were interns.

Conclusion: White coats have been shown to harbor potential contaminants and may have a role in cross infection of pathogenic microorganisms. Thus current study highlight's the situation of dental cross infection in the form of Students perception, attitude and practice of having more than one white coat, periodic washing of white coats.

Key words: dental students, microbial contamination, preclinical, white coats

INTRODUCTION

Infection from dental procedure is through direct and indirect transmission. Direct includes transmission through aerosol (oral fluids, nasopharyngeal secretion and blood), indirect transmission through indirect mode (equipment and surfaces contamination) and airborne pathogens by inhalation^[1,2] Aerosol are a very potent source of bacterial infection and can cause cross infection^[3,4]

The white coat worn by dental students, serve as a medium of protection from contamination. Even with awareness of individual protection, it is observed very often students wear their white coat in dining rooms, canteen, and other shopping areas, making the environment prone for cross contamination^[5,6]



**REVIEW OF ORAL SUBMUCOUS FIBROSIS: NEW
CONCEPTUALIZATIONS INCLUDING ETIOPATHOGENESIS
AND AYURVEDIC THERAPIES**

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Dr.K.R.Shakila⁵, Dr.Aravindh Swamy.R.M⁶,**

Abstract:

Inflammation and increasing fibrosis in the submucous region are the hallmarks of oral submucous fibrosis, a precancerous condition that reduces tongue protrusion, an intense burning sensation, and trismus before making it difficult to open the mouth. Squamous cell cancer and hearing loss may develop as a result of negligence and untreated OSMF in advanced stages. Oral health issues are brought on by some bad human behaviours, such as chewing tobacco, pan masala, and areca nuts. Of them, oral submucous fibrosis (OSMF), oral mucous lesion (OML), leucoplakia, and erythroplakia are the most prevalent. OSMF is now recognised on a global scale as being an Indian disease with the greatest prevalence of oral cancer. Numerous classifications based on histology, clinical grades, stages, types of cases, functional stages, etc. have been described in the medical literature over the years. Every classification offers benefits and drawbacks on its own. This study demonstrates current understanding of all reported classes, making it valuable for early diagnosis and treatment in academic and research settings. Etiopathogenesis factors have also been successfully covered in-depth in this case. This study aims to impart knowledge on the comprehensive use of ayurvedic medicines for OSMF. Here, we spoke about how ayurveda medicine is a far superior option than all other types of surgical and nonsurgical treatments. It is easier to treat the condition when habits are stopped and ayurvedic medicines are used properly in the early stages of OSMF.

Keywords: Oral submucous fibrosis (OSMF), Oral mucous lesion (OML), TMF, Areca nut, Collagen, Burning sensation, Blanching, Fibrosis, Carcinoma, Ayurvedic medicines.

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MUCORMYCOSIS – A REVIEW ON PATHOGENESIS, CLINICAL TYPES AND MANAGEMENT.

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ABSTRACT Mucormycosis is a rare invasive fungal disease responsible for significant morbidity and mortality in immunocompromised patients, especially those with haematological malignancies, hematopoietic stem cell transplant recipients, and patients who undergo chronic high-dose corticosteroid treatment. It is an Angio invasive fungal infection caused by fungus belonging to the order Mucorales. Recently, it was discovered that COVID-19 and mucormycosis are inextricably linked. A causative link between COVID-19 and mucormycosis has yet to be shown, glucocorticoids, deteriorating blood glucose management, and viral-induced lymphopenia have all been implicated in the development of mucormycosis in COVID-19 patients. Diagnosis of mucormycosis is challenging and relies on a combination of a suggestive clinical picture, predisposing factors, compatible radiological findings, and histopathological and/or microbiological evidence of Mucorales which is highly dependent on the available techniques and trained personnel. The present review focuses on the brief summary of mucormycosis, its pathogenesis, clinical types and symptoms and its management.

KEYWORDS : Mucormycosis, Fungal infections, Fungal diseases, COVID - 19, Corticosteroids

INTRODUCTION

Mucormycosis is an Angio invasive fungal infection caused by fungus belonging to the order Mucorales. The disease was first described in 1876 by Fürbinger, Germany in a cancer patient whose right lung showed a haemorrhagic infarct with fungal hyphae and a few sporangia [1]. The fungal infection mucormycosis, also known as zygomycosis, is caused by moulds named mucormycetes. Fungi can be found in a variety of environments, including soil, manure, rotting plants, and leaves [5]. Zygomycetes is derived from the Greek word 'zygos' for balance. The majority of Zygomycetes reproduce clonally (asexually) by producing nonmotile (aplano-spore) mitospores ranging in size from 3 to 11 μ m. They are formed in many or few spored sporocarps (sporangia and sporangiola/merosporangia, respectively) and are soil-, air-, feed-, and food-borne. Whittaker initially referred to the Zygomycetes as the 'Phylum des Zygomycetes' (phylum Zygomycota) [6]. Mucormycosis comes in a variety of types, including disseminated, rhino cerebral, pulmonary, cutaneous, and renal mucormycosis. Fungal infections are more common in people on steroids, diabetics, immunocompromised patients, patients with haematological malignancies, and solid organ transplant recipients. Recently, it was discovered that COVID-19 and mucormycosis are inextricably linked [5]. The newly discovered coronavirus (SARS-CoV-2) pandemic is still doing havoc in numerous countries of the world, including India [2]. Although a causative link between COVID-19 and mucormycosis has yet to be shown, glucocorticoids, deteriorating blood glucose management, and viral-induced lymphopenia have all been implicated in the development of mucormycosis in COVID-19 patients [4].

Epidemiology:

The annual incidence of mucormycosis in India rose from 12.9 cases in the years 1990-1999 to 89 cases in the years 2013-2015. In southern India alone, the number of cases was 18.4 per year in the years 2005-2015. The estimated prevalence of mucormycosis in India is 70 times higher than the global prevalence, which is 0.02-9.5 cases per 1,000,000 people [5]. Immunocompromised patients, in particular those suffering from the repercussions of uncontrolled diabetes, bone marrow or solid organ transplantation, corticosteroid

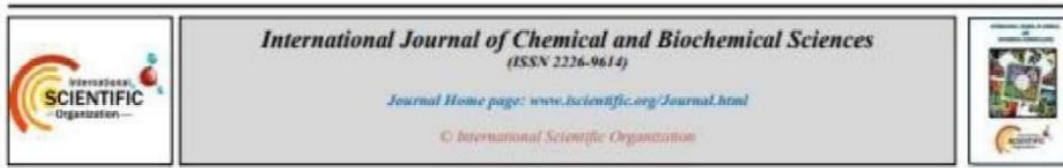
medication, haematological malignancy, and trauma, are more vulnerable to the infection. Mucormycosis mortality and morbidity rates vary depending on the organ affected by the infection, the causative fungal species, and the patient's medical status; for example, sinus infections resulted in 46% mortality, while pulmonary and disseminated mucormycosis infections resulted in 76% and 96% mortality, respectively. Patients receiving stem cell and solid organ transplantation have a greater chance of survival, as evidenced by mortality rates of 8% and 2%, respectively [3].

Causative Agent:

Inhalation, ingestion, or direct inoculation allow fungus spores to enter the human body. *Rhizopus arrhizus* (formerly *Rhizopus oryzae*) is the most prevalent species worldwide [1]. A recent study of soil samples from different geographical areas in France discovered *Rhizopus arrhizus* (synonym: *Rhizopus oryzae*), *Mucor circinelloides*, *Lichtheimia corymbifera*, *Rhizopus microsporus*, and *Cunninghamella bertholletiae* to be the most infectious via inhalation or ingestion of contaminated food, even though detection in nasal mucus is hampered by mucociliary transport-mediated removal. Mucoralean fungi are feared for causing lethal disease in a broader variety of human and animal hosts than other opportunistic fungi if the predisposing risk conditions become favourable for infection [3].

Predisposing Factor:

Mucormycosis can cause the following diseases: (1) rhinocerebral mucormycosis, which can infect the sinuses and the brain, causing fever, swelling of one side of the facial organ, black lesions inside or outside the mouth, headache, and sinus congestion; (2) pulmonary mucormycosis, which mainly infects the lung, causing chest pain, breathing disturbance, fever, and cough; and (3) cutaneous mucormycosis, which causes local skin infections like ulcers, redness and swelling; (4) gastrointestinal mucormycosis, which is uncommon in adults but more common in premature neonates and causes nausea, vomiting, gastrointestinal bleeding, and abdominal pain; (5) disseminated mucormycosis, which occurs in patients with multiple medical complications, making symptomatic



Template & Guidelines for reporting on Cone Beam Computed Tomography scans: a review

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Abstract

The aim of this review is to know the proper way of viewing CBCT scan and to write a report in a systematic way. A radiographic report's goal is to provide a correct interpretation of images to aid in the diagnosis process and, where necessary, to suggest appropriate patient management. It is part of the patient's clinical records. This presentation explains the imaging chain involved in the cone beam computed tomography (CBCT) method, from reference through reporting on a CBCT scan. It offers guidance on what information is needed before & after a CBCT scan, as well as how to improve the viewing circumstances. Finally, it outlines a strategy for creating a methodical, thorough, and customized CBCT radiographic report. It is aimed at endodontists, implantologist, periodontist, orthodontist, clinicians, and radiologists reporting on CBCT scans of the dentoalveolar region. The quality, accuracy, and use of a report are subject to medicolegal scrutiny so such report should be perfect and clear.

Keywords: CBCT, CBCT Report, CBCT viewing condition.

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1. Introduction

Over the last three decades, there has been a slow increase in the use of CBCT in all departments of dental specialty with a continuing rise in the number of clinical studies demonstrating the benefit of CBCT on diagnosis, treatment planning, decision-making and reducing practitioner stress levels. As in any disruptive technology introduced to a profession, the education lags far behind the technological advance. This is especially true of CBCT imaging. Unfortunately, there isn't a simple solution and there's no straightforward method for dentists to quickly refresh their knowledge. It takes time, effort, and sometimes even some direction to comprehend CBCT. Manufacturers, who were also quick to recognize the appeal of this technology, frequently fail to offer even the most fundamental training so that professionals do not unintentionally hurt patients. Reporting the findings in a CBCT volume is probably the most essential process in the total diagnostic evaluation of a patient, even if it is something as simple as implant planning. After reporting the findings, it is important to write a proper structured report in a systematic way, it requires a proper guideline for better understanding of the patient and prescribed doctor. This article throughs a light on how to view, what to view, where to view and to present

it in a structured way for easy understanding of patient and prescribed doctor [1,2].

2.The imaging chain

The stages of imaging are referred to as the "imaging chain," which begins with the decision to capture an image and finishes with the reporting of the image. With intraoral radiography, for instance, the dentist typically serves as the referrer, practitioner, operator (radiographer), and operator (reporting). However, with CBCT, the tasks are typically not performed by the same person; rather, a team frequently participates in the imaging chain. The various duties and procedures depend on the laws and regulations governing radiation safety in each nation. It is best practice to have the imaging chain well outlined, documented, and approved by all parties, especially when all of the functions are not performed at the same location. In order to create an actionable radiography report for narrow field-of-view cone beam computed tomography (CBCT) scans used for diagnosis and treatment, this article set out to first create the ideal viewing circumstances [3,4].

Applications Of Mri On Tmd-A Systematic Review

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Abstract

Background: Imaging of the temporomandibular joint (TMJ) is continuously evolving with advancement of imaging technologies. Many different imaging modalities are currently used to evaluate the TMJ. Magnetic resonance imaging is commonly used for evaluation of the TMJ due to its superior contrast resolution and its ability to acquire dynamic imaging for demonstration of the functionality of the joint.

Objective: This systematic review is undertaken to comprehensively explore the use of MRI on various TMD for its diagnosis and planning treatment accordingly.

Methodology: Systematic search of published literature using PUBMED (2009 to September 2019). The search's key words used were TMJ disorders AND Magnetic resonance imaging. Studies of different designs (e.g., clinical trials, clinical studies case series/reports, prospective and retrospective studies).

Main Results: We retrieved 329 articles and found 13 articles that fulfilled our inclusion criteria.

Conclusions: This article will be a useful reference for maxillofacial radiologists and orofacial pain specialists as knowledge of disc abnormalities of TMJ is important for optimal patient care.

Keywords: Temporomandibular joint, Magnetic resonance imaging, Diagnosis, Treatment planning

INTRODUCTION

The temporomandibular joint is a composite ginglymus-artroidal joint that is composed of the condyle, glenoid fossa, articular tubercle, and joint capsule. Temporomandibular disorders are the leading cause of maxillofacial pain, involving changes in the masticatory muscles and internal derangement of the temporomandibular joint (TMJ).⁽¹⁾

Pain related to the temporomandibular joint (TMJ) is common in the general population. Only about 3%-7% of the patients with pain related to TMJ seek medical attention. Although TMJ disorders or dysfunctions are the most common clinical conditions for imaging referrals, pathologies specific to the bone and the joints are also common. Different imaging modalities are available to image the TMJ, each with inherent strengths and weaknesses. Magnetic resonance imaging (MRI) is being considered the most widely used diagnostic technique of choice.⁽²⁾

Magnetic resonance imaging (MRI), considered the gold standard for the diagnosis of head and neck soft tissue abnormalities, particularly TMJ changes, provides excellent contrast in soft tissues, without radiation exposure or surgical invasion.

