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Special Issue

Prosthodontics

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President's message

Dr. Raveendranath M.

Friends,

"Actions speak louder than voice"

This is may be my last Message as President of IDA Kerala State since my term ends on 13/01/2013. I cannot be a judge of my actions and I won't do it also. But I am very happy since I could initiate new thoughts in IDA which I wished and promised. In the new age, new thinking should come and that should be lead by new Generation. I am proud of my colleagues who imbibed my concept, stood firm, worked hard silently and proved their commitments to IDA. The CDH, CDE, KDJ, Website, Cultural Committee, Sports Committee excelled in their performances. Other office bearers especially Secretary and other committee support me as rock behind in administration. I believe only in team work and in short I world rate this year as a reflection of team work. I firmly believe that growth of an association depends on the inner discipline and I tried my best to infuse discipline in the minds of members and I could earn support from all local branch Presidents and Secretaries and Head office as well. We could convince, Government, DHS, DME, KDC, KUHS and DCI our commitments to profession and now they are very considerate to us.

Our forth coming activities are the historic State wide Dental Health Survey, Hope regularization, National Student Convention and grand finale- State conference on 11, 12 & 13 January 2013 at LuLu Convention Center Trichur, which will be witnessing a U.S. Certified course and presence of foreign faculty for the first time in Kerala State conference.

By the time this message reaches you our state wide Dental Health survey will be got inaugurated. Dental health status of Kerala populations is arbitrary all these year and is going to be a reality soon.

In a dream move we could tie-up with Federal Bank in a mutually beneficial manner for three years. A customized banking partner is always a blessing and a big achievement. It is our duty to avail the benefits, strengthen the bond and show other IDA units the true spirit of IDA Kerala State.

IDA Kerala State is hosting National student convention for the first time and it will be held on 8 & 9 December at PMS Dental College Trivandrum.

HOPE is the back bone of IDA Kerala State and its regularization is going to happen soon.

If I am asked to give an advice to my successor I would share the first mentioned proverb "Actions speak louder than Voice" I am always lead by this proverb and I lived to it.

Before stepping down I salute you all and invite you all to the 'Land of Poorams' Trichur for the grand finale of our activities on 11, 12 & 13 January 2013.

Thanking You,

Dr. M. Raveendranath
President -IDA Kerala State

Professional standards through examinations

Dr. K . Nandakumar

Dental education is the bedrock on which high-quality dental healthcare which our country needs is built. Educators are concerned about two factors: training and education. Training is important but education is vital. The newly graduated dentist needs extensive knowledge and skills and that is where training gains importance. But education during these formative years will establish the principles, attitudes and essentially the core value systems that will guide the dentists through their ever-changing careers. Dental students are educated to achieve excellence and that means students must be curious about new ideas, eager to know more and do things better. Our challenge is to ensure that dental education reflects the essence of contemporary practice and the ever-changing expectations of the society, while resisting the changes to the core values of professional practice. This thought process was initiated in the context of the poor results in the examinations held by the health university. The brunt of the blame is always borne by the teachers. In fact teachers are totally handicapped because they are restricted in the performance space. Students are supplied by either the management or by the government. Government students pass through a stringent screening process but the same cannot be claimed by the management counterparts. Teacher is just like an ornament maker. He can make ornaments in gold, silver, copper or aluminium. How can he own the responsibility on the value of the ornament? The onus of responsibility rests with the supplier of the metal. We cannot have different systems of examinations for different types of students. The parents who push their children to professional courses should make an initial assessment on the intellectual capability of the children. It is ridiculous to make requests for a pass in the examinations. It is painful to see that some of the parents are even professionally qualified and fully aware of the nuances of the professional education. One parent has the audacity to argue with the teacher stating that his ward has limited intellectual capacity and that is why he has paid the huge sum. He further argued that it is the teacher's responsibility to give marks. Majority of the managements also endorse parents' views and pressurise the staff. The proposed national eligibility and entrance examination, if implemented might explore a new path. All those who are concerned with dental education should convince the society that the standard of dental education and dental health can be ensured only though assessments conducted with strict norms.

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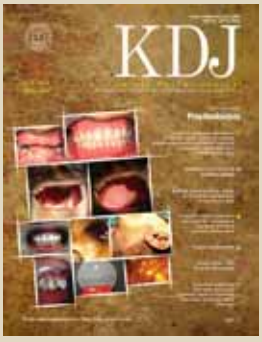
Prosthodontics today



Prosthodontic procedures include crowns, bridges, veneers, inlays, onlays, complete and partial dentures. Dental implants have become the preferred method for replacing missing teeth. So many prosthodontic procedures today are done with implants as the support instead of the natural teeth or gums. Prosthodontic care is provided by both general dentists and prosthodontic specialists.

A prosthodontist specializes in the esthetic restoration and replacement of teeth. Prosthodontists receive three years of additional training after BDS, and restore optimum appearance and function to your smile. Additional training for prosthodontists is earned through a university-based program accredited by the Dental Council of India (DCI). Prosthodontics is one of nine specialties recognized by the DCI. The training includes reviews of the literature, lectures, treatment of patients and laboratory experience in fabricating restorations.

Prosthodontists also receive advanced training in implant dentistry, TMD-jaw joint problems, traumatic injuries to the mouth's structures, congenital or birth anomalies to teeth, snoring, sleep disorders, and oral cancer reconstruction and continuing care.

The recognised specialities in prosthodontics are Removable prosthodontics, fixed prosthodontics, maxillofacial prosthetics, implant prosthodontics, studies on occlusion and aesthetic dentistry.

Edited by: **Dr. K. Nandakumar,** Hon. Editor • Published By: **Dr. Shibu Rajagopal,** Hon Secretary • **For IDA, Kerala State Branch** • Production: **Suman Graphics,** sumangfx@gmail.com

Impact of various concentrations of fluoride mouth-washes on calcium precipitating bacteria and electro-chemical behavior of nickel-chromium dental casting alloy

*S. Madhu Mahadevan, **T.J. Suneetha, ***Lin Kovoor, ***S. Ramesh Raja

Abstract

Objective: To evaluate the anti bacterial efficacy of three different concentrations of fluoride mouthwashes and electro chemical behavior of Ni-Cr alloy

Methodology: Antibacterial efficacy of fluoride mouthwashes are carried out by epifluoroscence microscopy, anti microbial zone assay and scanning electron microscopic observation. Electro-chemical behavior of Ni-Cr alloy was carried out by polarization studies using GPES software.

Results: Out of the three fluoride mouthwashes, MW-3 with 904 ppm exhibits high anti bacterial efficiency compared to MW-1(226 ppm) and MW-2(452 ppm).Ni-Cr alloy is more corrosive with MW-3 (904 ppm).

Conclusion: It was observed that anti bacterial efficacy is more with high concentrations of fluoride mouthwashes, but at the same time Ni-Cr alloy is more corrosive in the same environment.

Key words:– fluoride mouth rinses – antimicrobial efficacy – Ni-Cr alloy system- Corrosion potential.

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Introduction

Corrosion is a chemical process with adverse effects on dental casting alloys affecting its properties such as esthetics, strength and bio-compatibility. Systemic and local toxicity, allergy and mutagenicity all results from the elements in the alloy being released during corrosion. Use of fluoride is well known for its anti-cariogenic property, prescribed routinely by dentist as toothpaste and mouthwashes. Since 1945 the drinking water supplies in many countries were fluoridated, and fluoride was also made available to the public through tablets, mouth rinses, lacquers, or by adding fluoride to dentifrices. Recent studies reveal that fluoride ions exhibits antimicrobial and anti-plaque activity. Meanwhile in the present scenario, gold alloys are being substituted by base-metal alloys for the fabrication of crown and bridges, cast partial frame work and even as super structure for implants. Recent studies indicates that the newer alloy systems like Ni-Cr alloys are more corrosive in the oral environment.

This study evaluates the anti-bacterial efficiency of different concentrations of fluoride mouth-washes with chlorhexidine and also its impact on the corrosion potential of Ni-Cr dental casting alloy.

Materials and Methods

Three different concentrations of mouth washes used in the study.

1) Mouth-wash 1 (MW-1) 0.2% Chlorhexidine + 226 ppm sodium fluoride.

2) Mouth -wash 2 (MW-2) 0.2% Chlorhexidine + 452 ppm sodium fluoride.

3) Mouth -wash 3(MW-3) 0.2% Chlorhexidine + 904 ppm sodium fluoride.

Composition of Ni-Cr alloy: Ni-63%, Cr-25%, Mo-11% other trace elements 1% (Ivoclar).

Ni-Cr alloy specimens were immersed in B4 broth with mixed bacterial cultures and were inoculated. Bacterial attachments were performed for weeks. After the biofilm formation on the Ni-Cr alloy, the specimens were removed and 10ml of each mouth washes were gently added on the

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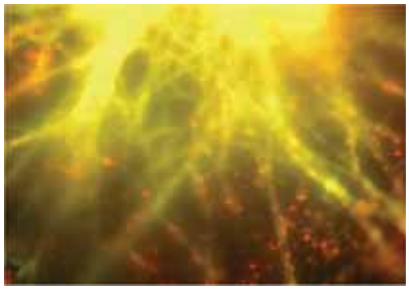

Fig.1 MW -1–0.2% chlorhexidine + 226 ppm sodium-fluoride after 24 hrs

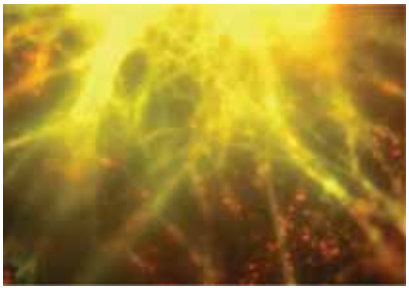

Fig.2 MW -1–0.2% chlorhexidine + 226 ppm sodium-fluoride after 48 hrs

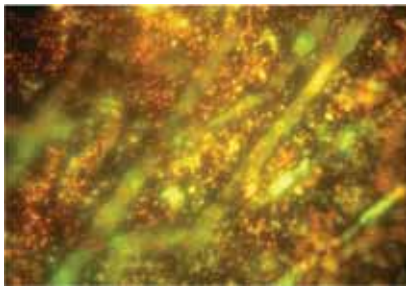

Fig.3 MW -2–0.2% chlorhexidine + 452 ppm sodium-fluoride after 24 hrs

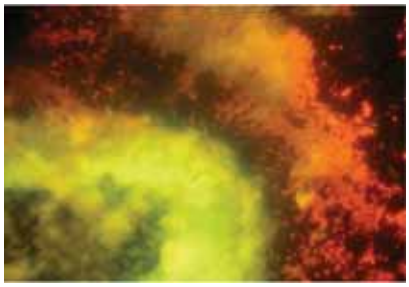

Fig.4 MW -2–0.2% chlorhexidine + 452 ppm sodium-fluoride after 48 hrs

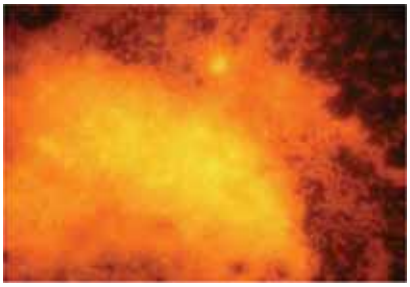

Fig. 5 MW-3–0.2% chlorhexidine + 904 ppm sodium-fluoride after 24 hrs

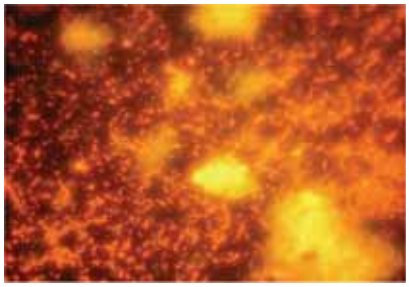

Fig.6. MW -3–0.2% chlorhexidine + 904 ppm sodium-fluoride after 48 hrs

biofilm metal surface for 3 minutes. Calcium precipitating bacteria gets adhered on the metal surface during the incubation period. Calcium precipitating bacteria includes streptococcus mutans s.sanguis, s.mitis, s.salivarius.