Intraarticular abnormalities are readily visible on MRI images, providing further information not available with other imaging modalities. Magnetic resonance imaging (MRI) is unique in that there is no associated risk of ionizing x-ray. Despite its wide use, its actual diagnostic efficacy in TMJ disorder has not been systematically reviewed.⁽³⁾

The purpose of the present review is to systematically review the available literature regarding importance, applicability, and practicality of MRI image registration for TMJ, assessment and planning the treatment based on this.

MATERIALS AND METHODS

Search Strategy

Original Article

Evaluating the Prevalence, Location, Morphology of Accessory Maxillary Sinus Ostia: A Retrospective, Cross Sectional Study using Cone Beam Computed Tomography

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Abstract

Background: The purpose of this study was to evaluate accessory maxillary sinus ostia (AMO) with the use of cone beam computed tomography (CBCT) images, which could be valuable for the assessment of maxillary sinuses before sinus-related surgeries and any treatment in maxillary posteriors. **Objective:** To evaluate the prevalence of accessory maxillary sinus ostia, the location of accessory maxillary sinus ostia and the morphology of accessory maxillary sinus Ostia using CBCT images. **Materials and Methods:** CBCT images of 100 patients were evaluated using NNT viewer software. AMOs were seen in all three sections (thickness: 0.341 mm). IBM SPSS software version 24 was used for statistical analysis. **Results:** Hundred CBCT images (43 M and 57 F) were analyzed. A total of 146 AMOs were identified. Among the 146 AMOs, 85 were presented with one and 61 with multiple AMOs. Of the majority of the AMOs, 108 were located within Nasal Fontanelle (NF) Hiatus Semilunaris (HS) and the remaining 38 were located outside NF/HS and 85 were ovoid, 39 round, and 22 slit-shaped. **Conclusion:** Dentists must recognize the prevalence, location, and morphology of AMO for judicious use of CBCT in preoperative treatment planning in the posterior maxilla.

Keywords: Accessory maxillary sinus ostium, CBCT, maxillary sinus, primary maxillary sinus ostium

INTRODUCTION

Dentists and otorhinolaryngists show great interest in the maxillary sinus which is the largest of all the paranasal sinuses.^[1,2] Before functional endoscopic sinus surgeries and sinus-related dental surgeries, it is critical to diagnose the health of the maxillary sinuses, such procedures may alter the sinus's physiological condition, thus increasing the likelihood of postoperative sinusitis.^[2,3] To reduce such risk, a thorough radiological assessment of the maxillary sinus is imperative before surgical interventions in the sinus region.^[1,4]

The primary maxillary ostium is a natural opening that aids in the maintenance of a physiological and healthy maxillary sinus.^[5-7]

Any extra orifice other than the primary maxillary ostium (PMO) is referred to as an accessory maxillary ostium.^[8-10] The existence of an AMO allows for increased ventilation of the maxillary sinus, but it also causes inverse drainage from the middle meatus into the sinus.^[10] This results in a decrease in nitric oxide levels and mucus accumulation in the sinuses,

which can lead to mucosal thickening, mucous retention cyst development, and maxillary sinusitis.^[11] AMO is one of the anatomic modifications that may have a role in the development of chronic maxillary sinusitis.^[11]

Cone beam computed tomography (CBCT) has been proven to be reliable for the evaluation of structures in the maxillary sinus. Therefore, this study was done to evaluate the coincidence of the prevalence, location, and morphology of accessory maxillary sinus ostia.

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A simplified technique of mandibular complete denture fabrication for a condition of ankyloglossia – A case report

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ABSTRACT

Rationale: During the construction of a complete denture, obtaining adequate retention is always a problem in the mandibular denture. In the case of ankyloglossia, the retention of mandibular denture is severely compromised due to a decrease in neutral zone space and thick musculature of the tongue web attached to the mouth's anatomical floor. **Diagnosis:** The patient was diagnosed as completely edentulous with ankyloglossia. **Intervention:** The intervention that was done to this condition was a modification of the master cast before the final wax-up and processing of the denture. **Outcomes:** Through the modification that was done to the master cast, an acceptable level of retention was attained. **Lessons:** This case report describes a simple modification that is done to achieve optimal retention for a patient with ankyloglossia and to maintain that retention during function.

Key words: Ankyloglossia, lingual seal, mandibular complete denture, retention

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INTRODUCTION

Ankyloglossia or tongue – tie is referred to as a condition where the lingual frenum of the tongue web is attached to the mouth's anatomical floor and subsequently restricts the movement of the tongue. This condition contributes to speech defects, especially sound articulation, dental problems, and a persistent gap between the mandibular incisors.

In general, while fabricating a complete denture, tongue is always a disturbing factor during the complete phase of prosthesis making. Compared to the maxillary denture, obtaining retention and stability in the mandibular denture is always a challenging one. In a severely resorbed mandibular arch, retention is gained through proper recording of the

sublingual crescents.^[1] In a condition where the tongue movements are restricted like ankyloglossia, the lingual borders cannot be recorded as the individual will not be able to perform all the active functional tongue movements.

Previous literature^[2,3] has reported only frenectomy as a treatment option for ankyloglossia before any other dental procedure and also there is inadequate literature available on prosthesis making for such a condition. The objective described in this case report is a simplified modification that is done to the mandibular denture, fabricated for a patient with a condition of Ankyloglossia.

CASE REPORT

A 52-year-old male patient presented to the prosthodontics department with the main complaint of missing teeth in the

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Original Article

Effect of Dietary Amino Acids L-Arginine and Lysine on Implant Osseointegration

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ABSTRACT **Background:** Low protein diets have been linked to decreased bone strength in humans. Arginine and lysine can help improve the healing process and stimulate growth factors. **Aim:** To evaluate if dietary arginine and lysine combination aids in reducing the time frame for osseo-integration process and bone formation in animal models. **Materials and Methods:** Controls (Group I) and Experimental (Group II) consisted of twelve New Zealand rabbits. Animals in the experimental group were fed a conventional pellet food, water, and the amino acids L-Lysine and L-Arginine (Biovea, USA), whereas those in the control group were offered a standard diet. In both groups of animals, titanium implants measuring 2.5mm*6mm were implanted in each tibial osteotomy. At the end of two weeks, four weeks, and eight weeks, the animals were euthanized. The tibial bone was removed and preserved in 1% formalin. The samples were analysed histologically for presence or absence of Necrosis, presence or absence of clot formation, Vascularization, Fibroblast, Osteoblasts and Osteoid Bone growth. **Results:** Histological outcomes on vascularization, fibroblasts, osteoblasts, osteoid bone growth inferred no significant variation between the control and experimental groups after 8 weeks (P>.05). **Conclusion:** Vascularity, clot organisation, osteoblasts, fibroblasts, and osteoid bone production in the protein fed experimental group animals were better in initial stages of healing when compared to control groups.

KEYWORDS: Amino acids, Bone formation, healing, osseointegration, vascularization

INTRODUCTION

The amino acids are used as adjunct treatment therapy in conditions such as arthritis, muscle mass building, malnutrition, osteoporosis, HSV, cancer therapy, leukemia, skin cancer, and prostate cancer.^[1,2] During the treatment procedures, the amino acids are administered through orally, intravenously, or intramuscularly.^[3] While several amino acids have been linked to impacts on soft tissue, musculature, and neural conduction, amino acids such as L-Arginine and L-Lysine have been linked to osteogenesis and metabolism.^[4,5]

Amino acids such as arginine and lysine have been shown to speed up the healing of fractures by increasing microcirculation, augmenting growth hormones, and increasing collagen synthesis. The nitric oxide synthase enzyme pathway is used to metabolize L-arginine in the body. The amino acid


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Original Article

Biomechanical Properties of Maxillary Second Molar with Different Endodontic Cavity Designs - A Finite Element Analysis

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INTRODUCTION

Endodontics has undergone tremendous advancements over the past few decades with the aid of newly emerging techniques, materials, and instruments. Endodontic therapy comprises access cavity preparation, cleaning, shaping, debridement, disinfection, and obturation of the root canal system.^[1] Access cavity preparation is the most important and challenging step during the endodontic treatment procedure, with a prime objective of better visualization, debridement, and instrumentation, though the treatment outcome is to obtain a perfect seal coronally and apically.^[2] Endodontically treated teeth have a compromised fracture resistance due to the removal of a large amount of tooth structure, rendering the teeth more susceptible to fracture.^[3]

ABSTRACT

Aim: To evaluate the biomechanical properties of maxillary second molars with three different cavity designs – Traditional, Conservative, and Extended – endodontic cavities using the finite element analysis method. **Materials and Methods:** Three finite element models of a maxillary second molar with three different types of endodontic cavities were designed and restored. Each model was subjected to three different force loads directed at the occlusal surface. The stress distribution patterns and the maximum von Mises (VM) stresses were calculated and compared. **Results:** Vertical force of multipoint load on the occlusal surface and lateral forces to the palatal cusp showed the maximum stress values in the extensive cavity design, followed by the traditional cavity design and then the conservative cavity design. **Conclusion:** The VM stress distribution in the conservative endodontic cavity was minimal when compared to other access cavity designs.

KEYWORDS: Conservative endodontic cavity, endodontic cavity, extended endodontic cavity, finite element analysis

Structural integrity is an important factor that determines the biomechanical properties of an endodontically treated tooth. Preservation of the maximum tooth structure is essential to optimize its biomechanical behavior.^[4] Earlier studies emphasized the importance of preserving peri-cervical dentin and insisted that loss of the marginal ridge or dental cusp mainly affected the biomechanics of the endodontically treated teeth.

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Awareness among General Public in Relation To Periodontal Disease and Systemic Health

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ABSTRACT:

BACKGROUND : Oral health has influence on overall well-being of an individual. Periodontal disease predominantly mediated by Gram-negative bacteria causes inflammation of the supporting tissues of teeth. Microorganisms and their products disseminate through blood and aggravate conditions such as coronary heart disease, angina, atherosclerosis, stroke, diabetes mellitus, preterm labour, chronic obstructive pulmonary disease. It is important to know the knowledge about oral and systemic health among the public for planning health education and services.

AIM : To access the awareness among general public in relation between periodontal disease and Systemic health.

MATERIALS AND METHODS : 200 patients were grouped into Urban and rural groups. Each participants were given 12 YES/NO type questions establishing the link between periodontal disease and systemic health. The response were complied, computed, and analyzed for agreement.

RESULTS : Urban and rural population had a mean score of 3.55 and 2.55 against a score of 12. In GROUP 1 and 2, the maximum score was 3 and 4 and minimum score was 2 and 1 respectively.

CONCLUSION :

The result inferred clearly showed that both the urban and rural population had lack of knowledge about the relationship between the oral and systemic health.

CLINICAL SIGNIFICANCE:

Most studies have proven that periodontal disease contributes in worsening the systemic disease. As periodontal disease is preventable and treatable, proper health education about periodontal medicine will motivate the patient towards maintaining periodontal health and systemic health.

KEYWORDS: Periodontal disease, Periodontal medicine, Systemic health

I. INTRODUCTION

Periodontal disease is one of the common conditions that is responsible for a chronic inflammatory challenge in the body. The focal infection theory proposed by *Hunter* in 1910 was being resurrected. According to *Hunter's* theory, bacteria and their products from local infections could be disseminated throughout the body and cause diseases in other organs. Oral health is an indispensable part of general health and can influence the overall well-being of an individual. Periodontal disease is predominantly mediated by Gram-negative bacteria resulting in inflammation of the supporting structures. As junctional epithelium and sulcular epithelium in the gingival sulcus serve as the most weakest junction in the human body dissemination of microorganisms and their products through the vascular route to distant part of the body is relatively high.¹ Most studies have established the relation between periodontal disease and systemic health. Periodontal pathogens found in organs such as heart, lungs, uterus are shown to aggravate conditions such as coronary heart disease; coronary heart disease-related events such as angina,



A CASE REPORT OF SOLITARY GINGIVAL OVERGROWTH IN A YOUNG FEMALE PATIENT

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ABSTRACT Gingiva is a common site of reactive lesions in the oral cavity. Peripheral ossifying fibroma is a relatively uncommon gingival overgrowth that is histopathologically characterized by discrete formation of osteoid tissue and dystrophic calcification within the connective tissue. This article presents a case report of a 33 year old female with a gingival hyperplastic growth in the maxillary anterior region, in which the consistent clinical and microscopic findings led to the diagnosis of the lesion as peripheral ossifying fibroma.

KEYWORDS : Reactive lesions, Gingival hyperplasia, Ossifying Fibroma, Pyogenic Granuloma

INTRODUCTION: Gingival overgrowth of reactive origin is most commonly seen in gingiva. Some of the common reactive hyperplastic lesions of the gingiva are Pyogenic Granuloma, Peripheral Giant cell Granuloma, Peripheral Ossifying Fibroma and Traumatic fibroma. The present article highlights a case report of Peripheral Ossifying Fibroma (POF) in a young female patient, about the clinical presentation, diagnosis and management. Calcifying or Ossifying Fibroid Epulis, Calcifying Fibroblastic Granuloma, Peripheral Cementifying Fibroma are some of the synonyms of Peripheral Ossifying Fibroma(POF).

Case Report: A 33 year old female patient reported to the Department of Periodontology, Karpaga Vinayaga Institute of Dental Sciences, with the complaint of swollen gums in relation to right upper front tooth region since one month. Patient had a mild discomfort during closure of mouth. No history of any pain or discharge was reported. Patient's Familial history, Past Medical and Dental history were insignificant. On General Examination, there were no significant findings and extraoral examination. On Clinical Examination, the lesion was present in the Interdental Papilla on the labial side in relation to 21 and 22 measuring about 3 × 4 × 5 mm in size. The swelling was ovoid in shape, pinkish in colour, fibrotic in consistency with evidence of Bleeding on Probing (Fig 1). Owing to the clinical presentation, the hyperplastic gingival growth was provisionally diagnosed as Pyogenic Granuloma, with the differential diagnosis of Peripheral Ossifying Fibroma (POF). Patient was subjected to Intra Oral PeriApical Radiograph (IOPA) which revealed no significant changes except for mild crestal bone loss (Fig 2). This mild alveolar bone loss could be due to the chronic presence of local irritants or the pressure caused by the soft tissue growth. Hematological investigations revealed normal RBC, WBC counts and hemoglobin levels. After obtaining consent from the patient, an excisional biopsy of the gingival growth was done under Local Anaesthesia (LA)(Fig 3). Following excision, the patient was instructed to use 0.12% Chlorhexidine mouthrinse for about two weeks. The wound healing was eventful. The excised tissue was subjected to Histopathologic Examination. Haematoxylin and Eosin (H and E) section revealed squamous epithelium lined tissue where epithelium is ulcerated deeper to lining epithelium. The connective tissue

composed of spindle shaped cells with plump nuclei with moderate amount of eosinophilic cytoplasm, arranged in sheets and bundles (Fig 4). They were interspersed by mature lamellar bone which exhibited osteoblastic rimming. These findings in correlation with the clinical findings were consistent with the features of Peripheral Ossifying Fibroma. No recurrence was observed during the patient follow up of 3 month period (Fig 5). Few reasons for recurrence could be, difficulty to access the lesion resulting in incomplete removal or failure to eradicate the local irritants.



Fig 1: Pre operative view



Fig 2: IOPA in relation to 21,22 showing mild alveolar bone loss



Fig 3: Surgical Excision of Gingival Overgrowth

Scope of Teledentistry during the Trying Times of COVID-19 Pandemic: A Patient Perspective Questionnaire Survey

MANASA PRABAKAR¹, HEMALATHA RAMAKRISHNAN², SATHYA PRATHIBA PARTHIBAN³,
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ABSTRACT

Introduction: Teledentistry has provided a glimmer of hope for patients who require treatment, but are limited to their homes owing to Coronavirus Disease-2019 (COVID-19) restrictions. Like any other professional careers, dentistry also had to switch to a new normal mode of consultation and teledentistry came to its aid. With the support of advanced technologies dental care was made possible even though face to face interactions were to be refrained due to the curfew restrictions.

Aim: To assess the scope of teledentistry from a patient's perspective.

Materials and Methods: The survey was designed as a descriptive cross-sectional study conducted in the Department of Periodontics, Karpaga Vinayaga Institute of Dental Sciences, Chengelpet, Tamil Nadu, on dental patients of Chennai, India, from April 2021 to May 2021 who made use of Telemedicine for dental consultation. The study population included those who sought teledentistry and the study included 100 participants. A computer aided self-administered questionnaire was designed and validated. Practicing dentists were requested to circulate a questionnaire containing 10 questions that assessed scope

of teledentistry from patient's perspective, to their patients at the end of their teleconsultation after obtaining consent. A total of 94 responses were obtained successfully out of 100 participants. Descriptive analysis of the obtained data was done using International Business Machines Statistical Package for the Social Sciences (IBM SPSS) software version 22.0.

Results: The mean±Standard Deviation (SD) age of the study participants was 33±2.5 years, there were 51 males and 43 females. A 57.5% (n=54) of individuals made the best use of teledentistry during the lockdown and 59.6% (n=56) of the respondents felt that teledentistry was safe as it prevented the risk of unnecessary exposure and cross-infection. Of all, 79 (84.04%) respondents answered that they support teledentistry in the future. Suggestions were received requesting reduction in consultation fee and to increase consultation timings.

Conclusion: Teledentistry proved to be an excellent alternate mode of dental service during the COVID-19 pandemic crisis. Moreover, it helped to bring down the cross-infection and made health services available to people caught up in inaccessible areas thus, making teledentistry a valuable tool that can be used on a day to day basis

Keywords: Coronavirus disease-2019, Cross-infection, Pain management, Quarantine, Telemedicine, Teleconsultation

INTRODUCTION

The emergence of teledentistry was as early as in the 1960s and the service of which was maximum utilised by space technology sectors and the military [1]. The word "Telemedicine" was coined in 1970s meaning healing at a distance. It denotes the use of Information Communication Technology (ICT) which provides scope for increased access to medical care and information [1]. World Health Organisation (WHO) defined Telemedicine as, the delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of healthcare providers, all in the interests of advancing the health of individuals and their communities" [2].

Telemedicine being an umbrella term it has various branches and one such branch of Telemedicine is teledentistry. As defined by Cook in 1997, teledentistry is a practice of making use of video conferencing technologies as an aid to diagnose and provide advice over a treatment over a distance [3].

Dental care has been provided mostly through physical examination, wherein technology has provided an opportunity for dentists to communicate with patients. Teledentistry utilises the aid of technological innovations and high-speed internet

networks for connecting the dental care provider and patient to provide timely care and also for sharing of essential information for treatment planning and dental consultation [4]. Dental healthcare professionals encountered a tough time at the time of COVID-19 pandemic, as dental consultation involves face to face interaction with patients. The occurrence of pandemic and the lockdown curfew following it brought things to a standstill, where the only way the dentist could provide care to the patients was through teleconsultation. Teledentistry made easy the tasks of history taking and obtaining consent and to an extent frame treatment planning thereby, sparing an initial visit to the dentist [5]. A second appointment face-face could be directly done to carry on the procedure.

Teleconsultation may prove to be an effective form of consultation, as the patient feels at ease and more comfortable being at home, as it spares certain anxiety related issues, which few patients experience in physical consultation [6]. Teleconsultation has an advantage of preventing the patients from unwanted exposure to COVID-19 patients or asymptomatic carriers including healthcare workers [7]. This minimises the risk of healthcare workers as well from getting exposed to asymptomatic carriers.

Consultation through Telemedicine is an excellent option to save resources as well as to improve patient healthcare services. For

Comparative analysis of the red-complex organisms and recently identified periodontal pathogens in the subgingival plaque of diabetic and nondiabetic patients with severe chronic periodontitis

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Abstract:

Aim: This analytical case-control study sought to evaluate the presence of the recently established putative periodontal pathogen organisms, *Filifactor alocis* and *Fretibacterium fastidiosum*, against the levels of the already established red-complex pathogens, *Porphyromonas gingivalis*, *Tannerella forsythia*, and *Treponema denticola*, in chronic periodontitis sites of patients with and without diabetes mellitus. **Materials and Methods:** Fifty-six subgingival plaque samples were obtained from the deepest sites of subjects diagnosed with severe chronic periodontitis with and without diabetes mellitus. These patients were categorized into two groups of 28 each. Clinical parameters were recorded and microbial analysis was done with quantitative polymerase chain reaction, and the bacterial counts of *F. alocis* and *F. fastidiosum* were determined and then compared with that of the red-complex organisms. **Results:** The bacterial counts were found to be higher in the diabetic group than that in the nondiabetic group, which was statistically significant for *T. forsythia* ($P < 0.037$) and *T. denticola* ($P < 0.003$). The study found very less number of *F. alocis*, which was slightly higher in the diabetic group. When correlating the bacterial levels within the nondiabetic groups, the red complex species had a strong positive correlation both individually with *F. alocis* ($P < 0.0001$) and *F. fastidiosum* ($P < 0.001$) and also when the newer species was clubbed together as a cohort ($P < 0.0001$). Whereas, in the diabetic group, although there was a positive correlation, there was no statistical significance. **Conclusion:** The results of this study highlighted the presence of a definite difference in the subgingival microbiota of both the patient groups evaluated. They also indicate that of the newly identified microorganisms, both the cohorts had higher levels of *F. fastidiosum*, suggesting a pathobiont-like role of this bacteria among both these periodontitis groups. *F. alocis* was comparatively lesser in number among the cohorts evaluated, and the cause for this decreased level of *F. alocis* needs to be further evaluated. The results of the present study depict a higher bacterial load in the diabetic group when compared to the nondiabetic group. Further, the study demonstrates a strong correlation between the red-complex species and the newer organisms in the nondiabetic group.

Key words:

Filifactor alocis, *Fretibacterium fastidiosum*, keystone pathogen, pathobiont, red-complex organisms

INTRODUCTION

Periodontitis is a multifactorial chronic inflammatory disease affecting the supporting structures, the initiation and progression being the result of interplay between essential bacterial factors and the host susceptibility. Our interpretation of the pivotal role of microorganisms in the etiology of periodontitis has gone through a sea change in the last 50 years.

The “polymicrobial synergy and dysbiosis” (PSD) model suggests that commensals that are part of a biofilm, once it has become dysbiotic, would in turn amplify the inflammatory state and

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Maxillary Sinus Floor Augmentation in Atrophic Alveolar Bone Using Osteotome Technique with a Crestal Approach as Indirect Method: A Case Report

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Abstract: There are various sinus augmentation treatments, and factors influencing dental implant placement and sinus augmentation survival rates are still up for debate. In this case report, an indirect procedure using an osteotome technique and crestal approach was used. When there is more than 6 mm of remaining bone height and a rise of 3–4 mm is anticipated, the osteotome procedure may be advised. If the resorption is more advanced, a direct procedure involving a lateral antrotomy must be carried out.

Keywords: Sinus lift; osteotomy; sinus augmentation.

Introduction:

Maxillary sinus floor augmentation is a surgery done in order to raise the level of alveolar bone in maxilla at its posterior region, around premolar and molar teeth region by raising the Schneiderian membrane and inserting a bone graft [1]. The various terminologies of this procedure are sinus lift, sinus augmentation, sinus graft. As long as tooth is present in the socket, the ridge will be intact [1]. After the tooth has been extracted or lost, it is essential to replace the tooth [1]. On the contrary, if the tooth is not replaced the alveolar bone starts to decrease in height, leaving behind a diminished ridge [1]. Implant procedures become complicated in these cases as it may impinge into the maxillary sinus area due to reduced ridge height [2]. Hence sinus lifting procedure has to be done to increase the ridge height [2]. The goal of the sinus augmentation is to increase the amount of bone that is available to support a dental implant by grafting more bone into the maxillary sinus.

Case Report:

A 30-year-old female was referred to the Department of periodontology with a chief complaint of missing tooth in relation to upper right back tooth region for the past 6 years and wants to replace it. The patient was examined and advised for radiovisio-graphy (RVG) which revealed less bone height approaching maxillary sinus [Fig 1]. Hence sinus lift procedure was considered in this case to increase the bone height.

Local anesthesia was given after which a full thickness flap is elevated in the edentulous area in relation to maxillary first molar. By placing a pilot drill with a 2 mm diameter and stopping it 2 mm short of the sinus floor, an osteotomy was performed. [Fig 2& 3]. After approaching the sinus floor, osteotomy is placed and gently tapped with mallet, thereby increasing the area for graft placement [Fig 4& 5]. Subsequent radiographs are taken until sufficient space is created. Once the area was expanded, bone grafts was added and condensed gently, without piercing the sinus floor [Fig 6]. The sinus membrane is more elevated as a result of the increased bone graft's pressure on it. After the flap was roughly cut and stitched, the patient was given post-operative instructions. Regular follow up of the patient was done and the site was accessed. Radiograph was taken after 6 months and there was an adequate bone fill suitable for implant [Fig 7].