Anti-bacterial efficacy of different concentrations of fluoride mouth-washes were carried out by

1) Epi-fluoroscense microscopy.
2) Anti-microbial zone assay.
3) Scanning electron microscopic observation.

1. Epi-fluoroscense microscopy:

The specimens with bacterial bio-film on the metal surface were immersed in mouth-wash solution. Then two drops of 0.01% aqueous solution of acridine orange and ethidium bromide (1:1) were added. These samples were kept in the incubator for 15 minutes. Epi- fluorescence microscope is used to find out live and dead cells. Live cells exhibits green fluorescence and dead cells exhibits red fluorescence light.

In Epi-fluorescence microscopic observation, MW-3 shows more inhibition compared to MW-1 and MW-2 by the characteristic red colour.

2. Anti-microbial zone assay:

Innoculum is poured in the culture plate and allowed to solidify. Bacterial culture is then added and placed in 10 mm diameter sterile disc. To this, 10ml of mouthwash solution is added. After 24 and 48 hours, Zone formation is observed. Increased zone shows more inhibition of bacteria.

3. SEM observation

Scanning Electron Microscopy is used to find out the individual bacterial cell morphology and cell disturbance. Bacteria is isolated and 10 ml mouth wash solution is added. Scanning electron microscopic observation is carried out after 48 hours.

Corrosion study

The Electro-chemical behavior of nickel–chromium dental casting alloy with various concentrations of fluoride mouth—washes were carried out using polarisation studies. Specimens were immersed in separate 250 ml conical flask containing different concentrations of fluoride mouth washes. Polarization measurements were carried out by using GPES software, employing a platinum electrode as counter electrode, saturated calomel electrode as reference electrode and the Ni-Cr alloy as working electrode. The system was allowed to attain a steady potential value for 10 minutes. The polarization curves were obtained by scanning from open circuit potential after 7 days. The scanning rate was 1 mV/ sec.

Results

Biocidal effect of Mouth wash: High bacterial population was noticed in MW-1. Moderate in MW-2, where no growth was noticed in MW-3. Here MW-3 with fluoride concentrations of 904 ppm is better than other Mouthwashes against CPB system. The anti bacterial efficacy depends upon the concentration of fluoride ions. Fluoride ions can react with bacterial cell wall membrane and destroy the cell wall finally resulting in cell death. The total viable count reveals that MW-3 has higher biocidal effect when compared to other mouth washes.

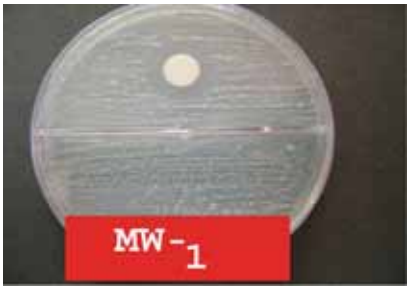

Fig.7 MW -1–0.2% chlorhexidine + 226 ppm sodium-fluoride after 24 hrs

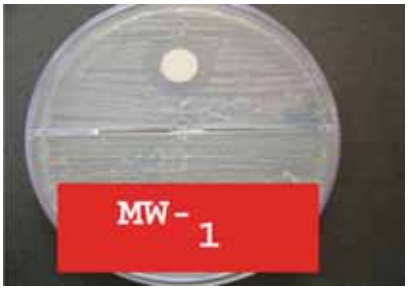

Fig.8 MW -1–0.2% chlorhexidine + 226 ppm sodium-fluoride after 48 hrs

Fig.9 MW -2–0.2% chlorhexidine + 452 ppm sodium-fluoride after 24 hrs

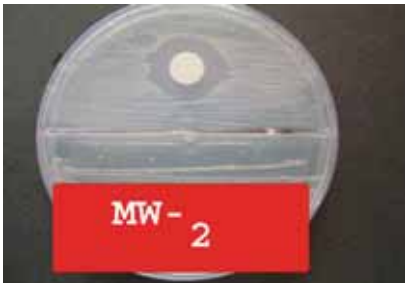

Fig.10 MW -2–0.2% chlorhexidine + 452 ppm sodium-fluoride after 48 hrs

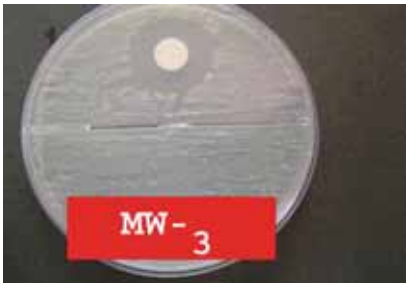

Fig.11 MW-3–0.2% chlorhexidine + 904 ppm sodium-fluoride after 24 hrs

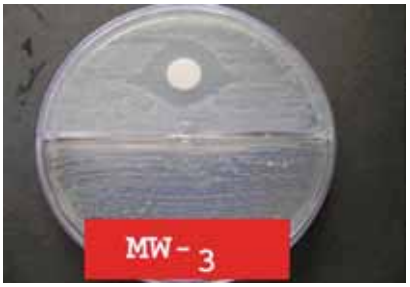

Fig.12 MW -3–0.2% chlorhexidine + 904 ppm sodium-fluoride after 48 hrs

Zone formation: MW-1 shows-1.7 cms zone growth, MW-2 shows-2.0 cms zone growth, MW-3 shows-3.o cms zone growth.

Corrosion results: The corrosion potential of nickel chromium dental casting alloy with fluoride mouth washes at various concentrations were observed using electro-chemistry studies. It revealed that the nickel chromium alloy in mouth wash (MW-3) with more fluoride concentration (904ppm) was more corrosive than other mouth wash solution. This indicates that a high concentration of fluoride mouth washes causes corrosion of NI-Cr dental casting alloy.

Discussion

In the early days, the caries-inhibiting effect of fluoride was thought to be primarily due to the incorporation of fluoride by the minerals during development of the teeth. Salivary flow is one of the main factors influencing caries because of the ability of this biological compartment to bathe the teeth and the oral biofilm. When fluoridated water is ingested and fluoride is excreted back out through the salivary ducts, fluoride levels in saliva barely increases above the baseline. Specifically, fluoride continually present in the oral fluids affects the demineralization and remineralization processes by shifting the balance to a less cariogenic condition. Fluoride rinses, lacquers, and the use of fluoride toothpaste cause an elevation of the fluoride levels in the oral fluids. The reaction between acid products with fluoride and hydroxyapatite in enamel determines the first stage in the formation of precipitates of CaF_2, which are deposited as a fine layer (1-2 microns) on the enamel surface. The fluorides are concentrated in a homogeneous layer on enamel surface due to their surface activity and they are forming a protective, adhesive layer. The saliva does not wash calcium away, on the opposite, it is fixed on the enamel surface as CaF_2 compound. This superficial layer is responsible for the protective activity against decay and is much more resistant than the profound layer of the enamel. Chlorhexidine gluconate is a cationic biguanide with broad-spectrum antimicrobial action, whose effectiveness in decreasing the formation of dental biofilm (plaque) and gingivitis has been demonstrated in dinical studies. Its mechanism of action is that the cationic molecule binds to the negatively-charged cell walls of the microbes, destabilising their osmotic balance. Chlorhexidine formulations are considered to be the "gold standard" anti-plaque mouth rinses due to their prolonged broad spectrum antimicrobial activity and plaque inhibitory potential. Previous studies have shown that chlorhexidine (CHX) is an effective anti-plaque agent. CHX application directly to surgical wounds in the oral cavity can delay and alter wound healing[11].

The present study was conducted *in vitro*, so it cannot be assumed that the results of antimicrobial efficacy could be proportional or transferable to the oral cavity and translated into clinical effectiveness. Studies have demonstrated the effectiveness of an antimicrobial mouth rinse in significantly reducing both salivary and mucosal levels of bacteria[17]. Human dental

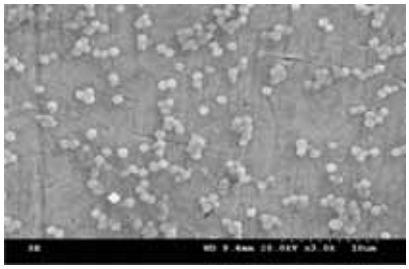

Fig. 13 MW -1–0.2% chlorhexidine +226 ppm sodium fluoride

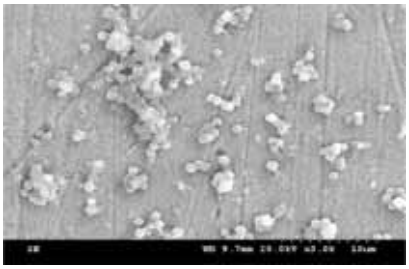

Fig. 14 MW - 2–0.2% chlorhexidine +452 ppm sodium fluoride

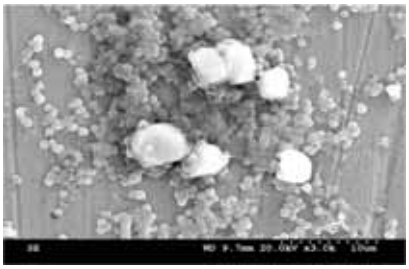

Fig. 15 MW -3–0.2% chlorhexidine +904 ppm sodium fluoride

SEM Results-MW-3 Shows more bacterial cell wall membrane destruction and cell death compared to MW-1 and MW-2

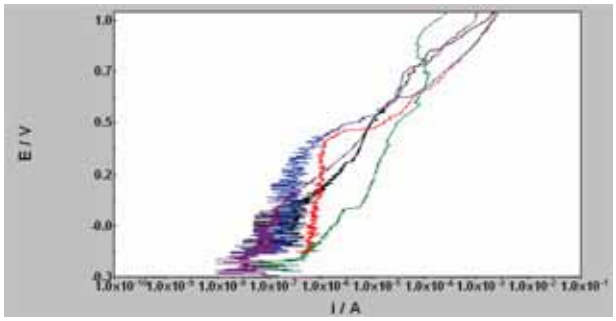

Fig. 16 Blue-artificial saliva, Red-only chlorhexidine 0.2%, Violet-MW-1, Black-MW- 2, Green-MW-3

plaque may be colonized by F-resistant bacterial strains in response to F pressure. This exposure to F may provide an ecological advantage to fluoride-resistant bacteria to colonize the dental plaque. Although it has been postulated to occur under normal physiological conditions, this is unlikely. After countless generations of bacteria whose ancestors might have initially been affected by F, the question remains as to whether these same bacteria have now adapted to ubiquitous low levels of fluoride[16].