Discussion:

Maxillary sinus is the largest paranasal sinus, with a pyramidal structure which has typical measurements of 38 - 45 mm, 23 - 25 mm and 36 - 45 mm of length, breadth and height respectively. The average level of capacity of maxillary sinus is 15 ml [4]. The infraorbital neurovascular bundle is located in the anterior wall and extends from the inferior orbital rim to the maxillary alveolar process. The thin superior wall serves as the orbit's floor [4]. The posterior superior alveolar nerve, pterygoid plexus of veins and internal maxillary artery are located in the pterygopalatine fossa, which is divided by the posterior wall [4]. The lateral wall of nasal cavity being its medial wall, houses the primary ostium. The primary route for secretory drainage passes through this ostium [9]. The lateral wall gives access for the lateral wall sinus transplant operation. It contributes to the posterior maxillary and zygomatic process and creates the buccal aspect of the sinus.

The first sinus lift procedure was done in the year 1975 by Tatum, after which a successful loading of two endosteal implants were done [2]. Prior to the invention of appropriate devices, inflated catheters were used for a large portion of sinus elevation.

There are 2 types of sinus lift procedures which includes direct known as lateral window method and indirect technique known as transalveolar approach. Through a window made in the lateral wall of the maxillary sinus, the sinus membrane is directly seen and

Comparative Evaluation of Novel Herbal Mouthwash with 12.5% Xylitol Mouthwash and 0.7 M Saline Mouthwash on Plaque Control: An Interventional Study

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Abstract

Background and Aim: Among the wide array of herbal plants possessing medicinal values, *Andrographis paniculata* (Nilavembu) stands out as a time-tested premiere medicinal herb. *A. paniculata* (Nilavembu) extracts exhibited varying degrees of inhibitory activity against the growth of all the microorganisms. Hence, this research was made to assess and compare the effect of Nilavembu extract (*A. paniculata*) with 12.5% xylitol mouthwash and control group (0.7 M saline mouthwash) on dental plaque and gingival inflammation. **Materials and Methods:** A double-blinded parallel-arm randomized clinical trial was done among 40 participants aged 20–30 years. Participants were randomly allotted into four groups: Group 1 - Nilavembu extract with 0.7 M saline wash; Group 2 - Nilavembu extract with 12.5% xylitol mouthwash; Group 3-0.7 M saline mouthwash; and Group 4-12.5% xylitol mouthwash. The plaque and gingival status were assessed using oral hygiene simplified index and Loe and Silness index at baseline and end of the study (7th day). Statistical analysis was carried out to compare the effect of all four treatments groups using the Kruskal–Wallis test, Wilcoxon sign rank test, and *post hoc* test; $P \leq 0.05$ was considered statistically significant. **Results:** Among four groups, Group 2 showed a greater mean reduction followed by Group 1 in oral hygiene index score and gingival score. There was a statistically significant difference between the scores of the four groups. **Conclusion:** It can be concluded that *A. paniculata* (Nilavembu extract) could serve as a potential herbal alternative in the therapeutic management of dental plaque and gingivitis.

Keywords: *Andrographis Paniculata*, nilavembu extract, oral health, plaque control

INTRODUCTION

Despite great achievements in the oral health of populations globally, problems still remain in many communities all over the world-particularly among under-privileged groups in developed and developing countries.^[1] Prevalence of oral diseases is very high in India with periodontal diseases (55.4%, 89.2%, and 79.4% in 12, 35–44, and 65–74 years old, respectively) as the second most common oral disease.^[2] Oral plaque biofilms are well established and associated with the development of oral diseases. Thus control of the biofilm plays an important role in the control of oral diseases.^[3]

Mechanical plaque control can be effective but needs to be meticulous and patients have to be highly motivated with an appropriate lifestyle. Consequently, oral care products have

been formulated that contain antiplaque or antimicrobial agents to augment conventional mechanical plaque control activities and interfere with biofilm composition and metabolism, especially at sites that are difficult to clean and are commonly missed during self-performed mechanical plaque control.^[4] The emergence of drug-resistant microorganisms and a list of possible side effects ranging from change in taste to tooth discoloration has increased the desire for an herbal alternative among the population. Another factor playing a role in restricting the use of mouthwashes is the cost of store-bought products.^[5]

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Reflection of Parental Oral Health Literacy on Children's Oral Health Status Using Regression Analysis

ABSTRACT

Background and Objective: The need to measure oral health literacy has led to the development of measurement instruments. The aim of this study was to evaluate the association between parental oral health literacy and children's oral health status in Chengalpattu district and assess the degree to which parental factors explain this association.

Materials and Methods: This cross-sectional epidemiological study took place among 350 children aged from 3 to 9 years and their parents to estimate the children's dental health status by DMFT index, at the child's home. Examiners interviewing the parents administered the Health Literacy in Dentistry scale (HeLD) - a Pre-validated questionnaire to determine their Oral health literacy and questioned them further about their social characteristics and their children's dental health behaviour. Statistical analysis was done using Pearson's Correlation coefficient and Linear regression analysis.

Results: The age of the parents and children were 29.25 ± 4.63 and 7.23 ± 2.83 respectively. Results from Pearson's correlation coefficient shows that the factors that are significantly correlated with oral health status of the children were parent's working status, number of children, type of family and oral health literacy of the parents. Forward Linear regression analysis also demonstrates the same factors that were associated.

Conclusion: The Oral health literacy level of parents was significantly associated with their children's oral health status. Improving parent's Oral health literacy might help strengthen their capacities to promote oral health, thus helping to improve their children's dental health.

Paper Type: Research Article

Keywords: Children's oral health status, Health Literacy in Dentistry scale, Parental Oral health literacy.

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Remineralizing Effect of Commercially Available Two Herbal Dentifrices on human Teeth - An *in vitro* Evaluation

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Abstract

Background: Dental caries is most prevalent oral infections worldwide, characterized by a progressive demineralization that affects the mineralized dental tissues. Although the decline of dental caries prevalence can be attributed to the widespread use of dentifrices that contain fluoride, there is a need for an advanced alternative fluoride remineralizing dentifrice preferably, herbal-based dentifrices. **Aim:** To investigate and compare the remineralization effect of demineralized human enamel using two herbal toothpastes via *in vitro* method. **Materials and Methods:** An *in vitro* study was conducted on 40 extracted natural teeth. Crowns and roots were sectioned at cemento-enamel junction, and crowns were further sectioned to buccal and lingual halves. All the teeth samples were examined for baseline hardness level by Vickers hardness tester. Samples were kept for demineralization continuously for 48 h and postdemineralization hardness values were also evaluated. Samples randomly divided and allocated into two groups for remineralization procedure. Group A - Dabur Red ($N = 20$) and Group B - Patanjali Dant Kanti ($N = 20$). Remineralization using two dentifrice slurries was performed for 10 days and postremineralization hardness estimated. Data were collected and analyzed using Student's unpaired *t*-test and analysis of variance (ANOVA). Intergroup analysis was done using Student's *t*-test and intragroup analysis at baseline, demineralization and remineralization was done using ANOVA. **Results:** A highly significant difference in the Vickers hardness was observed between the two groups with Group A showing increased mean hardness levels in comparison to Group B ($P < 0.001$) and there was a significant change in hardness observed from baseline, demineralization, and remineralization of both Dabur Red (Group A) and Patanjali (Group B). **Conclusions:** Both the herbal toothpastes showed better remineralization potential but still Dabur Red showed highest remineralization when compared to Patanjali Dant Kanti. The role of herbal dentifrices as a remineralizing agent appears to be as effective as conventional toothpastes.

Keywords: Dabur red, herbal dentifrices, patanjali, remineralization

INTRODUCTION

The tendency among world consumers, to seek natural products for a healthier lifestyle has increased. Hence in recent times, it has been observed that many oral product manufacturers are formulating herbal or plant derived toothpastes.^[1] The natural origin of herbal products together with antibacterial, antiviral, and anti-inflammatory activity found its way into Dentistry.^[2] The herbal products in health care have drawn attention in the consumer market. Several studies suggest the use of herbal toothpaste over synthetic toothpaste as they are of natural origin have significant antimicrobial properties.^[1]

Demineralization–remineralization of the tooth in the oral cavity is a dynamic process that are dependent on several determining factors, such as biological, chemical, behavioural, and educational. Hence the main aim would be maintaining the oral environment that prevents demineralization but encourages remineralization.^[3] Demineralization occurs at a low pH when the oral environment is undersaturated with mineral ions, relative to a tooth's mineral content whereas, remineralization

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Utilization of Dental Services and Perception Towards Dental Insurance Among Software Professionals in Chennai City: A Cross Sectional Survey

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Abstract

Aim: To assess the utilization of dental services and perception towards dental insurance among the Software professionals who are working in Chennai city.

Materials and methods: A cross sectional questionnaire survey was conducted among 364 software professionals in Chennai city, to identify the utilization of dental services and their perception towards dental insurance policy. After reviewing the related articles, a questionnaire including demographic data, utilization pattern, and perception towards the Dental insurance were framed. In order to standardize and validate the questionnaire content Validity Index was used and Reliability test was done by test-retest method. Google forms were sent to the study subjects to collect information. Collected data were analysed using descriptive statistics and Chi-square test.

Results: The software professionals were aware about the utilization of dental services, their last dental visit was 1-2 years ago (34%), their place of preference of dental treatment was to be private clinics (75%) and about (50%) of the participants preferred prevention of oral disease is as important than treatment. The major barrier for not utilizing dental service was to be fear in which female showed more fear for dental treatments. Their perception towards frequency of dental visits was found to be once in a year (32%). Regarding dental insurance perception the software professionals had very less knowledge about the benefits of dental insurance policy. Only 2.5% of them are using dental insurance offered by their company.

Conclusion: The present study reveals that the software professionals are utilizing the dental services adequately. More than half of them have utilized dental services in the past two years, they have enough awareness about the dental importance and they prefer prevention is better than cure. But they have poor awareness regarding the benefits covered in their health insurance plans although they showed a positive attitude towards dental insurance plans. Only very few of them are benefitted by the dental insurance policy. Efforts should be taken to increase the awareness regarding dental insurance and their benefits.

Key Words: IT professionals, Dental service utilization, Dental insurance, Chennai city.

Introduction

Good health can be considered as a fundamental right of every human being, oro-dental health being an integral part of the same [1]. Oral health and having a great smile are important not only for appearance and sense of well-being, but also for overall health of the individual, self-pride, confidence and accomplishment [2]. Poor oral health affects the quality of life, appearance and self-esteem and has been linked to behavioural and developmental problem. Adequate use of health services and factors predictive of this behaviour is essential to improve the oral health outcomes [3].

Dental care utilization refers to "the percentage of the population who access dental services over a specified period of time" [3]. Dental care utilization depends on many factors of which are internal and external. Internal factors include oral diseases restrict activities in school, at work, and at home causing millions of school and work hours to be lost each year worldwide. Moreover, the psychosocial impact of these diseases often significantly diminishes the quality of life [3]. External factors include the adequacy of dental care and ability to pay [3]. The escalating cost of dental treatment has been an important barrier in the utilization of services in developing countries [4].

India serves as a home for around 47 crore workers which come from the unorganized as well as the organized sector of the industry [4]. The prohibitive cost of dental treatment has become a hindrance that deprives people from readily availing services from qualified clinicians. Some individuals do have dental insurance cover through their jobs but for most, only the medical expense may be partly covered by self-bought

insurance plans while dental expenses are left to be paid from one's own pocket. Paying the full price for dental treatment can be overwhelming and challenging, especially if major dental work needs to be done [1]. Dental insurance potentially influences dental visiting patterns by lowering the cost at the time of accessing care and regular dental visiting has been associated with better oral health.

Dental insurance is an insurance to protect people against dental costs [5]. In the early 20th century, dental insurance and dental benefit programs did not exist. Their emergence and rapid growth have helped to change the general perception of dentistry, transforming it in the public eye from a feared, undervalued profession into a regular and necessary part of health care, a vital part of the maintenance of overall quality of life [4]. It insures against the expense of treatment, care of dental disease and trauma. It has been found to be associated with higher rates of visiting for a check-up and regular dental visiting and was correlated with patient acceptance of prescribed dental treatment, which suggests that insured individuals may face lesser financial barriers to comprehensive dental care [5].

In India if dental insurance is made available for all, people would be more than ready for seeking preventive and prophylactic dental care, thus reducing the burden of dental diseases and avoiding the expenses of future dental treatment. India is a country with a very price sensitive market. So being insured would be a boon for one and all [4].

A better apprehension regarding dental insurance in India is needed to gain clarity. Software professionals being the most reputable people and the most common professionals, their dental need and utilisation of dental services aids in gaining

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Needs and Barriers to Access Oral Healthcare Services among the Rural Population in Chengalpattu, Tamil Nadu, India: A Cross-sectional Study

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ABSTRACT

Introduction: Disparities in dental service utilisation are substantial and pervasive worldwide. The healthcare services required to address health concerns and the services actually offered are at odds. Rural residents have poor oral health, and they frequently neglect to adopt good oral hygiene habits.

Aim: To assess the oral health needs and barriers in accessing oral healthcare services among the rural population in Pulipakkam, Chengalpattu district, Tamil Nadu, India.

Materials and Methods: A cross-sectional door-to-door study was conducted in Pulipakkam, Chengalpattu district, in association with Karpaga Vinayaga Institute of Dental Science, Madhuranthagam, Tamil Nadu, India. The study duration was six months, from March 2022 to August 2022. A total of 436 subjects from the rural population were included, and a structured questionnaire consisting of two domains, totalling 27 questions (24 closed-ended and three open-ended questions), was prepared and distributed among the study participants to assess the need (15 questions) and barriers (12 questions) in accessing oral healthcare. The questionnaire was administered in the local (Tamil) language. Additionally, seven demographic data questions were included, and descriptive statistics were performed for the demographic variables. Inferential statistics

were used to assess needs and barriers. The World Health Organisation (WHO) oral health assessment questionnaire 2013 was used to assess dental caries and periodontal disease. The Chi-square test was carried out using Statistical Package for the Social Sciences (SPSS) version 20.0 for inferential statistics. The p-value < 0.05 was considered statistically significant.

Results: The mean age of the study participants was 53.6±2.02 years, and 402 (92%) were married, while 34 (7.8%) were unmarried. Among the total population (N=436), the perceived need was 217 (49.8%), and the barrier was 399 (91.5%). There was no statistically significant difference in the distribution of dental caries among the population with and without perceived need (p=0.909) and with and without barriers to accessing oral healthcare (p=0.542). The majority (N=261, 89.4%) of the population with periodontal diseases (N=292) reported having barriers in accessing oral healthcare services, and there was a statistically significant difference in the distribution of periodontal diseases among the rural population with and without barriers to accessing oral healthcare (p=0.027*).

Conclusion: According to the study findings, oral diseases affect individuals who have no needs or barriers, suggesting that they are unaware of their oral health. It is therefore important to increase oral health awareness among rural people.

Keywords: Dental health, Health inequality, Rural residence, Unmet need, Utilisation

INTRODUCTION

Oral diseases are a major public health problem globally, and in India, the prevalence rate of dental caries is 78.75% and periodontal diseases is 74.7% from December 2014 to January 2015 [1]. Oral health disparities are differences in the incidence, prevalence, mortality, and burden of oral illnesses and other harmful health conditions, as well as in the utilisation of medical services, among particular demographic groups [2]. The utilisation of healthcare services is an important determinant of oral health but is far from equal geographically. People living in rural areas are less satisfied with their oral health and have higher rates of untreated dental caries, periodontal disease, and tooth loss [3]. India is the second most populated country with more than 1.35 billion people, out of which approximately 72% live in rural areas and the remaining 28% in urban areas [4]. It is quite evident that a dental equivalent of the "inverse care law" operates in India, which means that those who require dental healthcare the most are the ones least likely to receive it [5]. These people belong to the indigenous population of low socioeconomic status [6].

The oral health of the rural population is poor, and their attitudes and practices toward oral health hygiene are often neglected [2]. The prevention and treatment of oral diseases are practically unavailable to the rural and underprivileged sections of society because of

educational, cultural, and socioeconomic differences [6]. In rural India, the dentist-to-population ratio can be as high as one dentist for every 250,000 residents, while the ratio is estimated at one dentist for every 10,000 in urban areas [4]. The target, therefore, is to improve access to oral healthcare and reduce inequalities for the people in need [7]. Failure to do so will result in poorer health and wider health inequalities. Inequalities in dental service utilisation are considerable and globally consistent [8]. These inequalities are differences between the healthcare services required to cope with a health problem and the services received [9].

The need is divided into three categories as follows: normative need, which is determined by experts and professional staff; perceived (felt) need, which reflects individuals' assessment of healthcare needs, and expressed need, which is a perceived need that has led to action for receiving services [10]. Patient utilisation of dental services is predominantly a consequence of the patient's perceived need for such treatment. Therefore, perceived need has been considered an accurate predictor of utilisation of dental service utilisation [11]. The main objectives of need assessment are to determine patterns of needs and priorities of the population, quantitatively estimate all healthcare needs, set goals to respond to these needs, and decide how to use the available resources [12].



Assessment of Knowledge Towards Clinical Audit on Infection Control Among Dental, Medical Practitioners and Health Care Workers in Tamil Nadu: A Cross Sectional Survey

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Abstract

Infection management in hospitals is critical for the safety and well-being of patients, healthcare staff and visitors. It affects several hospital departments and also involves issues with quality risk management, clinical governance of health and safety. In order to create a managed environment, all institutions that provide health care should have a hospital infection control programme with a stable framework. The study's goal is to evaluate and compare infection control policies and practises among healthcare professionals. The study will be useful in bridging the gap between current infection control practises by serving as a source of discovering elements of existing infection control practices. It also combines the process with the organisation in order to sustain and improve it. It was clear that infection control measures and practises were inadequate due to a variety of factors, including inadequate biomedical waste management practises, inadequate spill management practises, inadequate sodium hypo chloride usage practises, inadequate needle recapping and documentation of needle stick injuries, and inadequate hand washing practises before touching the patient. According to the findings of the study, there was insufficient infection control practise among health care workers, as well as a low compliance rate. As a result, there is a need for on-going and necessary training, surveillance, and infection control programmes.

Keywords: Clinical Audit; Tamil Nadu; Health Care

Introduction

Infection is one of the most crucial problems in health care services worldwide. It is considered one of the most important causes of morbidity and mortality associated with clinical, diagnostic and therapeutic procedures [1]. Human body is vulnerable for transmission, inoculation, and development of agents that can be harmful to others [2]. Therefore, transmission of various existing and emerging new infections can easily occur in institutions through various courses which include direct contact with blood, oral fluids, other secretions, indirect contact with contaminated instruments, operatory instruments, and contact with airborne contaminants present in either droplet splatter. The most common people who are susceptible to contracting harmful diseases are the professionals and the healthcare workers if they fail to follow proper infection control procedures [3].

According to Centres for Diseases Control and Prevention 2005, Infection control is defined as "Measures practiced by health care personnel to reduce the risks of transmission of infectious agents to patients and employees such as proper hand hygiene, scrupulous work practices, use of personal protective equipment

(PPE), masks or respirators, gloves, gowns and eye-protection)" Infection control measures include contact, droplet and airborne precautions based on how an infectious agent is transmitted [4]. To control these risks of infections in the healthcare setting, standard precautions are formulated which include eye protection with lateral shields, facemask, and protective clothing [5]. Professionals who are all across the world should have an exorbitant level of clinical skills and knowledge on infection control [1].

Clinical audit is defined as "a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria, where indicated changes are implemented and further monitoring is used to confirm improvement in healthcare delivery" [6]. So, the purpose of the present study is to conduct clinical audit by assessing and comparing the knowledge and practices on infection control among Medical, Dental practitioners & the Health care workers.

Research question

There is no knowledge and practice about the clinical audit on infection control among Dental practitioners, Medical practitioners and Health care workers.

Comparative Evaluation of Remineralization Potential of Shelcal, Calcium Sandoz and Shelcal with Vitamin C on Artificially Induced Carious Lesions in Permanent Teeth: An *in vitro* Study

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Abstract

Background: The *in vitro* study was done to find out the efficacy of shelcal, shelcal with Vitamin C and calcium sandoz in remineralizing enamel surfaces on which artificial carious lesions had been created. The changes were analyzed using Vickers Hardness Testing Machine. **Materials and Methods:** A total of 45 permanent teeth were selected and divided into three groups: Group I – Shelcal, Group II – Shelcal with Vitamin C, and Group III – Calcium sandoz tablets. All samples were subjected to demineralization and assessed using Vickers Hardness Testing Machine. Each demineralized sample was randomly divided into three groups: Group I – Shelcal, Group II – Shelcal with Vitamin C, and Group III – Calcium sandoz tablets. After the 10 days of remineralization, the obtained data were analyzed statistically. The significance of mean difference between the groups was done by *post hoc* Bonferroni test and repeated measures ANOVA. All analyses were performed on SPSS software (Windows version 20.0). **Results:** Statistical analysis showed that shelcal remineralizes artificially induced carious lesions in permanent teeth. **Conclusion:** Shelcal (Group I) exhibited superior remineralization potential.

Keywords: Remineralization, shelcal, Vickers Hardness Testing Machine

INTRODUCTION

Teeth go through a natural, continuous process of demineralization and remineralization. Demineralization occurs due to bacterial acids, foods, and physiological processes. Mineralization occurs from the calcium and phosphorus (normally present in saliva) precipitating into a crystalline form of calcium phosphate called hydroxycarbonate apatite, which is the mineral component of all teeth and bones. Since natural remineralization is inadequate to maintain strong enamel, the natural remineralization process needs to be augmented.^[1] Caries is just not a disease, but instead a disease process.^[2] The understanding of this basic fact has opened up newer avenues of interception of this disease process through remineralization. The current concept considers caries as a dynamic and reversible process and is the result of the interplay of a number of etiological factors.^[3,4] Some of

these factors cause demineralization, whereas others promote remineralization of the tooth. When the demineralization process continues, cavitation will eventually result. Caries can be arrested or even reversed at the precavitated stage, provided a balance toward remineralization can be established.^[3] The progressive increase in processed sugars and acidic foods and beverages in the human diet provides oral bacteria greater opportunity to produce acids that dissolve tooth mineral. Tooth mineral is composed mainly of calcium and phosphorus. Methods for providing these constituents of minerals to

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Assessment of Dental Anxiety Level Among Adult Patients Visiting Dental College in Chengalpet District-A Questionnaire Survey

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Abstract

Background: Dental Anxiety is considered to be an imaginary threat to an odd, unpleasant experience accompanied by the forewarning that something undesirable is expected. The aim the study was to assess level of dental anxiety among patients visiting dental college in chengalpet district

Materials and methods: The study consists of 519 adult patients from both genders visiting dental college in chengalpet for dental treatment. Data collection was carried out through the administration of self-administered pre-validated questionnaire. The Modified Dental Anxiety Scale (MDAS) which consists of 7 closed ended questions with responses placed in five-point Likert scale and one open ended question was used to evaluate the degree of anxiety among study participants. Chi square test was done to know the association between anxiety and the type of dental treatment.

Results: The results shows there is presence of anxiety with dental treatment in giving an injection followed by extraction, visiting dentist, waiting room and scaling respectively. There was a significant difference between socio economic status and level of dental anxiety with a p value (<0.05), with an upper lower class of 42% very anxious. There is significant difference between new and old cases and level of dental anxiety with old cases value of very anxious (60%). There was no any difference in the anxiety level between male and female.

Conclusion: Dental anxiety was found to be present among patients undergoing dental treatment.

Key Words: Dental anxiety, Adult patients, Dental treatment.

Introduction

Anxiety is considered to be an imaginary threat to an odd, unpleasant experience accompanied by the forewarning that something undesirable is expected. Dental fear or Anxiety is considered to be aroused by a real, immediately present, specific stimulus (e.g. needles, hand pieces), whereas for anxiety, the source of threat is unclear, ambiguous or may not be present immediately. It is defined as apprehension of danger and dread, accompanied by restlessness, tension, tachycardia and dyspnoea unattached to a clear unidentifiable stimulus. Dental anxiety is related to age, gender, educational qualification, socioeconomic status, and culture and varies from person to person [1]. Weiner and Sheehan (1990) have suggested that dentally anxious people could be classified into two groups, exogenous and endogenous, with respect to the source of their anxiety. In the former, dental anxiety is the result of conditioning via traumatic dental experiences or vicarious learning, dental anxiety is ranked fourth among common fears and ninth among intense fears [1]. Identifying dentally anxious patients is crucial for management and treatment outcome. Hence, factors that have been identified as responsible for dental anxiety in populations from industrialized countries may not be the same among population of developing countries such as India [2]. If dentists are aware about the level of anxiety among their patient, they can anticipate patient's behaviour and be better prepared to take measures to help alleviate anxiety. Fearful dental patients avoid dental treatment, seek emergency dental care, postpone their dental visit and have poor oral health-related quality of life and more number of missing and decayed teeth. Identifying dental anxiety among adult patients is crucial for management and decision-making regarding treatment. Since there are very little information as the impact of dental anxiety among adults. Hence, this study was conducted to assess the level of anxiety toward dental

treatment among adult study participants visiting dental college in chengalpet district.