The oral environment is particularly favourable for corrosion. The higher the corrosion rate of dental casting alloy, the greater the ionic release and greater the risk of unwanted reactions in the mouth. Corrosion presents the greatest problem in the specification of materials for dental applications. Ni –Cr dental casting alloy were developed as an alternative to gold based alloys for partial dentures and crowns. Ni-Cr alloy is more commonly used because of its superior properties in porcelain–fused to metal applications.

Conclusion

Good amount of anti-bacterial efficacy is attained with high concentrations of fluoride mouth washes. But Ni-Cr dental casting alloy is more corrosive in the presence of fluoride mouth washes in high concentrations. Thus in patients with nickel chromium dental casting alloy, high concentrations of fluoride mouth washes should be avoided or preferably substituted with other mouthwash formulations.

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Rehabilitation of acquired maxillary defects

*Pradeep C. Dathan, **Mohan Kumar T., ***Smitha Ravindran, ****K. Chandrasekharan Nair

Abstract

Acquired maxillary defects form the major portion of maxillofacial cases and the rehabilitation of these defects has become much predictable due to the advancement in impression materials. Elastomeric impression materials have potentially reduced the risks of making impressions. This article is about the specially designed impression tray, impression procedures and fabrication of prosthesis for a patient with bilateral total maxillectomy.

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Introduction

The most common cause of acquired maxillary defect is surgical treatment for carcinoma.

Such patients have already undergone considerable amount of loss of tissue, this loss impairs the function. The primary objective of rehabilitation is to restore the function and to reestablish the patience confidence. Rehabilitation of bilateral total maxillectomy case is very challenging to prosthodontist because retaining the prosthesis in place is nearly impossible as there is no underlying bone or adjacent teeth present[1]. Retention is possible by properly recording the scar band seen around the defect. The use of Elastomeric impression materials have potentially increased the accuracy and has reduced the risks of making impressions[2]. This article describes about the specially designed impression tray, impression procedures and fabrication of prosthesis for a patient with bilateral total maxillectomy

Case report

A 65 year old male patient who underwent bilateral total maxillectomy for adenocystic carcinoma of palate, reported to the department for rehabilitation. On examination the defect was found to be well healed with a well formed scar band all around. (Fig 1). A special tray was fabricated with self cure acrylic resin on the primary cast, obtained from an alginate primary impression. This special tray resembled a "Tennis racket" the center portion (palatal portion) of the tray was left open; a long flat handle was attached to the anterior aspect of the rim tray (Fig 2). The tray was checked in the patient's mouth. Putty impression material was placed on the borders of the tray in increments. It was seated in the patient's mouth and through the palatal opening the impression material was gently adapted to the walls of the defect. This was repeated until the entire defect was recorded and a wash impression was made using light body (Fig 3). The impression was poured in dental stone. The obturator outline was marked on the final cast. Waxing up was done along the walls and it was later acralized.

The acrylic rim was tried in the patient's mouth to know the fit (Fig 4). The oral aspect was then sealed using a thin sheet of self cure acrylic resin to form an open bulb obturator (Fig 5). It was then finished polished and delivered to the patient (Fig 6).

Discussion

Maxillofacial prosthetics is the art and science that deals with the anatomical functional and cosmetic reconstruction using inert substitutes. Retention of the prosthesis is always challenging to the prosthodontist[3]. Intra orally retention can be achieved from the remaining teeth or ridge. In bilateral total maxillectomy the chances of retaining the prosthesis is only through the scar band formed at the borders of the defect. With the

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Fig. 1 Bilateral Maxillectomy defect

Fig. 2 Special Tray

Fig. 3 Putty wash impression

Fig. 4 Obturator tried in the patient

Fig. 5 Oral surface closed with self cure rein

Fig. 6 Obturator inserted

use of specially designed tray and addition silicone impression material, the borders and extend of the defect was properly recorded. With the fabrication of open bulb obturator the weight of the prosthesis was kept minimum this aided in retaining the prosthesis.

Conclusion

In this new era aseptic surgical reconstruction may be the treatment of choice. But in majority of the cases reconstructive surgeries are carried out in different stages of long intervals. In such cases prosthetic reconstruction is the only method of choice available to the patient. In bilateral total maxillectomy case the problem of retention is overcome by the use of proper impression material and impression technique. The weight of the prosthesis was minimized by the fabrication of open bulb. The prosthesis not only restored the function but also boosted the confidence of the patient.

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Modified overdenture bar design for Prosthetic rehabilitation of mandibular arch

*Liji Mathew, **Anil Mathew

Abstract

Overdentures cover a number of possible solutions for patients with some or nearly all the teeth missing. Even though it resembles a complete denture externally the combination of mucosal and periodontal support in the prosthesis is what that makes overdentures special. In addition to retention and support that can be gained from the retained roots, overdentures are actually superior to conventional complete denture in masticatory force, chewing efficiency and even force distribution. Healthy retained roots are natural implants and although some may have limited length of usefulness, using them will improve the quality of patient lives.Various attachments can be added for these overdentures to increase the retention. Here we discuss a case report of Oral rehabilitation of a 54 year old female patient using a modified overdenture design.

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Introduction

Overdentures are any removable dental prosthesis that covers and rests on one or more remaining natural teeth and the roots of the natural teeth, and /or dental implants: a dental prosthesis, that is partially supported by natural teeth, natural tooth roots, and /or dental implants.[1] They are also called by many other names; overlay denture, overlay prosthesis, superimposed prosthesis, hybrid dentures, teeth supported or assisted prosthesis. The physiological basis of overdenture therapy lies in the continued retention of reduced natural teeth under the denture base.[4] The abutment teeth so retained apart from supporting and anchoring the dentures, contribute towards continued preservation of remaining alveolar bone and even in periodontal proprioception[5]. In overdentures the retained teeth abutments maybe few or numerous, may be modified coronally or restored and frequently endodontically prepared. The objectives are to distribute stress concentration between retained[3] abutments and denture bearing tissues. Overdentures help us to reduce to some extend some of the complete denture consequences like residual root resorption, loss of occlusal stability, undermined aesthetic appearance and compromised masticatory function.[9] It is also considered as a gentler transition to the completely edentulous state.

Case Report

A 54 year old female patient reported to the Department of Prosthodontics, Amrita School of Dentistry with the chief complaint of missing upper and lower teeth which she wanted to replace since she had difficulty in mastication and speech. On examination all her teeth were missing except for the maxillary central incisors and canines and mandibular canines. The case was palnned to receive modified cast partial overdentures in the mandibular arch and acrylic removable partial denture in the maxillary arch. The mandibular canines were endodontically treated and prepared to receive metal ceramic crowns with bar attachment. A tentative jaw relation was recorded to determine the space available for the metal ceramic crowns and the bar attachment. Wax patterns were carved with the rest seat preparations on them so as to receive the cast partial over denture.

The metal ceramic crowns with the bar attachment were then cemented to the abutment teeth with the bar attachment. Special trays were fabricated and border molding was done. The impressions were then recorded. The cast partial RPD designing was done and the wax pattern was casted to get the metal framework. Jaw relations were recorded, face bow transfer was

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Fig. 1 Pre operative

Fig. 2 Crown preparation done # 33 and 43

Fig. 3 Metal ceramic crowns with rest seat prepared and bar attachment

Fig. 4 Crowns with bar attachment cemented in patients mouth

Fig. 5 Master cast with wax block out for duplication

Fig. 6 Cast partial frame work for try in

done and the casts were mounted, teeth arrangement was done. This was then tried in the patients mouth before further processing of the partial dentures. The importance of maintaining the health of the retained teeth was stressed upon since all the treatment advantages solely depended on their continued presence.

Discussion

Overdentures have always offered a sensible and a prudent appeal for dental practitioners and numerous patients have been benefited from it. The applied ingenuity of the technique has mitigated much of the time dependent inherent in complete denture service - retention and stability has been enhanced, residual ridge resorption retarded and patient-mediated immune response much improved.[1] The stability and retention of mandibular complete dentures have always been a continuing problem. There has always been a vocal minority of patients for whom conventional prosthetic techniques have been inadequate. In an attempt to help these patients, a variety of aids and materials have been tried such as springs, suction cups, adhesives, implants of various types, and magnets[4]. The objective of prosthodontics treatment listed by McGiney et al supply a scientific basis on which to provide care. (1) the elimination of disease (2) the preservation of the health and relationship of the teeth partial design and (3) the selected replacement of lost teeth, and the restoration of function in an esthetically pleasing manner[7]. Extra coronal attachment not only provides an esthetic outcome without visible conventional clasps but also provide excellent retention. It also reduces food impaction, plaque & caries on abutment tooth. These attachments improve patients comfort and chewing efficiency along with better control on occlusal forces.[6] One of the major benefits of attachments are the versatility they can add to treatment planning and design of a case[11]. One major limitations is the excessive torque applied to the most distal abutment. This may necessitate splinting of the abutments. Splinting may minimize the hazardous effects of excessively loading the abutments. However, the preferred number of splinted teeth is debatable[11]. Preiskel[13] reported the need for splinting all of the anterior teeth when an extra coronal attachment is used, whereas Kratochvil et al[14] suggested that fewer teeth need splinting. Splinting of abutments often necessitates reduction of sound tooth structure. In the above case anterior abutment were splinted to form metal ceramic restoration to reduce excessive load to the abutment. Metal clasp were replaced by extra coronal attachment to provide esthetically acceptable prosthesis. The potential moment for loads well away from the retainers highlight the difficulty of preventing distortion of flexible retentions tips unless some additional stabilizing component is incorporated. In addition the movement allowed is sufficient to act as a stress breaker between abutment and denture.

Conclusion

Precision attachments have always valuable tools in the armamentarium of the prosthodontics. The design of distal extension RPD incorporating attachment can achieve both function and esthetics. Extra coronal restoration is used to replace direct retainers in this case. The occlusal loading is placed on the soft tissue, thus reducing the occlusal loading for abutments of distal extension RPDs. In conclusion,

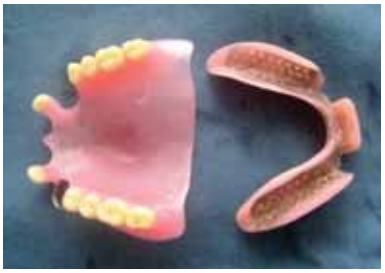


Fig. 7 Maxillary acrylic and mandibular cast partial modified over denture


Fig. 8 Post operative

the advantages of cast partial removable prostheses with attachment are esthetic and convenient.

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A modified tooth preparation technique for management of severely proclined maxillary anterior teeth

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Abstract

Proclined or labially placed teeth is a social stigma and treating such conditions is always a clinical challenge. Ninty percent of the present adult population prefers preservation of their existing dentition. They expect better esthetics within a short span of time. The dentist has a major role in restoring the patient's smile in the most cost effective manner.

This article presents a series of cases to demonstrate a new tooth preparation technique for correcting excessively proclined maxillary anterior teeth to a more aesthetic position with minimum overjet and without the use of dowel post and cores

Key words: proclined anterior teeth, periodontally compromised, orthodontically compromised, inscisal approach, splinting

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Introduction

Dentofacial attractiveness is particularly important to an individual's psychosocial well being. People with a normal dental appearance are judged to be more socially attractive over many personal characteristics than those with malocclusion. Clinicians are obligated to understand beauty, harmony, balance and proportion as perceived by society when planning treatment[1,2]. Severe proclination of anterior teeth poses an esthetic "disability" to the patient and treating such conditions is always a clinical challenge.

Proclination of anterior teeth mainly results from pathologic tooth migration which is defined as tooth displacement resulting when the balancing factors which maintain physiologic tooth positions are disturbed by periodontal diseases. The etiology of pathologic tooth migration appears to be multifactorial and includes periodontal bone loss and gingival inflammation, posterior overclosure, occlusal interferences, Angle's Class II malocclusion, shortened dental arch, soft tissue pressure from the tongue, lips and cheek. The maxillary anterior teeth tend to flare and elongate due to the lack of anteroposterior contacts resisting displacement and trauma from the opposing mandibular anteriors during protrusive movement[3].

Orthodontic treatment of periodontally compromised teeth is almost impossible as it could result in further periodontal breakdown and also the time required becomes a greater patient concern. Almost ninety percent of the patients prefer to retain their existing dentition. Prosthodontic management of such compromised conditions becomes a better treatment option for patients who seek treatment within a short period of time.

The various treatment options for proclined anterior teeth includes

1. Extraction and removable dental prostheses.
2. Extraction and implant supported fixed dental prostheses
3. Orthodontic correction if possible depending upon the periodontal status
4. Conventional tooth preparation of the flared anteriors followed by a dowel and core with a full coverage restoration

However, each of the treatment options mentioned above has its own disadvantages like inability to tolerate removable prostheses, costly implant procedures, time consuming orthodontic procedures, tendency for ledge formation and overcontouring of crowns prepared using the conventional tooth preparation technique further resulting in an

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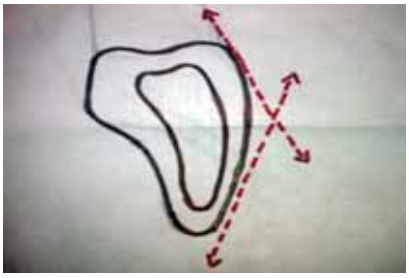

Fig. 1 Schematic representation of biplanar reduction.

Fig. 2 Biplanar reduction on model

Fig. 3 Oreintation of bur in model showing incisal reduction technique

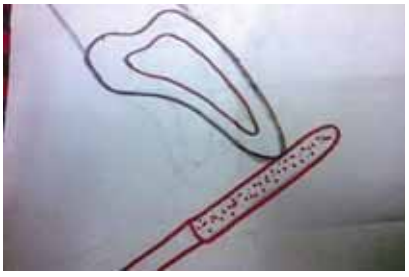

Fig. 4 Schematic representation

Fig. 5 Proclined anteriors, profile view

Fig. 6 Preparation done using incisal reduction technique; profile view

Fig. 7 Case 1, profile view showing the proclined maxillary anterior teeth

Fig. 8 profile view showing tooth reduction using incisal reduction technique

Fig. 9 Frontal view showing restored teeth

angulation of the dowel and core. This article presents a modified tooth preparation technique using an incisal approach to attain adequate reduction in the horizontal and vertical overlap in order to achieve the best esthetic results without extraction and use of dowel and cores.

Case reports

For the past five years around twenty patients were rehabilitated using the modified tooth preparation technique. All of them exhibited satisfactory esthetic results and frequent review of these cases showed that there was no further bone loss. Presented below are few such cases.

Each and every patient was managed in a systematic manner. The patients were selected based on the following criteria:-

1. Adult patients above thirty five years of age
2. Patients who wanted esthetic results in a short period of time
3. Horizontal overlap of about 10 – 20mm
4. Patients who wanted to retain their existing natural teeth

All the patients were examined to rule out any systemic problems. A thorough oral examination was conducted to evaluate the patient's existing periodontal status. The various diagnostic aids used were recording of periodontal pocket depths, OPG and IOPA x-ray to assess the periodontal status and bone levels, articulated diagnostic casts for assessment of occlusion, horizontal and vertical overlap, and clinical crown heights. Based on the findings only those patients who satisfied the following criteria were selected

1. Not greater than a moderate amount of bone loss
2. A minimum 1:1 crown root ratio
3. Mobility not greater than grade II

Based on the clinical findings, the patients were divided into two categories

Fig. 10 Profile view

Fig. 11 Case 2 proclined and spaced anteriors

Fig. 12 profile view

Fig. 13 Preparation done using incisal reduction technique

Fig. 14 profile view

Fig. 15 Frontal view of restored dentition

1. Patients whose teeth were periodontally involved and who needed to undergo flap surgery and endodontic treatment
2. Patients who did not require any periodontal surgeries but had to undergo supra and subgingival scaling, root planning and endodontic treatment.

The patients were informed about the sudden change in facial appearance. All the proclined teeth were prepared using the modified tooth preparation technique. Unlike the biplanar tooth reduction (Fig. 1 2,) following the labial tooth morphology used in the conventional technique, an incisally approaching tooth reduction technique was used in which the bur was oriented perpendicular to the incisal edge (Fig. 3, 4). Tooth reduction was carried out till the desired amount of horizontal and vertical overlap was obtained (Figs. 5, 6). The cervical third of the labial portion of the crown and the cingulum formed the final prepared tooth stump.

Case 1

A thirty five year old female patient reported with the chief complaint of excessively proclined maxillary and mandibular anterior teeth. Clinical examination revealed generalized diastema, recession, grade I mobility of the anterior teeth (Fig. 7).

Following periodontal therapy, the mandibular anterior teeth were splinted with a fixed dental prosthesis. The maxillary anterior teeth were endodontically treated and prepared using the modified tooth preparation technique and then restored with a fixed dental prosthesis (Figs. 8, 9, 10).

Case 2

A thirty eight year old female patient reported with the chief complaint of proclination and spacing in the maxillary anterior teeth (Fig. 11). Clinical examination revealed gingival enlargement with bleeding on probing, generalized grade II mobility of teeth.

Flap surgery and endodontic restoration of all the maxillary anterior teeth was done. The maxillary anterior teeth were prepared using the modified preparation technique to attain the required amount of horizontal and vertical overlap of teeth. The mandibular anterior abutments were prepared using the conventional tooth preparation technique. The prepared teeth were then restored with a fixed dental prosthesis (Fig. 12, 13, 14, 15)

Discussion

Non orthodontic correction of excessively proclined anterior teeth requires a thorough evaluation of various factors. A multidisciplinary treatment approach has to be maintained that requires the involvement of a periodontist, endodontist and a prosthodontist. After a thorough periodontal assessment regarding patient motivation, ability to maintain oral hygiene and the healing response to the various periodontal procedures, a proper treatment plan has to be executed.

In all cases, the proclined teeth were endodontically treated to prevent pulpal involvement during tooth preparation. Posterior occlusal contacts were established to maintain occlusal harmony. The poor

crown root ratios were corrected by reducing the crown lengths of the proclined teeth. The periodontally involved teeth were further stabilized by splinting with fixed partial dentures thus reducing tooth mobility. The prosthodontic concept of splinting teeth, especially abutments evolved from the need to compensate for the increased crown root ratios[4]. Nyman et al have demonstrated long term splint stability despite minimal periodontal support and hypermobility of isolated abutment teeth[5]. Splinting is an important concept in periodontally compromised teeth. Splinting around the corner expands the base in two directions and redirect mesiodistal and buccolingual forces. Stress redistribution permits effective treatment with minimal bone support. When teeth are joined together, any force on an individual tooth is redistributed to all of the splinted teeth. Root surfaces that resist poorly in one direction may provide surprising resistance in another. Splinting also prevents teeth from migrating and supraerrupting[6].

The proclined teeth were prepared using the modified tooth preparation technique. The conventional anterior tooth preparation technique is a two plane reduction of the facial surface[7, 8] following the normal tooth contour. If the conventional technique is used for preparing excessively proclined anterior teeth, it would result in a ledge formation at the marginal finish line and would also result in overcontouring of the final restoration and use of an angulated dowel and core which is detrimental.

In the modified tooth preparation technique, necessary reduction in the horizontal and vertical overlap can be achieved without the use of a dowel and core. As the teeth are prepared with the bur oriented perpendicular to the incisal edge, the cingulam portion of the tooth becomes the prepared tooth stump. The drastic reduction in the horizontal and vertical overlap resulted in a marked change in the patients facial appearance. Prepared teeth were then restored with metal ceramic prosthesis.

Conclusion

The modified tooth preparation technique can be used in patients with excessively proclined maxillary anterior teeth to achieve an excellent esthetic outcome and a reduced total cost of treatment as dowel and cores are not used.

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Gingival displacement

* Haby Mathew Somson, ** Alex Mathews Muruppel, *** Sudeep S.

Abstract

The accurate impression of every detail of the prosthetic area is of extreme importance for the successful prosthetic restorations. However, appropriate gingival retraction of sulcus gingivalis is of utmost importance, as even the most modern nano impression materials are unable to guarantee an accurate marginal detail. A high-quality impression that provides the necessary marginal detail is not only required for good fit, but also for optimal esthetic results. This paper enumerates the current concepts in gingival displacement and the newer techniques and materials in managing gingival tissues.

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The procedure used to facilitate effective impression making with intracrevicular margins is gingival ''displacement'' as opposed to gingival ''retraction''. The goal of the procedure is to reversibly displace the gingival tissues in a lateral direction so that a bulk of low-viscosity impression material can be introduced into the widened sulcus and capture the marginal detail.The critical sulcular width in this regard seems to be approximately 0.2 mm. A width of less than 0.2 mm results in impressions, that have a higher incidence of voids in the marginal area, an increase in tearing of the impression material, and a reduction in marginal accuracy. (*Donovan et al, 2004*). [1]

Techniques for gingival displacement have been classified as mechanical, chemical, surgical, and combinations. The method of gingival displacement used by the majority of practitioners is a combination of mechanical-chemical displacement using gingival retraction cords along with specific hemostatic medicaments. [2]

Methods

1. Physico Mechanical Method
2. Chemico-Mechanical method.
3. Chemical method.
4. Rotary curettage.
5. Electro Surgical Method.
6. Surgical Method
7. Lasers

Techniques

Gingival displacement can be accomplished using several different techniques. Types of retraction cords are 1) braided and 2) knitted.[3] No clinical study has demonstrated the superiority of one technique over another, so the choice of which procedure to use depends upon the presenting clinical situation and operator preference.