Materials and Methods

This questionnaire was conducted in dental college in chengalpet district. Convenience sampling was done and data were collected from the 515 patients coming to the dental OPD of Karpaga Vinayaga Institute of Dental Sciences during the month of study period of December 2020 to January 2021. Ethical clearance was obtained from the Institutional Committee of Karpaga Vinayaga Institute of Dental Sciences KIDS/025/2020. Informed consent was obtained from the study participants prior to filling of the questionnaire and complete anonymity and confidentiality were assured. All the patients aged ≥ 18 years, who visited OPD of dental college for any dental treatment during this period and were willing to participate were included in the study. Patients with any serious physical anomaly or psychological limitations which will hinder in understanding the questionnaire were excluded from the study. Structured questionnaire to record the demographic and socioeconomic data, previous dental visit as well as scores on anxiety scale regarding dental treatment were administered using MDAS to all the study participants designed both in Tamil and English languages. Investigator personally administered the questionnaire to the participants and helped the participants with the questions where they faced difficulty in understanding.

The questionnaire was used to collect the following information:

1. Sociodemographic information (age, sex, address, education, occupation and annual family income).
2. Details of previous dental visits and treatments (five questions).

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Original Article

The relationship between oral health literacy and oral health among nursing students in Chengalpattu district, India: A correlational study

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Indrapriyadharshini K: <https://orcid.org/0000-0002-1832-7437>**Abstract**

Context: Better health literacy develops the competencies of the individual to assimilate, comprehend and adapt to healthy practices and reduce risk behaviors. Oral health literacy has also proved to be critical in reducing oral health disparities and in promoting oral health.

Aim: The study aimed to assess the oral health literacy level and its impact on oral health status among dental nurses.

Setting and Design: A cross-sectional study was conducted among 170 nursing students at private nursing college between September 2019 and December 2019.

Materials and Methods: Oral health literacy (OHL) was assessed using the Rapid Estimate of Adult Literacy in Dentistry (REALD-30) and dental caries were assessed by decayed, missing, and filled teeth (DMFT) index

Statistical Analysis Used: The data were analyzed using descriptive statistics, Kruskal–Wallis test, and multiple linear regression analysis.

Results: Among the participants, the IV-year students showed a higher rate of rinsing after meals (77.3%), brushing frequency twice a day (36.4%). A steady increase in the mean OHL scores was observed with an increase in the level of education. Significant association was found between REALD-30 (OHL) and dental caries ($\beta = -0.151$, P -value = .049).

Conclusion: The current study result demonstrates the correlation between oral health literacy and dental caries. To achieve better outcomes, there is a need to involve inter-professional primary health care providers, such as nurses to raise awareness and promote oral health by incorporating additional cross-cutting actions in training programs aimed at health care, disease prevention, and health promotion.

Keywords: Dental caries, Nursing students, Oral health, Health literacy

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Original Research Article

Oral health practices among 10-15 years of government school children in Chengalpattu district, India: a cross-sectional survey

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ABSTRACT

Background: Oral health is a fundamental part of the general health and well-being of an individual. Oral hygiene refers to the practice of maintaining a clean oral cavity to prevent dental problems like dental cavities, bad breath, gingivitis, and periodontitis. Aim was to assess oral health practices among 10-15 years of government school children in Chengalpattu district, India.

Methods: This cross-sectional study included 1500 government school children aged 10-15 years based on the guidelines of the strengthening the reporting of observational studies in epidemiology. Each child was asked about the dental hygiene practices.

Results: The study population was composed of 545 (36.3%) participants who belonged to the 10-12-year-old category and 955 (63.7%) belonged to the 13-15 years category. While assessing the oral hygiene practices of the children, 86.1% of children used toothbrush and toothpaste as oral hygiene aids. In our study more than half of the students 59% reported that they brush only in the morning that 32.8% of children felt stinky sometimes in their oral cavity. Only around 28.5% had used the service of a dentist during the last 6 months and about 12.8% in the last 1 year.

Conclusions: The study results concluded that oral hygiene practices were enhanced among male children when compared to female children and showed a positive attitude in preserving appropriate oral health.

Keywords: Oral hygiene practices, Government school, Children

INTRODUCTION

Oral health is a fundamental part of the general health and well-being of an individual. Oral hygiene refers to the practice of maintaining a clean oral cavity to prevent dental problems like dental cavities, bad breath, gingivitis, and periodontitis. Oral hygiene is defined as "a standard of health of the oral and related tissues which enables an individual to eat, speak, and socialize without active disease, discomfort, or embarrassment and which contributes to general well-being".¹

The prevalence of dental caries among school children, from the available studies, ranges from 31.5% to 89%, in different parts of the country.² The pooled prevalence of dental caries among Indian children over the past 25 years was reported to be 56.7%.³ Children <18 years constitute about 40% of the Indian population.⁴ In India, the majority, i.e. 70-72% of the population live in the rural areas of which more than 40% are children and the majority of these children are more vulnerable to oral health problems due to various socioeconomic and demographic factors such as lack of awareness, poor transport facilities, and poor accessibility to quality dental care.⁵



Original Article



Awareness and practice of oral complications due to diabetes mellitus among diabetes patients at Chengalpattu district, India: A cross-sectional study

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Abstract

Background: There is a sound pathophysiological framework for addressing oral health issues in general healthcare given the prevalence of oral diseases and their link to diabetes. However, many individuals with diabetes are unaware of the link between their disease and their oral condition, as well as the fact that they have a higher chance of experiencing a variety of difficulties with their oral health. The goal of this research was to assess the knowledge about oral complications due to diabetes mellitus among diabetes patients in Chengalpattu district, India.

Methods: A cross-sectional study including 470 diabetes patients was carried out over a period of 4 months from February to May 2022. Descriptive statistics and multivariate logistic regression analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 21. $P < 0.05$ was considered statistically significant.

Results: Many of the study subjects were not aware of the relationship between oral problems and diabetes. The knowledge about oral complications of diabetes was limited to awareness about dental caries (28.9%), periodontal disease (35.1%), xerostomia (51.8%), oral candidiasis (15.7%), and oral cancer (9.6%). Education and the duration of time after a diabetes diagnosis were the two most crucial predictors of awareness of the complications.

Conclusion: Regarding the oral problems of diabetes, there is a dearth of knowledge, and this agreement is primarily associated with education and the duration of time from diabetes diagnosis.

Keywords: Diabetes mellitus, Oral complications, Knowledge, Awareness

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Introduction

A complex metabolic disorder is known as diabetes mellitus, which affects how proteins, lipids, and carbohydrates are metabolized and are categorized by the incapacity of the organ to resist or produce insulin.¹ The World Health Organisation (WHO) has designated diabetes mellitus an epidemic since it has been spreading at such an alarming rate over the world.² Additionally, diabetes was identified as the nation's top contributor to disability-adjusted life years (DALYs, a metric that quantifies the sum of potential life lost due to premature mortality and years of productive life lost due to disability).³

About 4.22 billion people worldwide, or 8.3 percent of the world's population, were estimated to have diabetes

mellitus in 2016. According to the WHO, diabetes causes approximately 1.5 fatalities worldwide on average each year, while complications related to diabetes cause another 2.2 million deaths.⁴ The number of adults with diabetes mellitus was recently estimated at 463 million, and by the year 2045, it is anticipated that there will be 700 million. In the South-East Asian region, India has the highest number of adults with diabetes (72.9 million), and by 2045, that figure is projected to reach 134 million.⁵

The most common systemic issues that can result from diabetes mellitus include diabetic microangiopathies, atherosclerosis, diabetic ulcers, carpal tunnel syndrome, glaucoma, diabetic neuropathies, cataracts, oral or dermatological infections, and parodontopathies.⁶ Hyposalivation, the altered chemical composition of



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Exploring the Association between Nutritional Status and Oral Health in Gypsy Geriatric Population in Tamil Nadu - An Analytical Study

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Abstract

Aim: To assess the nutritional status and evaluate the influence of nutritional status on oral health, and compare it with gender variation among gypsy geriatric population.

Materials and Methods: A cross-sectional study was conducted for 3 months (from May 2021 to July 2021) among 200 gypsy geriatric populations in the Chengalpattu district, Tamil Nadu, India. A questionnaire for assessing the nutritional status gypsy geriatric population using the Mini nutritional assessment tool and clinical examination for assessing dental caries, and the presence of edentulism. To find the significance in categorical data Chi-Square test was used. In the above statistical tools, the probability value of 0.05 is considered a significant level. Statistical tests for correlation (Spearman) were used to verify the relationship between the independent and dependent variables of this study.

Results: The overall prevalence of malnutrition among the gypsy elderly population was found to be 12.4% and the female population is more (19.0%) when compared to the male population (6.4%). Dental caries was found to be more in the female gypsy population (34.2%) than compared in males (12.6%). Nutritional status was not significantly associated with oral health status among the gypsy geriatric population.

Conclusion: The study reveals poor oral health was seen among the gypsy (Narikuravar) geriatric tribes.

Keywords: Gypsy geriatric, Narikuravar, Mini nutritional assessment, Nutritional status, Oral health

INTRODUCTION

The Narikuravar is a semi-nomadic tribe, originating from North India, who migrated to South India half a millennium ago, according to the group's oral history. Although they currently spill over state borders, a large part of the population comprised of 8,500 families, or 30,000 individuals, live in Tamil Nadu and represents less than 0.1% of the state's population. The Narikuravars are a "gypsy", a seminomadic community that spills across borders, but mainly lives in Tamil Nadu, India. They are known to face discrimination that translates into low education levels, low socioeconomic status, and lack of appropriate access to health care [1].

Gypsies and Travelers (variously described as Gypsies) are the most disadvantaged, minority ethnic groups, who often experience stigma, discrimination, and social exclusion and show the most marked health inequality [2]. Gypsy/Travelers are vulnerable to poor health outcomes, even when compared to other disadvantaged groups including poor living conditions, high rates of homelessness, low educational achievement, social exclusion, and widespread prejudice and discrimination. Gypsy/Travelers also face many barriers to accessing healthcare. For some, a mobile lifestyle is key, however, poor access is also experienced by settled Gypsy/Travelers. This is underpinned by complex factors including stigmatization and lack of understanding by healthcare staff [3].

India has acquired the label of an aging nation with the elderly population currently being over 77 million. The rapid graying of the population comes with several difficulties in terms of general and oral health [4,5]. Conversely, elderly patients are more susceptible to oral conditions due to age-related systemic diseases and functional changes. A recent study of older adults at risk of malnutrition found that patients who reported moderately declining oral health had a 14% malnutrition rate, while those reporting poor oral health had a 20% malnutrition rate [6].

The Mini Nutritional Assessment (MNA) is the most widely used tool for nutritional screening and assessment due to its ease of use in any care setting. The MNA was developed and validated for use in older adults and incorporates anthropometric assessment, functionality, cognition/depression, dietary assessment, and self-perception of health and nutritional status. MNA has been validated in

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“DEVELOPMENT AND VALIDATION OF A QUESTIONNAIRE TO ASSESS THE FACTORS AFFECTING THE UTILIZATION OF DENTAL CARE DURING COVID-19 PANDEMIC”

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Abstract

Objective: The aim of this study was to develop and validate a questionnaire based on the Anderson model of healthcare utilization to assess the factors that affect the utilization of dental

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REVIEW ARTICLE

Year : 2023 | Volume : 15 | Issue : 2 | Page : 127–133

In vitro remineralization effectiveness of grape seed extract on primary tooth: A systematic review and meta-analysis

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Abstract

Aim: Grape seed extract (GSE) is considered a herbal alternative and has been noted for its remineralization potential. Thus, this systematic review is to analyze the *in-vitro* remineralization effectiveness of the natural remineralizing agent, GSE, helping to reinstate new investigative possibilities in the field of restorative dentistry. **Materials and Methods:** This systematic review was undertaken using objectives and transparent methods as per the PRISMA guideline and was registered with PROSPERO (CRD42021269585). Studies that had assessed the remineralizing efficacy of GSE on human primary teeth for the past 20 years published in English language were included. Electronic and manual searches were conducted to identify suitable citations, and electronic search was performed using various databases such as PubMed, Trip Database, Google Scholar, EBSCOhost Database, Scopus, and Web of Science. Those articles that were written in English and those that had full text available were considered because of its use in dentistry, whereas unpublished data and literature written in other languages and articles with only abstracts were excluded. The search was focussed on the effect of GSEs on primary teeth. **Results:** The search identified 446 citations, and 12 articles were chosen and reviewed in full texts, among which 2 relevant citations met the eligibility criteria for the final inclusion in the systematic review. The studies were of good quality and meta-analyses showed inconsistent evidence on the remineralization potential of GSE when compared with fluoride [mean difference: 16.63 (95% confidence interval: -62.48, 95.73); $P = 0.004$]. **Conclusion:** Within the limitations of the present study, the findings of this systematic review suggest that GSE has a remineralizing effect on primary teeth but strong literature-based clinical evidence in favor of GSE is lacking and also the remineralizing effectiveness is lesser when compared with fluoride. This reinforces the need for further *in-vivo*, *in-vitro*, and comparative clinical studies.