1. The single cord technique
2. The double cord technique
3. The infusion technique of gingival displacement
4. The ''every other tooth'' technique

The single cord technique

Indications:- making impressions of one to three prepared teeth with healthy gingival tissues

Procedure: Tooth preparation is accomplished. After tooth preparation, a length of gingival retraction cord is selected. The largest-diameter braided cord that fits in the sulcus should be used. The cord soaked in medica:ment is carefully packed into the sulcus in a counterclockwise direction. Wait 8 to 10 minutes before removing the cord and making the impression (Donovan et al, 2004). Cord should be soaked in water by spraying water from three way syringe to allow it to be easily removed from the sulcus. The tooth preparation is gently dried and the impression made.

The double cord technique (Piggyback technique)

Indications:-

1. Making impressions of multiple prepared teeth and when making impressions when tissue

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health is compromised and it is impossible to delay the procedure.

2. Multiple preparations where gingival fluid exudate can seep over the prepared cervical margins of the last teeth to be impression after cord removal.

Procedure

A small-diameter cord is placed in the sulcus. This cord is left in the sulcus during impression making. A second cord, soaked in the hemostatic agent of choice, is placed in the sulcus above the small-diameter cord. The diameter of the second cord should be the largest diameter that can readily be placed in the sulcus. After waiting 8 to 10 minutes after placement of the large cord, the second cord is soaked in water and removed. The preparation is dried, and the impression is made with the primary cord in place. After successfully making the impression, the small-diameter cord is soaked in water and removed from the sulcus.

The infusion technique of gingival displacement

Procedure

After crown preparation, hemorrhage is controlled using a specifically designed dentoinfusor with a ferric sulfate medicament. Two concentrations of ferric sulfate, 15% and 20% are available. The 20% material is preferred because it is less acidic than the 15% solution and does not remove the smeared layer of dentin from the prepared tooth.The infusor is used with a burnishing motion in the sulcus and is carried circumferentially 360° around the sulcus. The medicament is extruded from the syringe/infusor as the instrument is manipulated around the sulcus.When hemostasis is verified, a knitted retraction cord is soaked in the ferric sulfate solution and packed into the sulcus. Leave the cord in place 1 to 3 minutes.

Disadvantages

1. When using ferric sulfate materials, the tissues may be temporarily darkened and blue-black appearance usually disappears few days.[4]

2. Since the cord is left in place for only 1 to 3 minutes, it may not provide adequate lateral displacement to permit an adequate bulk of impression material into the sulcus.[5]

The ''every other tooth'' technique

When making impressions of anterior tooth preparations, it is critical that no damage is done to the gingival tissues that may result in recession. With teeth with root proximity, placing retraction cord simultaneously around all prepared teeth may result in strangulation of the gingival papillae and eventual loss of the papilla. This creates unesthetic black triangles in the gingival embrasures. This undesirable outcome can be prevented with the ''every other tooth'' technique. This can be used with the single or double cord technique.

Procedure

Retraction cord is placed around the most distal prepared tooth. No cord is placed around the prepared tooth mesial to this tooth. Retraction procedures are completed on alternate teeth and an impression is made. Then the second set of alternate teeth are retracted and a second impression made. A subsequent pick-up impression allows fabrication of a master cast with dies for all eight prepared teeth.

Newer materials

EXPA- SYL

Expa-syl is a noncord gingival retraction product. It consists of a green-colored paste provided in glass cartridges similar in size and shape to anesthetic cartridges. A metal dispenser gun is used to express the paste through a disposable metal dispensing tip into the gingival sulcus prior to impression making or prosthesis cementation. The paste is left in place for one to two minutes and then removed by rinsing.

Composition - micronized kaolin, aluminum chloride, and water.

It creates and maintains space in the sulcus due to the optimal characteristics of its viscosity; there is no chemical reaction, material expansion or setting once it is applied.

Advantages

1. Less gingival recession and inflammation
2. Reduced chair time,
3. Presence of the hemostatic agent, aluminum chloride, controls bleeding.
4. Easily removed.
5. Cartridge delivery: no contamination

Disadvantages

1. It is important to rinse thoroughly and verify that Expa-syl is totally removed from the sulcus as residue of the ingredient, aluminum chloride, may inhibit set of polyether impression materials.

2. It could generate pain and/or create light reversible gingivitis as the residue may remain in the sulcus

3. Not radio-opaque.


Fig 1. Gingitrac


Fig 2. Gel Cord


Fig 3. Use of Lasers


Fig 4. Stay put

Gingifoam system

Gingifoam is a silicone elastomer that vulcanizes at room temperature.

Composition

Polydimethylsiloxane base and Tin based catalyst

Uniting the base with the catalyst a reaction of hydrogen liberation takes place. The hydrogen gas that forms produces the characteristic foam of the material because the gas foams within the silicon matrix while the matrix itself vulcanizes in elastomer to increase the size up to four times its initial volume.

Magic foamcord gingival retraction system

Magic FoamCord is a new non-hemostatic gingival retraction system by Coltène / Whaledent.[6] It is reportedly the first expanding vinyl polysiloxane material designed for retraction of the gingival sulcus without the potentially traumatic and time-consuming packing of retraction cord.

Magic Foam Cord material is syringed around the crown preparation margins and a cap (Comprecap) is placed to maintain pressure. After five minutes, the cap and foam are removed and the tooth is ready for the final impression. Comprecaps are available in 3 sizes. Small – 7 mm, Medium – 10 mm, Large – 12.5 mm.

Advantages:

1. Less traumatic to tissues than retraction cord.
2. Colour of foam makes it easy to see during use.
3. Easy to remove material from preparation and sulcus.
4. Adequate working time.

Disadvantages:

1. No hemostasis provided
2. Relatively expensive compared with retraction cord
3. No improvement in speed or quality of retraction compared with cord
4. Less effective on subgingival margins
5. Intraoral tips may be too large to adequately inject material into sulcus

Gingitrac

Select appropriate GingiCap size. Syringe the retraction paste into the GingiCap and around the prep. Request the patient to bite down. Wait 3 to 5 minutes. This virtually eliminates waste, and allows for easy set up and no cleanup. Removal is fast and easy. The set GingiTrac slips out cleanly without trauma or rinsing.(Fig 1)

Advantages

1. More patient-friendly,
2. Easier to express than the automix gun with less waste.
3. The smaller size and ease of use will save valuable chair time and reduce patient stress

Disadvantages

Same as that of magic foam cord.

Gell cord

Aids in gingival retraction and controls bleeding. Unit dose cartridges of 25% Aluminum sulfate gel with a raspberry flavour. Advantage is that it provides a lubricating effect for placing cord into the sulcus. (Fig. 2)

LASERS (Fig. 3)

Advantages

1. Excellent hemostasis[7]
2. Reduced tissue shrinkage and thus preserves same emergence profile. Impressions can be made on the same day
3. Relatively painless and sterilizes sulcus
4. Biostimulation
5. Can be used for implants

Disadvantages

1. CO_2 laser provides no tactile feedback, leading to risk of damage to junctional epithelium.[8]
2. Cost – expensive equipment.

Diode lasers

Advantages

1.Incision lines show disorganized fibroblast alignment. This reduces tissue shrinkage through scarring, which helps preserve gingival margin heights

2.Can be used for implants. [9]

Disadvantages

1.Invasive. So not ideal for anterior teeth.[10]

2.Cost

STAY - PUT

Stay-put impregnated combines the advantages of an impregnated retraction cord with the adaptability of a fine metal filament. Stay-put (impregnated) ensures quick haemostasis can be pre-shape. It is pliable and adaptable. Stay-put non impregnated is also available and can be impregnated individually as required. (Fig. 4)

Comprecord

Comprecord is an air texturised retraction cord which consists of polyester and polyamide yarns. The new technology of air texturising gives the cord a stable structure and a great total volume which makes Comprecord highly absorbent. Handling is facilitated by the pliable structure of the cord. Therefore Comprecord can be placed easily in the sulcus without fraying or shedding fibres. Comprecord is colour coded and available in sizes x fine, fine, medium and thick.

Summary

Gingival displacement is relatively simple and effective when dealing with healthy gingival tissues and when margins are properly placed a short distance into the sulcus. The most common technique used with gingival displacement is use of gingival retraction cords with a hemostatic medicament. Retraction cords of sufficient diameter should be used to provide adequate lateral displacement to create a mean sulcular width of 0.2mm.[11] Epinephrine containing retraction cords should be avoided.[12]

When very high concentrations or amounts of epinephrine are applied locally to lacerated tissue, epinephrine can be absorbed and cause an increase in the heart rate and blood pressure, which could be dangerous for patients with cardiovascular disease, hyperthyrodism, and to certain hypersensitive individuals. The application of high concentrations of epinephrine to large areas of lacerated or abraded gingival tissues should be avoided.[13]

Several techniques have proven to be relatively predictable, safe, and efficacious. The accuracy of the final prosthetic restorations is highly dependent on the temporary retraction of the sulcus and impression materials and techniques utilized.[14] A clean, dry and wide open sulcus with clear access to the prepared margins allows the making of a perfect impression.[15] In short, what the clinician should achieve is easy, fast, temporary and conservative retraction of the sulcus without the potentially traumatizing the tissue based on his selection and convenience.

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Virtual dental casts: an impending reality

* George P. John

Abstract

Background. The use of dental plaster casts is an integral part of any dental practice. They provide a useful tool for teaching purposes and are essential for orthodontics, orthognathic surgery, extensive restorative work, and prosthodontics. Three-dimensional digital imaging will have a major impact on clinical dentistry in the near future.

Clinical significance. Interactive three-dimensional images of the soft and hard tissues of dental patients or their positive replicas as is obtained in dental casts will provide adequate evidence to aid dentists in diagnosis, treatment planning / procedures, laboratory design / fabrication and outcome assessment. Technological advances in this realm will provide further opportunities to extend excellence in restorative dental care.

Conclusion. It is important to accurately reproduce surface detail to achieve optimal results in a dental laboratory. There is substantial to excellent agreement between assessment of tooth dimensions and arch relationships between plaster and virtual models.

Keywords. CAD/CAM, 3D Virtual Casts

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Introduction

Dental plaster casts are routinely employed in the assessment of tooth dimensions as well as intra- and inter-arch relationships during the course of treatment.[1] Accurate reproduction of the detail involved in dental tissues plays a key role in executing dental reconstruction within a predictable range of precision. In recent years, there has been considerable interest in alternatives to conventional plaster casts for clinical and laboratory requirements.[2]

The use of two-dimensional (2D) digital images is now widely available and relatively inexpensive[2]. Nevertheless, it is accepted that 2D digital images cannot compare with three-dimensional (3D) images.[3] This has led to increasing interest in 3D images or 'virtual' casts[4]. It has been reported that there was no significant difference in assessment of tooth dimensions obtained from plaster casts and their corresponding virtual models[1, 4].

Today, the evaluation of dentition through the use of 3D (three dimensional) surface models enables us to obtain more detailed information.[5,6] These 3D images must be accurate representations of the patients. If these accuracies are not met, the clinical result is compromised. Possibly the most stringent accuracy requirements are for interocclusal contacts, because most dental patients are sensitive to 0.020-mm changes in their occlusal anatomy.[7, 8] Creating computer images of dental tissues requires scanning the tissue surfaces or, more frequently, casts of the tissue surfaces. Scanner accuracy depends on the angle of the surface to the scanner.[9]

Dental Impressions

Essentially, a dental impression is a negative replica of an object which has to be filled with casting materials in order to achieve a positive replica. During recent decades, several moulding products have been developed for dentistry with the intent to enhance the cast accuracy, pliability, hardness and biological compatibility whilst also reducing the setting time.

Among the impression materials available, the A-silicone based, hydrophilic polyvinylsiloxanes are highly recommended. The user friendly putty soft consistency silicones offer an impression material of simplicity and high

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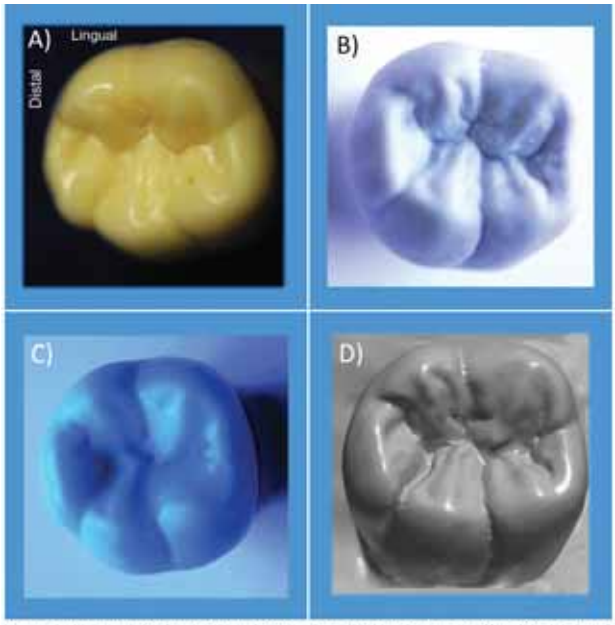

Figure 1. A) Lower Molar, B) Dental Stone Cast, C) Wax Pattern Replica, D) 3D virtual model obtained from the surface scanning of the dental stone cast.

viscosity. Due to low accuracy, this type of impression material is not suitable to replicate very fine details on a tooth surface. Use of a dual-phase technique with a low viscosity silicone increases the accuracy including the finer details of the tooth surface. Although this dual-phase technique generates good results, it requires experience and precision in the synchronization of the working time between the two phases. Care should be taken during impression making to avoid the use of latex gloves containing sulphur elementals,[10] or hand lotions,[11] which could react with the impression material causing complete polymerization inhibition.

A number of casts can be retrieved from these high quality impressions. The cast quality, however, only remains optimal for SEM observation until the fourth consecutive replica from the original impression, particularly at high SEM magnification levels.[12] It should be borne in mind that casts obtained from polyvinylsiloxane impressions can only achieve the expected results[3]. Other types of impression material may affect the accuracy of 3D image virtual casts[3].

Virtual Casts

With advances in computer and optical technology, the dental cast can be digitized through various scanning techniques.[13, 14] The 3D dental casts can be acquired easily through different kinds of intra or extra oral measurement methods including optical digitizers[13,14], CT (CBCT)[15, 16] and MRI[17]. CAD (Computer-Aided Design)/CAM (Computer-Aided Manufacturing) has been introduced to dentistry and has achieved great success in various clinical applications[18]. Dental restorations can be designed and manufactured much more easily compared with traditional complex and labour intensive process.

In order to satisfy the prerequisites of manufacturing the dental restorations and assessing the virtual dental behaviour, the teeth have to be independent of each other and keep the original shape of the real tooth. The accurate single-tooth shape restoration and extraction techniques for the 3D dental model play a vital role in CAD/CAM dentistry system.

The reconstruction of 3D virtual casts is achieved through the use of a surface scanning system. One of the major problems that occur during the surface scanning of teeth directly is the reflection and transparency of the enamel. Both, white-light and laser surface scanning systems are not able to accurately measure the surface information directly from the original tooth crown. To solve this problem it is possible to coat the dental surface with talcum powder or ammonium chloride fog lending the surface an opaque appearance. However, the small particles of these substances can fill pits, grooves and striations of the dental surface, which may be difficult to remove.

The best solution is to employ particular casting materials specifically suited for surface scanning. Special dental stones possessing non-reflective properties are available which have been optimized for light scanning. The resolution of the dental stone cast is suitable for digital 3D surface models with increased quality for morphological analysis.

Common dental methods of duplicating dental tissues can produce computer models with accuracies equivalent to the measured occlusal sensitivity of patients. Thus, it may be possible to locate occlusal contacts as accurately on computer models as is done in the clinic.[19] The significance of this is that three-dimensional models provide a permanent, quantitative record that can be viewed at any time in the future. Comparing sequential three-dimensional models could identify differences which could be used to quantify the dental health of the patient and identify problem areas.[19]

Currently, 3Shape's Dental System™ offers a unique solution that embraces the total professional scope of modern dentistry. Dental System™ brings accurate 3D scanning, intuitive CAD modeling, efficient order management and reliable communication tools to provide streamlined workflow that increases productivity. 3Shape Dental System is a unique combination of 3Shape's expertise in 3D scanning and 3D CAD software for creating accurate, customized dental restorations with high esthetics. 3Shape Dental System™ is widely known throughout the dental industry as the most powerful CAD/CAM design system in the world.

Conclusion

It is important to accurately reproduce surface detail to achieve optimal results in a dental laboratory. As technology provides us newer opportunities to deliver excellent outcomes, it would be prudent to accept innovation with a sense of caution. There is substantial to excellent agreement between assessment of tooth dimensions and arch relationships between plaster and virtual models. Finally, the quality of the impressions and casts not only depends on the type of material used, but is to a large extent also a matter of practice.

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Natal and neonatal teeth

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Abstract

The terms natal and neonatal teeth have been proposed by Massler and Savara in 1950s. Though its prevalence is not so common but requires attention whenever it is presented in an infant. The purpose of this article is to review natal and neonatal teeth. We also discuss a case report of patient with neonatal teeth.

Key words: natal tooth, neonatal tooth, congenital teeth, riga fede disease

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Introduction

Eruption of primary teeth in oral cavity starts at 6 months of child's life.[1] But, rarely one or more teeth can be present at birth and can be termed as: Congenital teeth, fetal teeth, predeciduous teeth, precocious dentition, dentitia precox, dens connatalis.[2,3]

The occurrence of natal and/or neonatal teeth is a rare anomaly, which for centuries has been associated with diverse superstitions among many different ethnic groups.[3] Gates[4] has noted that prematurely erupted teeth were known to the Greeks and Romans. Allwright[5] states that if a Chinese baby is born with teeth, the family anticipates bad luck; some families are so superstitious that the afflicted child may be deprived of parental love.

Titus Livius, in 59 B.C., considered natal teeth to be a prediction of disastrous events. Caius Plinius Secundus (the Elder), in 23 B.C., believed that a splendid future awaited male infants with natal teeth, whereas the same phenomenon was a bad omen for girls.[5,6,7,8]

Massler & Savara[9] in 1950 defined natal teeth as those present at the time of birth and neonatal teeth as those erupt within 30 days of life. The teeth that do not come under these categories and erupt within 30-75 days after birth i.e. earlier than their normal eruption time are called as Early Infancy teeth.[10]

Fauconnier and Gerardy[11] (1953) presented an excellent discussion of the difference between "early eruption" and "premature eruption" in which they also proposed an etiology of natal and neonatal teeth. They considered "early eruption" to be that occurring because of changes in the endocrine system, whereas "premature eruption" would be a clearly pathological phenomenon with the formation of an incomplete rootless tooth that would exfoliate within a short period of time.

According to Costa[12] (1952), early eruption in infants of a few days of age has been confused with a special pathological process described by Capdepont under the name of expulsive folliculitis. According to this author, infection of the follicle affects the gubernaculum dentis persistente, causing phlegmasia and turgidity of follicular tissues. This infection may be caused by an exogenous factor brought about by traumatic injury, such as the introduction of a finger into the baby's mouth by the obstetrician during the Moriceau maneuver. The distinction between true early eruption and expulsive folliculitis has been established on the basis of the following characteristics: 1) in expulsive folliculitis, rapid tooth eruption (2 to 3 mm in one day) was noted, together with extreme mobility, and turgidity and inflammation of the gingiva in the eruption zone; 2) in true early eruption, solidity and normal eruptive path of the tooth were observed, with integrity of the gingival mucosa.

Incidence and Prevalence: The incidence of natal and neonatal teeth has shown varying results in different studies. In a review article by Zhu and King[13], it was reported, as per data collected from 10 studies starting from 1876 to 1991, that the incidence of both natal and neonatal teeth ranged from 1:716 to 1:30,000. The most common natal and neonatal teeth are the mandibular central incisors. In most cases, these teeth represent the true primary teeth and are not supernumerary teeth.[14]

Natal teeth cases have been reported with hereditary pattern. Bodenhoff & Gorlin reported a familial association in 14.5% of cases.[15] Findings were obtained in a study by Kates, Needleman & Holmes which found a positive family history in 7 out of 38 cases of natal and neonatal teeth.[16]

The teeth most commonly seen are the lower primary central incisors (85%), followed by maxillary incisors (11%), mandibular canines or molars (1%). On morphology, natal and neonatal teeth may have normal size and shape or may be conical and opaque yellow brown in color.[17]