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CASE REPORT

Basal Cell Adenocarcinoma - 2 Case Series of a Rare Entity

Arunachalam Meyyappan, Sathish Kumar, Mary Tresa Jeyapriya, Pradeep Sankar

ABSTRACT

Introduction: Basal cell adenocarcinoma is a rare well recognized low grade malignant salivary gland tumor often resembles basal cell adenoma. the infiltrating growth pattern and likelihood of vascular and perineural involvement distinguishes basal cell adenocarcinoma with basal cell adenoma.

Case presentation: Here we present histopathological and immune histochemical analysis of two such rare cases of basal cell adenocarcinoma and review of literature is discussed.

Conclusion: Basal cell adenocarcinoma is a low grade malignancy and doesn't metastasize. With only few hundreds of cases that has been reported in literature, basal cell adenocarcinoma should be included as differential diagnosis in salivary gland tumors in order not to miss the diagnosis.

Key words: basal cell adenocarcinoma, basal cell adenoma, salivary gland neoplasm

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INTRODUCTION

Basal cell adenocarcinoma (BCAC), is a rare salivary gland tumor that has been recently added to the subtypes of salivary gland carcinoma in the year 1991 by World Health Organization classification. Although there have been occasional references in the literature over the past 30 years to malignant basaloid tumors, malignant transformation of basal cell adenoma and salivary gland carcinomas associated with basal cell adenoma, BCAC has only recently been characterized.¹ It is classified as a malignant epithelial tumor in the latest WHO histological classification of salivary gland tumors (2017).²

This tumor was reported under a variety of names, including malignant basal cell tumor, malignant basaloid tumor, hybrid basal cell adenoma/ adenoid cystic carcinoma, basaloid salivary gland carcinoma and atypical monomorphic adenoma. Before the term was universally accepted.³

Ellis and Wiscovitch have published the largest series of cases (29), and have defined the clinicopathological features.^{4,5}

BCAC of the salivary gland, occurs mostly in the major salivary glands, particularly in the parotid gland, it is a rare neoplasm comprises 1.6% of all salivary gland neoplasms and 2.9% of malignant salivary gland neoplasms. BCAC is a tumor similar to basal cell adenoma (BCA) except that it grows in an invasive destructive fashion, often with perineural and/or vascular invasion but without histologic evidence of preexisting basal cell adenoma.¹ Based on growth pattern they are divided into the following four subtypes: solid, trabecular, tubular and membranous; of these, the solid subtype is the most common.⁴

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It is important to differentiate BCAC from other basaloid cell tumors of salivary gland tumors because of the differences in prognosis and potential differences in treatment.

In this article we present histopathological and immunohistochemical analysis of two cases of basal cell adenocarcinoma, reported to the Department of Oral Pathology and Microbiology, Karpaga Vinayaga Institute of Dental Sciences, Chengalpet.

CASE REPORT 1

A 57 year old female reported with diffuse swelling in left side of the face since five months and pain since two months

On examination, swelling was present on left side of the



Association of oral bacteriome and oral squamous cell carcinoma

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Abstract

Oral cancer is the most common carcinoma of head and neck cancers. The majority of oral cancers are oral squamous cell carcinoma (OSCC). Among the various etiological factors, oral microbes—bacteria are also associated with pathogenesis of OSCC. But only few studies have been done associating the presence of oral bacteriome with OSCC. The main aim of this review is to focus on association of microbes with OSCC, the pathogenesis, variation in bacteriome profiling in different geographic conditions, their role in pathogenesis of OSCC, and different samples and methods that are used to study their association with habits and tumour node metastasis (TNM) staging. To conclude, the imbalance in the oral bacteriome could be considered an etiological factor for OSCC. Since the bacteriome profiling varies greatly with geographic location and even in an individual in different locations of the oral cavity, it advocates more research. The study on identifying bacteria associated with OSCC will also enable their use as diagnostic markers and preventive management of OSCC.

Keywords

Oral bacteriome, oral squamous cell carcinoma, variation

Introduction

Oral cancers constitute 75% of head and neck cancers, and oral squamous cell carcinoma (OSCC) forms 90% of oral cancers [1]. The various etiological factors associated with OSCC include smoking, alcohol usage, betel nut use, tobacco chewing, diet, viruses, and genetic factors [2]. The oral cavity harbours more than 700 species of microbes, which include commensal and opportunistic bacteria, viruses, and fungi. They establish symbiotic relationships with one another and with the host inside the oral cavity [3]. Bacteria

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Osteoblastoma of the Jaws: Juggling Jopardy

*(Running title: Osteoblastoma of the mandible: Unique case report, management and review of literature)***Dr. Yash Merchant (M.D.S)^{1*}, Dr.A Mathan Mohan (M.D.S, FHNS, FIBOMS)², Dr. B Balaguhan (M.D.S, FCFS, FIBOMS)³, Dr. G Karthikeyan (M.D.S)⁴**¹Ex-Senior Lecturer, Oral and Maxillofacial Surgery, Karpaga Vinayaga Institute of Medical and Dental Sciences, Chennai, Tamil Nadu²Chief, Head and Neck Oncological Services, Karpaga Vinayaga Institute of Medical and Dental Sciences, Chennai, Tamil Nadu³Professor, Oral and Maxillofacial Surgery, Karpaga Vinayaga Institute of Medical and Dental Sciences, Chennai, Tamil Nadu⁴Associate Professor, Oral and Maxillofacial Surgery, Karpaga Vinayaga Institute of Medical and Dental Sciences, Chennai, Tamil Nadu***Corresponding author:** Dr.Yash Merchant (M.D.S), Ex-Senior Lecturer, Oral and Maxillofacial Surgery, Karpaga Vinayaga Institute of Medical and Dental Sciences, Chennai, Tamil Nadu. address: 402, The Great Eastern Retreat, Lakaki Road, Model Colony, Pune 411016. Contact: (+91) 9881075160; Email: merchantyash@gmail.com; ORCID: 0000-0002-3871-897X. Co-authors: drmathanmohan@gmail.com (AMM); dr.guhan@gmail.com (BB); grkbs@gmail.com (GK)**Citation:** Merchant Y, Mohan AM, Balaguhan B, Karthikeyan G (2022) Osteoblastoma of the Jaws: Juggling Jopardy. Anna Clin Rev Cas Rep: ACRCR-101.**Received Date:** 15 November, 2022; **Accepted Date:** 08 December, 2022; **Published Date:** 15 December, 2022**Abstract**

Clinical facts along with radiological and histological findings are imperative to appropriately diagnose lesions of the jaws. Osteoblastoma is an uncommon, benign, primary lesion of the bone that rarely occurs in the jaw. It presents in the body/ramal region of the posterior mandible and mimics several other swellings which may present at this site. Clinico-pathologically and radiographically there are several lesions that present with almost similar features. The authors present one such case of a large osteoblastoma in an elderly female stressing the importance of correctly diagnosing these lesions.

Keywords:

Osteoblastoma, diagnostic dilemma, benign jaw pathology, bone pathology/swelling

Introduction

Osteoblastoma is a relatively uncommon benign lesion of the bone that accounts for less than 1% of all bone tumors [1]. It commonly involves the spine and sacrum of younger individuals with less than 10% localised to skull [2]. This primary lesion of the bone occurs in young adults with a male predilection (2:1) [1]. In 1956, the lesion was definitely separated from osteoid osteoma and recognised as a separate entity by Jaffe and Lichtenstein under the name 'benign osteoblastoma' and subsequently this has been adopted by the World Health Organisation Classification of Bone Tumours [3]. Osteoblastoma of the jaws was first reported in English literature by Borello and Sedano in 1967 [4].

Clinically, the lesion often presents with a bony hard swelling with an obvious facial asymmetry in long-standing lesions. Patients may or may not be symptomatic with pain or discomfort [1]. Radiological evaluation reflects variable features usually exhibiting mixed radiolucency/radio-opacity with relatively defined borders. Reactive sclerosis surrounding the lesion is not generally present. Some lesions present a calcified plaque within the radiolucent area, and some may display considerable calcification [3].

Clinical case capsule, detailed relevant history and radiological findings must be assessed in tandem to appropriately diagnose lesions of the jaws. The authors

present a large long-standing asymptomatic osteoblastoma in an elderly female patient that was excised in toto.

Case Report

A 62-year-old female reported to the Out-patient Department of our institute with the chief complaint of a bony hard swelling over the left pre-auricular region extending beyond the left angle of the mandible. She reported mild discomfort over the left side of the face and facial asymmetry since the last 1 year. She did not complain of any accompanying pain.

On inspection *extra-orally*, the swelling measured approximately 6 x 4 x 2 cm and extended from the tragus of the left ear to 1cm below albein in continuity with the left angle of the mandible.

Antero-posteriorly it extended from the left buccal region of the face to the skin below and behind the pinna of the left ear. The ear lobe was slightly elevated. The skin over the lesion appeared intact and normal in texture and pigmentation. On palpation, the swelling was bony hard in consistency, immobile and non-tender. The temperature of the overlying skin was normal. No palpable cervical lymphadenopathy was noted.

Intra-orally, there were no anomalies/swelling and the buccal mucosa appeared normal. Mouth opening was within normal limits. On palpation the mucosa was pliable with no fibrosis and all findings of inspection were confirmed. A contrast-enhanced CT was advised which revealed a large well-defined high density (HU~1400) bony lesion with a



**ASSESSMENT OF KNOWLEDGE ABOUT THE EMERGENCY DRUGS AVAILABLE
IN DENTAL OFFICE - A CROSS SECTIONAL STUDY.**

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Original Article

Quality of life and shoulder function among oral cancer patients treated with selective neck dissection: A cross-sectional study

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Abstract

Background: There is no doubt about the oncologic effectiveness of neck dissections (NDs). But the quality of life (QoL) of patients with oral cancer and the morbidity associated with ND like shoulder dysfunction remain uncertain. The present study aimed to assess the postoperative ND-related QoL and shoulder function of oral cancer patients who underwent selective neck dissection (SND).

Methods: A cross-sectional study was conducted by using a self-administered, ND-related QoL questionnaire and arm abduction test (AAT) in 128 patients who had undergone only SND (up to Level IV) for oral cancer.

Results: Out of the 128 patients, 94 (73.8%) patients had better QoL, and 34 (26.2%) patients had worse QoL. Fifty-one (39.84%) participants were able to abduct up to or more than 150° but less than 180° (Score 3) followed by 31 (24.22%) participants who could abduct up to or more than 90° but not less than 150° (Score 2). Strong positive correlations ($r = 1.000$) were observed between the ND QoL scores and the AAT scores. It was found to be statistically significant ($P = 0.000$).

Conclusion: SND, being a more conservative approach sparing the spinal accessory nerve, could still limit the QoL and could affect the shoulder function to a certain extent.

Keywords:

Arm abduction test, quality of life, selective neck dissection, spinal accessory nerve

Introduction

Oral cancer is a major health concern, and it ranks among the top three types of cancer in the Indian subcontinent. Age-adjusted rates of oral cancer in India are high; that is, 20 per 100,000 population and accounts for more than 30% of all cancers in the country.^[1] According to the National Cancer Control Programme in India, the total cancer burden

for all sites will increase from 700,000 new cases per year to 1,400,000 by 2026.^[2] Various treatment modalities for oral cancer and their complications have a negative impact on different aspects of a patient's quality of life (QoL). Because of the

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Insights into Knowledge, Attitude and Perception about Dental Ergonomics and Work-Related Musculo Skeletal Disorders (MSD) among Dental Professionals at Chengalpet District, Tamil Nadu, India: A cross-sectional study

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ABSTRACT

Introduction: Despite all modern technological advances, dentistry is a profession still being affected by various musculoskeletal disorders, because of their prolonged working hours and difficult postures. Hence, this study was undertaken to assess the basic knowledge, attitude and practice of dental ergonomics during routine dental procedures among dental professionals and the second aim of the study focused on knowledge, attitude and practice of dental ergonomics by gender.

Methods: A cross-sectional study was conducted among 203 dental professionals from January 2021 to February 2021. A structured questionnaire consisting of 15 questions was administered. Descriptive analysis of demographic variables was done and knowledge, attitude and perception scores were performed using the chi-square test.

Results: Among the 203 participants, a considerable majority of the participants which is about 75.9% (male: 71.1% and female: 79.6%) reported that they have awareness of dental ergonomics. There were no statistically significant differences between males and females regarding knowledge score of $p=1.280$. About 46.4% of participants (male: 54.3 % and female: 43.9%), complained of neck pain followed by 44.3% (male 41.3% and female 45.2%) complained of back pain. About 58.6% reported that the pain was caused strictly because of improper posture and non-ergonomically designed equipment. The difference between the gender variations was statistically significant regarding perception about dental ergonomics ($p=0.001$)

Conclusion: Dental professionals have considerable awareness of ergonomics in dental practice. The current study highlights the situation of ergonomics in dental practice in the form of knowledge, attitude, and practices.