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Etiopathogenesis: Etiology of natal and neonatal teeth is still unknown and is debatable. The main factors are: 1) Inheritance pattern: Natal and neonatal teeth are autosomal dominant trait. Many syndromes have been associated with them: Chondroectodermal dysplasia or Ellis-van Creveld syndrome,[18] oculo-mandibulo-dyscephaly with hypotrichosis or Hallermann-Streiff syndrome,[19,20] pachyonychia congenita or Jadassohn-Lewandowski syndrome,[21] Craniofacial dysostosis syndrome/ Crouzon syndrome,[20] Steatocystoma multiplex,[22] Soto's syndrome,[20] Pierre robin syndrome,[23] Adrenogenital syndrome,[10] Epidermolysis bullosa simplex,[24] Wiedemann-Rautenstrauch syndrome,[25] Meckel-Gruber syndrome,[26] Clouston's syndrome,[27] Cutis gyratum and acanthosis nigricans.[28] 2) Endocrine disturbances like excessive secretion of pituitary, thyroid or gonads[3] can be the cause of neonatal tooth. This is termed as early eruption.[11] 3) Jasmin and Clergeau-Guerithault reported that the eruption of natal and neonatal teeth could be dependent on osteoblastic activity within the area of tooth-germ.[10,29] 4) Infection eg. Congenital syphilis appears to have varying effect. In some cases eruption occurs early while in others it causes retardation in eruption.[29] 5)Nutritional deficiency like hypovitaminosis (which in turn is caused by poor maternal health, endocrinal disturbances, febrile episodes and congenital syphilis) have also been reported to be the cause of natal/neonatal tooth.[29,30] 6) Superficial position of tooth germ above the alveolar bone results in early eruption of deciduous dentition. Halls suggested that this is a result of hereditary influences.[3] 7) Febrile status as in fever, exanthemata during pregnancy tends to accelerate eruption.[3] 8) Environmental factors like exposure to polychlorinated biphenyls (PCBs) and dibenzofurans seem to increase the incidence of natal teeth. Gladen et al. reported that 13 (10%) of 128 infants born to mothers who were heavily exposed to polychlorinated biphenyls and dibenzofurans during the Yusheng environmental accident in Taiwan had natal teeth.[31] However, in a study by Alaluusua et.al., [31] no association was found between the milk levels of PCB and dibenzofuran compounds and the occurrence of natal and neonatal teeth, indicating that the prevailing levels of PCBs and dibenzofurans are likely to be below the threshold to cause perinatal eruption of teeth. The most acceptable theory is superficial localization of dental follicles probably related to a hereditary factor.[32,33]

Classification

1. Spouge and Feasby[34] in 1966 have suggested that clinically natal and neonatal teeth can be further classified according to their degree of maturity.

a) Mature: When the natal and neonatal teeth are fully developed and have relatively good prognosis for maintenance; b) Immature: When the natal and neonatal teeth are developmentally defective and have a poor prognosis for retention.

Fig. 1: Intraoral view of a neonate showing neonatal teeth

The overwhelming majority are normal teeth that have erupted prematurely (to 95%) and are less commonly supernumerary (5%).

2. Hebling[35] (1997) classified natal and neonatal teeth into 4 clinical categories:

a. Shell shaped crown poorly fixed to the alveolus by gingival tissue and absence of root; b. Solid crown poorly fixed to the alveolus by gingival tissue and little or no root; c. Eruption of incisal margin of the crown through the gingival tissues; d. Edema of gingival tissues with an unerupted but palpable tooth.

Case report

A male child was brought to KVG Dental College & Hospital, with a large ulcerated area on the ventral surface of the tongue. The child was experiencing difficulty in breast feeding. There was a clear association of the ulcer with a partially erupted tooth but when child's parents were explained the advantage of retaining these teeth they agreed to save them.

Clinical Features: Intraoral examination revealed the presence of well formed teeth with mamelons, on the lower alveolar ridge, in the region of the primary central incisors (Fig. 1). The teeth were similar to primary central incisors in all aspects. The opposing ridge mucosa was hyperplastic and presented slight erythema but no bleeding.

Radiographically, the erupted teeth were sound with still developing roots.

Since the parents agreed to the proposed treatment plan, selective grinding of the neonatal teeth was done to prevent trauma to the upper alveolar ridge. The patient was kept under observation henceforth. This not only rendered patient the symptomatic relief but also prevented the unnecessary extraction of primary central incisors thus restoring the parents' confidence. For the parents, uneventful retention of neonatal tooth curbed the taboos associated with it.

Discussion

According to Bigeard et. al,[23] 1966 the dimensions of the crown of these teeth are smaller than those of the primary teeth under the normal conditions.

Therefore, it is essential for a dental surgeon to diagnose the case of natal and neonatal teeth correctly whether it belongs to the natural dentition or supernumerary teeth.

It is important to maintain the natal and neonatal teeth if they belong to the normal dentition since the premature loss of primary dentition may cause a loss of arch with subsequent malocclusion in the permanent dentition.

The decision whether to maintain the tooth or not depends on the following factors:

1. The degree of mobility: Excessively mobile teeth are usually extracted due to the risk of exfoliation and subsequent swallowing or inhalation. A review of literature, however reveals that there are no reported cases of aspiration of natal or neonatal teeth. Hooley suggests that 67% of the natal and neonatal teeth will exfoliate prematurely, due to inadequate root formation and mobility if left in the mouth. Natal teeth are only slightly mobile often stabilize shortly after eruption.

2. Whether the tooth is part of the natural dentition: If the tooth is supernumerary then extraction is the treatment of choice.[11]

3. Interference with the breast feeding

4. Possibility of traumatic injury: in a study conducted by Massler and Savara it was reported that trauma to the lip or ventral surface of the tongue is a complication of natal and neonatal teeth, referred to as Riga-fede syndrome. They also suggested that ulceration is a consequence of the fact that the tongue in infants lies between the alveolar ridges.[3]

This case report described a patient with neonatal teeth which on clinical examination were firm with developing roots. Hence the decision was to save the teeth rather than being extracted.

Conclusion

Natal and neonatal teeth can be eliminated from the list of dental taboos by spreading the awareness among the population. Proper treatment planning and its meticulous execution will render relief to the patients from the associated problems and provide confidence and motivation to their parents.

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Morphological variation in decidious mandibular first molar between two racial group's

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Abstract

The human dentition is not only composed of various teeth, but every tooth has a different morphology. The morphology of human teeth has been widely studied from several point of view. Variability in tooth morphology is an important consideration in the attainment of optimal occlusion of teeth.

The primary mandibular 1st molar is morphologically unique among the primary molar's & readily distinguishable from other teeth in primary & permanent dentition. Also, it has been proved that the size also varies in different racial groups.

The purpose of the study was to investigate between two racial groups- Hindu's (R1) & Muslim's (R2) the morphological variation of deciduous mandibular 1st molar from occlusal aspect.

Keywords: decidious mandibular first molar, morphological variation in decidious molar, occlusal variation

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Introduction

The human dentition is not only composed of various teeth, but every tooth has a different morphology. The morphology of human teeth has been widely studied from several point of view. Variability in tooth morphology is an important consideration in the attainment of optimal occlusion of teeth.[1]

The primary mandibular first molar is morphologically unique among the primary molar's & readily distinguishable from other teeth in primary & permanent dentition.[2]

Also, it has been proved that the size also varies in different racial groups.[3]

Aim & objective

To investigate between two racial groups- Hindu's & Muslim's the morphological variation of deciduous mandibular first molar from occlusal aspect as the number & the position of cusps & the mesiodistal & buccolingual width of crown has important restorative implication, as more often while placing the stainless steel crown on this tooth we usually have problem.

Materials & method

A sample size of 15 Hindu's (R1) & 15 Muslim's (R2) subjects of both sexes of age group between 4 to 6 yrs were selected.

Selection Criteria for primary mandibular first molar :

- No loss of tooth material mesiodistally & buccolingually as result of caries, fracture etc.
- Fully erupted teeth were taken
- No restoration of any kind present
- No congenital defect or deformed teeth
- Systemically healthy
- No history of inter caste marriage

Then the alginate impression of complete mandibular arch for all the subjects were taken & die stone casts were prepared.

Standardized photographs of the stone casts were taken using digital camera (5x zoom). The camera was kept at a constant distance form the occlusal plane. Then on the occlusal view photographs of the primary mandibular first molar both right & left side the cusps were marked. (Fig. 1 & 2)

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Fig. 1


Fig. 2

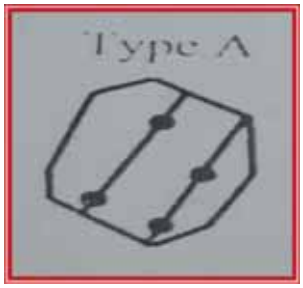

Fig. 3

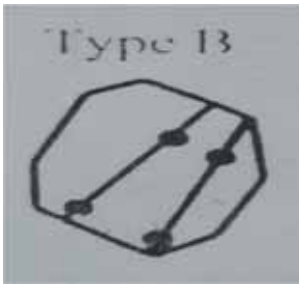

Fig. 4

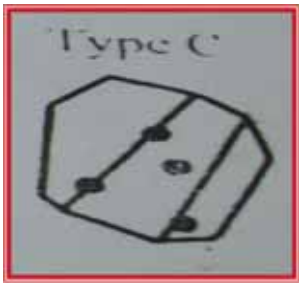

Fig. 5

Fig. 6

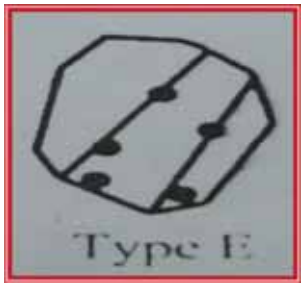

Fig. 7

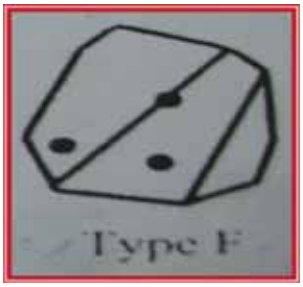

Fig. 8

According to the study conducted by Hung- Huey Tsai in 2001 gave 6 types of cusp alignments for primary mandibular first molar-[4]

– Type A: Two buccal cusps parallel to two lingual cusps. The transverse ridge is poorly developed.(Fig.3)

– Type B: Two mesial cusps parallel to two distal cusps. Distance between the two buccal cusps & the two lingual cusps are approximately equal. The transverse ridge is horizontal. (Fig.4)

– Type C: Two buccal & two lingual cusps with distobuccal convergence of the mesiolingual cusp. The transverse ridge is oblique. (Fig.5)

– Type D: Two buccal cusps & two lingual cusps with fifth small cusp on the lingual side of the mesiolingual cusp. (Fig.6)

– Type E: Two buccal cusps, two lingual cusps, & one distal cusp. (Fig.7)

– Type F: Two buccal cusps & one lingual cusp. (Fig.8)

The mesiodistal & buccolingual width of deciduous mandibular first molar both right & left side for both groups were measured using Vernier Caliper.

Results

Result analysis: "t" test

Does not show any statistical significance in the mesiodistal width of both right & left side for both the groups. Similarly no significance is seen in the buccolingual width of both right & left side for both the groups. (Table I)

But, in cuspal pattern Type D is the maximum for R1 group (86%) whereas Type A (56%) is maximum for R2 group. (Table II)

Discussion

It is said that the size & shape of crown of teeth appear to be intact moderately strong genetic control.[3] Ratio of crown mesiodistal and buccolingual provide a general idea of shape of tooth, but a variety of shapes result within the same ratio shape of tooth. The outline of primary mandibular first molar from occlusal aspect rhomboid, oval, rectangular or quadrilateral.[5] According to the results, not much statistical significance is seen in Hindu group in the mesiodistal width as well as the buccolingual width of primary mandibular first molar both right & left side when compared to the mesiodistal & buccolingual width of the preformed stainless crown available commercially.[6] Therefore, size D4 is the best fit for this group.