Key words: Dental ergonomics, Dental professionals, Knowledge, Perception

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INTRODUCTION

In Greek, "Ergo" means work, and "Nomos" means natural laws or systems. Ergonomics, therefore, is an applied science concerned with designing products and procedures for maximum efficiency and safety at work.¹

Ergonomics aims to find the best fit between the physical requirements of the work and the physical capacity of the worker. Ergonomics focuses on the nature of work, the armamentarium used for the work, and the



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46) DR VEERAMUTHU

ASSESSMENT OF KNOWLEDGE ABOUT THE EMERGENCY DRUGS AVAILABLE IN DENTAL OFFICE - A CROSS SECTIONAL STUDY

Section: Research Paper

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ABSTRACT:

Aim: The aim of this study was to assess the level of **knowledge about the emergency drugs** in order to manage medical emergencies at their dental offices.

Materials and Methods: The cross sectional survey was conducted among 227 dental professionals residing in Tamil Nadu through an online portal. The questionnaire consisted of four sections that addressed the demographic data, knowledge, awareness and practice regarding knowledge, experience and views of medical emergencies to manage medical emergencies at their dental offices.

Result: Among the participants, 64.7% (n=147) were general dental practitioners, 20.2% (n=46) postgraduate students, and 14.9% (n=34) specialty dental practitioners. The response rate to the questionnaire achieved was 100%. There was a statistically insignificant difference between the dental practitioners based on the level of graduation. Among all the participants 173(76.2%) reported that less than 5 cases of medical emergencies have encountered in dental office in a year. About 209(92.1%) reported Dexamethosone, Nitroglycerine, Diphenhydramine, Diazepam considered as mandatory drug and using it in day to day practice.

Conclusion: Management of medical emergencies should be educated at every level of study period so that the efficient patient management is achieved. In addition to that Basic Life Support should go hand in hand for managing critical patients.

Keywords: Medical Emergency, BLS, Syncope, Anaphylactic shock.

INTRODUCTION:

Oral health care professionals have a legal and ethical obligation to offer high-quality care to the public within their scope and to emphasise patient safety at all times. In a dental office, medical emergencies do occur¹. Early and effective management of a medical emergency appears to be useful and lowers the negative consequences of such an incident. In order to respond with potentially life-threatening illnesses, oral health practitioners must have the necessary skills, training, and equipment². Oral health professionals have a responsibility to prioritise their patients' needs and to safeguard those needs by practising safely and providing quality care. In order to increase the ability of a practitioner to deal with medical emergencies that happen in the course of their practice. The dental council of India have Established the medical emergencies in dental

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Case Report

Is extracorporeal plating ideal for condylar fracture? A case report with a two-year follow-up study

ABSTRACT

Management of condylar fractures includes the closed and open methods. The closed method, although is conservative, has disadvantages such as inadequate reduction, disturbances in occlusion, and a decrease in ramal height. To overcome these disadvantages, surgeons prefer open reduction and internal fixation. One of the methods used is extracorporeal fixation of condyle fractures. This method has a limiting factor of excessive condylar resorption and avascular necrosis. We report a two-year follow-up of a patient with condylar head resorption and fractured implant.

Keywords: Condylar fractures, condylar resorption, extracorporeal fixation

INTRODUCTION

Management of mandibular condylar fracture has reviewed more discussion and controversies in the field of maxillofacial trauma. Among mandibular fractures, the condylar region is the most frequent site, accounting for almost 25–35% of the cases. Motor vehicle accidents and falls are the major causes of the fracture. They cause occlusal disturbances, temporo-mandibular joint dysfunction, and facial deformities. Therefore, proper treatment of condylar fracture is essential to prevent such problems. Extracorporeal fixation of the condyle is used by several authors to describe a surgical procedure in which the fractured fragment is intentionally detached from the surrounding hard and soft tissues plated in vitro, and again, it was repositioned and fixed to the neck of the condyle.

CASE REPORT

A 23-year-old male patient came to our department with an alleged history of a road traffic accident of about 2 days prior to the presentation with the complaint of pain in the left side of the jaw. On examination, the young well-built and nourished male was conscious and well oriented and was able to recall the incident clearly. The face was asymmetrical because of extra-oral diffuse swelling seen in the left side of

the face. On palpation tenderness over the left pre-auricular region, the condyle could not be elicited. The mandible was found to be deviated to the left side. On intra-oral examination, the mouth opening was restricted (13 mm). A posterior cross bite was present on the right side [Figure 1]. The orthopantomogram (OPG) shows the left condylar neck fracture displaced with anteromedial dislocation [Figure 2]. Patient routine blood investigation was normal. We planned to go for extracorporeal reduction and fixation of the condyle. After obtaining fitness, the patient was taken up for surgery under general anesthesia (GA). Right naso-endo-tracheal

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REVIEW ARTICLE

Platelet Rich Fibrin (PRF) - A Novel Regenerative Material in oral and maxillofacial surgery - A LITERATURE REVIEW

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ABSTRACT:

The development of novel regenerative material to reduce inflammation and enhance healing process is one of the greatest task in clinical research. PRF (platelet rich fibrin) is an second generation platelet concentrate which has gained popularity in recent years due to its unique regenerative process. Platelet Rich Fibrin is completely autologous material with extended growth factor release compared to other growth concentrates. The standard quality and quantity of the fibrin matrix , leukocytes, platelets, and growth factors of PRF demands a standard protocol for preparation. The use of Platelet Rich Fibrin treatment has shown increased cellular proliferation, osteogenesis and mineralisation thereby enhancing wound healing capacity. Due to its versatility Platelet Rich Fibrin serves as workhorse in wound healing. This Review article attempts to encapsulate the technique, it's preparation and use of Platelet Rich Fibrin in the field of oral and maxillofacial surgery.

Key words: PRF (platelet rich fibrin), Autogenous material, growth factor.

Exploring the Knowledge, Awareness and Practice Regarding Post-COVID Mucormycosis among Dental Professionals in Tamil Nadu, India: A Cross-sectional Survey

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ABSTRACT

Introduction: The incidence of mucormycosis in post-COVID cases increased in the second wave. Patients who had COVID-19 infection with pre-existing co-morbidities underwent treatment and resultant immunosuppression made them vulnerable to secondary infections like mucormycosis.

Aim: To analyse the knowledge, level of awareness and practice among the dental professionals towards the mucormycosis infection in patients of post-COVID-19 disease.

Materials and Methods: The cross-sectional survey was conducted from May 2021 to June 2021 among 428 dental professionals residing in Tamil Nadu, India. The 16 item questionnaire consisted of questions about knowledge, awareness and practice regarding post-COVID mucormycosis infection by dental professionals and were sent to the dental practitioners through online portals. The responses were tabulated and the results were analysed using Chi-square test.

Results: The study participants included 264 (61.68%) females and 164 (38.32%) males dental professionals. The dental professionals who participated were in the age range of 21 years to 45 years with a mean of 29.87±6.52 years. The subjects were categorised under general dental practitioners 254 (59.34%), postgraduate students 96 (22.4%), speciality dental practitioners 78 (18.22%). Total 406 (94.86%) respondents agreed that oral examination is necessary for post-COVID patient. Out of 428, 306 (71.49%) of the participants responded that tooth pain associated with headache is a watchful sign in diabetic post-COVID patients.

Conclusion: This study emphasises the role of dental professionals in diagnosis and management of mucormycosis infection in patients of post-COVID-19 disease. Dental professionals demonstrated adequate knowledge about post-COVID mucormycosis. This may act as a source of information for the future pandemic crisis.

Keywords: Coronavirus disease 2019, Dental practitioners, Mucorales infection

INTRODUCTION

The coronavirus disease 2019 (COVID-19) is a contagious infection caused by the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which may be associated with a wide range of disease patterns. The first known case was identified in Wuhan, China in December 2019 and it has since spread worldwide, leading to an on-going pandemic [1].

The disease pattern of COVID-19 shown association with bacterial and fungal co-infections [2]. This leads to an emerging concern, especially because of their complex diagnosis, severity, and increased mortality [3]. Reports have suggested that patients who survive COVID-19 may experience impairment or prolonged symptoms in their overall health status after their acute phase recovery [3,4].

Various oral mycoses such as candidiasis, aspergillosis, mucormycosis, cryptococcosis, histoplasmosis, blastomycosis are reported with COVID-19. The steep rise in cases of mucormycosis in patients of COVID-19 remains one of the most devastating complications in uncontrolled diabetes with mortality rates of 40-80% [5]. Maharashtra, a state in India documented 1500 cases of post-COVID mucormycosis with 52 deaths in May 2021 [6].

Among various presentations of mucormycosis, ROCM (Rhino-Orbital-Cerebral Mucormycosis) is the commonest variety seen worldwide. It is frequently associated with uncontrolled diabetes and diabetic ketoacidosis. The pulmonary mucormycosis is associated with neutropenia, bone marrow and organ transplant, and haematological malignancies, while gastrointestinal mucormycosis seen in malnourished individuals [7].

Mucormycosis is a potentially lethal invasive fungal infection caused by saprophytic aerobic fungi *Rhizopus*, *Rhizomucor*, and *Cunninghamella* genera of the order mucorales, now called Rhidopodaceae, which colonizes the oral and nasal mucosa and paranasal sinuses [8]. The disease usually evolves rapidly in patients with compromised immune system; that is, those with human immunodeficiency virus infection, uncontrolled diabetes, malignant diseases, and solid organ transplantation [9].

Dentists should have a high degree of clinical suspicion and keep COVID-19 Associated Mucormycosis (CAMCR) in the differential diagnosis of a severely ill patient with COVID-19 and diabetes mellitus, especially if rhino-orbital or rhino-cerebral presentations are noted [4]. To date, no study has investigated the knowledge, attitude and practice of dental professionals towards post-COVID mucormycosis in the Indian scenario. Hence, the present study was aimed to assess the knowledge, attitude, and practice regarding post-COVID mucormycosis among dental professionals.

MATERIALS AND METHODS

A descriptive cross-sectional survey was carried to assess the knowledge, attitude, and practice about post-COVID mucormycosis among the dental professionals. The study was conducted from May 2021 to June 2021 at Chengalpattu, Tamil Nadu, India. The planning of this study was based on the guidelines of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE initiative). The study protocol was approved by the Institutional Review Board (IEC-KIDS no: KIDS/013/2021) before start of the study.



Original Article

Accuracy of Cone-Beam Computed Tomography Software in Predicting the Size of Impacted Canine: A Preliminary Study

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III

Main Points

- This study aims to compare and analyze the Precision & Accuracy of four CBCT software programs used in predicting the mesiodistal diameter of impacted canine and its reliability was compared with measurements made by digital vernier caliper.
- There were no clinical (in vivo) studies have been conducted to assess the accuracy and reliability of CBCT software.
- Every year many software programs have been introduced. Hence, it is highly essential to evaluate software programs for accuracy and reliability before they are implemented for medical practice.

ABSTRACT

Objective: To compare and analyze the precision, accuracy, and reliability of commonly used cone-beam computed tomography (CBCT) software in predicting the mesiodistal diameter of impacted canines.

Methods: This study was conducted on 11 patients (six males and five females, mean age: 17.5±5.5 years) with either unilateral or bilateral impacted canines in the maxilla or mandible. DICOM data sets of the patients obtained from CBCT scans were then loaded and visualized with four selected CBCT software to measure the widest mesiodistal diameter of the impacted teeth. Physical measurements using a digital vernier caliper, kept as a control, were also made on the extracted teeth and orthodontically erupted teeth. The collected data underwent statistical analysis, and the statistical significance level was set at p<0.05.

Results: The Bland-Altman analysis was performed to quantify the agreement between different software to the digital caliper, showing a narrow difference for all plots. Kruskal-Wallis ANOVA test followed by a post hoc test was performed to determine whether there was any difference in measuring the mesiodistal diameter of the impacted canine among the five methods, and tend no statistically significant difference was found among the five methods. Intraclass correlation (ICC) was performed, and measurements made with all CBCT software yielded an ICC greater than 0.95, indicating high reliability of the selected software.

Conclusion: All the evaluated CBCT imaging software exhibited a high degree of reliability, and accuracy in precise measurement of the mesiodistal diameter of an impacted tooth.

Keywords: Cone-beam computed tomography, software validation, data accuracy, tooth, impacted canine

INTRODUCTION

Predicting the size of unerupted or impacted teeth is one of the notable challenges in orthodontic practice for precise diagnosis and treatment planning. The variation between the space needed for the dentition and space available in the dental arch will lead to crowding or spacing,¹ consequently, an accurate estimation of the mesiodistal diameter (MDD) of the erupting permanent teeth is necessary to decide whether sufficient space is available for the permanent teeth to erupt correctly. Furthermore, it plays a vital role in determining eruption guidance, space maintenance, space regaining, or extraction during orthodontic treatment planning.

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