But a difference of few mm is seen for Muslim group in the mesiodistal width & buccolingual width & hence, we need to be more accurate while selecting the crown espically buccolingually for this group & require more countering for a good fit of crown. Size D3 & D4 are the preferred crown size which can be used for this group.

Table I- *Mean + SD of M-D width & B-L width according to side & caste*

Caste	M-D Width(mm)		B-L Width(mm)	
	Right	Left	Right	Left
Hindu	7.26+0.58	7.22+0.59	4.45+ 0.50	4.46+0.50
Muslim	7.41+0.56	7.44+0.56	4.51+ 0.23	4.57+0.26
P-Value	>.05	>.05	>.05	> .05
Significance	**NS**	**NS**	**NS**	**NS**

Table II - *Distribution of type of Cusp according to side*

Cusp Type	Hindu(%)		Muslim(%)	
	Right	Left	Right	Left
A	13.33	13.33	40.00	53.30
B	0.00	0.00	26.67	13.33
C	0.00	0.00	0.00	0.00
D	86.67	86.67	20.00	20.00
E	0.00	0.00	13.33	6.67
F	0.00	0.00	0.00	6.67
Total	100.00	100.00	100.00	100.00

These morphological variations for deciduous mandibular first molar can be considered as standard norms for the Muslim's & Hindu's with a bigger sample size.

Lastly, significant cuspal variation is seen between both the groups. The maximum of Type D- 86% is seen in Hindu group & Type A – 53% is seen for Muslim group.

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A study to assess the oral health status and treatment needs of fishermen population in coastal region of Kerala

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Abstract

Objectives:

- To assess the oral health status and treatment needs of fishermen population in coastal region of Kerala.
- To suggest possible measures to improve their present oral health status.

Materials and methods: The study was conducted in Anchuthengu coastal village of Trivandrum district of Kerala was selected by multistage sampling method. Prior permission was obtained from secretary of fishermen co-operative society. All the available 151 fishermen were examined with their consent.

Information regarding demographic details, dietary habits, oral hygiene habits, personal habits and past dental visits was obtained by using pre-designed questionnaire.

The oral health status was recorded on the WHO oral health assessment form 1991 (modified) and the examination was carried out under natural light by using mouth mirrors and CPI probe.

Results: Significant observation was that (25.1%) of the fishermen had oral mucosal lesions. The prevalence of dental caries among fishermen (47%) The different stage of periodontal disease among the fishermen was 86.8% and 22.5% of the fishermen had loss of periodontal attachment. The treatment needs of fishermen were extraction 26.5%, filling 16.6%, pulp care 13.2%, prosthetic upper 26.5%, and prosthetic lower 33.7%.

Conclusion: Oral health status of fishermen was relatively poor with high caries prevalence (47%) poor periodontal health (86.8%) and high prevalence of oral mucosal lesions (25.1%). High prevalence of dental caries may be due do their high sweet consumption (70.9%) and poor oral hygiene practice (11.3%). High gutka (19.2%) and pan chewing habits (16%) might be the reason for higher oral mucosal lesions among fishermen. Treatment needs like extractions 26.5%, filling 16.6% and prosthetic rehabilitation were required for fishermen.

Key words: Oral health status; Dental caries; DMFT; CPI; Treatment needs; Fishermen; Fishing; Coastal region; Kerala

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Introduction

Health implies to the relative absence of pain and discomfort and a continuous adaptation and adjustment to the environment to ensure optimal function.[1] Health is multi-factorial, the factors which influence health lie both within the individual and externally in the society in which he or she lives. It is a truism to say that what man is and to what disease he may fall victim depends on a combination of two sets of factors his genetic factors and the environmental factors to which he exposed.[1]

Each disease has its unique natural history, which is not necessarily the same in all individuals Disease results from a complex interaction between man, agent and the environment.[1] Disease arises when there is maladjustment of the individual with his environment.[2]

The health of workers in a large measure will also be influenced by conditions prevailing in their work place.[1]

The occupation of fishing remains as hazardous as before[3] life at sea is one of stress: often difficult physical conditions, dislocation, isolation and less than ideal personal habits.[4] Fisherman have prolonged hours of continuous work, which are found to be correlated with high cigarette and alcohol consumption.[5] Diet is lacking in fruits and vegetables, and meals are eaten at very erratic intervals.[6]

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Table I *Distribution of study population*

Fishermen	
No	%
151	51.5

Table II *Distribution of study population according to age groups*

Age in years	Fishermen	
	No	%
Below 24	03	2
25-34	35	23.2
35-44	80	53
45-54	28	18.5
55 & above	05	3.3
Total	**151**	**100**

Table III *Distribution of study population according to mean age*

Mean Age	Fishermen
Number	151.00
Mean Age	39.59
Std. Deviation	8.08
Minimum	20.00
Maximum	60.00

Table IV *Distribution of study population according to sweet consumption*

Sweet consumption	Fishermen	
	No	%
Bakery made		
No	44	29.1
Once a month	34	22.5
Twice a month	68	45
Occasionally	05	3.3
Total	**151**	**100**
Home made		
No	44	29.1
Once a month	76	50.3
Twice a month	26	17.2
Occasionally	05	3.3
Total	**151**	**100**

Fishermen are prone to excess ultraviolet radiation due to constant exposure to sun.[7] Statistical studies in the past have shown that fishermen are prone to develop skin and lip cancer.[8]

Previous studies have shown that subjective symptoms from the musculo-skeletal system are common among fishermen.[9] Crepitations in the shoulder tend to be more common among the fishermen. This indicates that heavy dynamic work and prolonged static work.[10] Osteoarthritis of the knee, among them may result from working and living in the vertical environment of a moving ship.[11]

The high prevalence of the cardiovascular risk factors was to be found related to ischemic heart disease and cerebrovascular illness. This may be influenced by poor eating habits, poor health awareness and other social and environmental factors which are common to seamen.[12] the high incidence of hypertension may be related to a higher sodium intake, accompanying high consumption of salted fish or to the higher prevalence of tobacco smoking.[13]

Oral diseases seem to be the most common health problem of seafarers world-wide. Seafaring as an occupation may create a risk for the dental health during long sea voyages, the access of seamen to dental services is very limited and making regular check ups and treatment of caries is difficult.[14] Scurvy was once the number one killer of seafarers on long voyages.[15] Seamen have poor oral health when compared with that of general population.[16]

Despite the dangerous nature of the fishing occupation, very little research has been conducted on fishermen's health and safety.[17]

Fishing is one such hazardous occupation, which involves irregular diet, stress, alcoholism, tobacco and pernicious habits. Fishermen have lower socioeconomic status and their illiteracy adds to their poor oral hygiene, which may influence general and oral health.

The studies in India, related to oral health status and treatment needs of fishermen population are scanty.

Table V *Distribution of study population according to personal habits*

Personal habits	Fishermen	
	No	%
Smoking	135	89.4
Alcohol	129	85.4
Gutka	29	19.2
Pan	25	16
Tobacco	08	5.3

Table VII *Distribution of study population according to dental visit*

Dental visit	Fishermen	
	No	%
Dental visit		
No	108	71.5
Yes	43	28.5
Total	**151**	**100**
Reason for visit		
Not applicable	108	71.5
Extraction	18	11.9
RPD	13	8.6
Filling	09	6
Others	03	2
Total	**151**	**100**

Hence an attempt has been made to assess the oral health status and treatment needs of fishermen population in coastal region of Kerala.

Objectives

• To assess the oral health status and treatment needs of fishermen population in coastal region of Kerala.

• To suggest possible measures to improve their present oral health status.

Methodology

The present study was carried out to assess the oral health status and treatment needs of fishermen population in coastal regions of Kerala. Ethical clearance was obtained prior to the study. The study

Table VI *Distribution of study population according to oral hygiene practices*

Oral hygiene practices	Fishermen	
	No	%
Cleaning		
Tooth brush	134	88.7
Finger	07	4.6
Both	10	6.6
Total	**151**	**100**
Material used		
Tooth paste	114	75.5
Tooth powder	20	13.2
Both	10	6.6
Others	07	4.6
Total	**151**	**100**

Table VIII *Distribution of study population according to oral mucosal lesions*

Oral mucosal lesions	Fishermen	
	No	%
No	113	74.9
Leukoplakia	04	2.6
Lichen planus	00	00
Ulceration	11	7.3
Candidiasis	04	2.6
OSMF	06	4
Smokers palate	13	8.6
Total	**151**	**100**

population was selected by multistage sampling method.

The total number of coastal districts of Kerala was obtained from the geography department of Mysore University. Out of 10 coastal districts, Trivandrum coastal district was randomly selected, from that district out of 04 taluks Trivandrum coastal taluk Randomly selected, from that taluk out of 28 block panchayath Chirayinkeezh coastal block panchayath Randomly selected, from that block panchayath out of 07 Graama

Table IX *Distribution of study population according to periodontal status*

CPI	Fishermen	
	No	%
Healthy	20	13.2
Bleeding	17	11.3
Calculus	80	53
4-5 mm	25	16.6
6mm	07	4.6
Excluded	02	1.3
Total	**151**	**100**

Table X *Distribution of study population according to LOA scores*

LOA	Fishermen	
	No	%
0-3 mm	117	77.5
4-5 mm	25	16.6
6-8 mm	02	1.3
9-11mm	03	2
12mm+	02	1.3
Excluded	02	1.3
Total	**151**	**100**

Table XI *Distribution of study population according to decayed, missing, filled teeth*

Dentition Status	Fishermen	
	No	%
Decayed Teeth		
No	80	53
Yes	71	47
Total	**151**	**100**
Missing Teeth		
No	86	57
Yes	65	43
Total	**151**	**100**
Filled Teeth		
No	142	94
Yes	09	6
Total	**151**	**100**

Table XII *Distribution of study population according to mean decayed, missing, filled teeth*

Mean Dentition Status	Fishermen	
	Mean	S.D
Decayed Teeth	2.21	2.90
Missing Teeth	1.24	2.03
Filled Teeth	0.07	0.24
DMFT	3.52	3.77

Panchayath, Anchuthengu coastal Gramma Panchayath Randomly selected for the present study. The survey was done in the month of November 2005

The permission to carry out the study and the information regarding the number of fishermen was obtained from the secretary of fishermen co-operative societies.

A schedule for the examination was prepared with a help of secretary of fishermen co-operative societies and they in turn informed the study population about the study as well as the date, time, and the place of examination.

The study involved completion of a predesigned questionnaire that collected information about age, sex, education levels, occupation, monthly income, diet, sweet consumption, the fishing frequency and duration.

The questionnaire also included multiple option questions designed to collect the information regarding oral hygiene practices, personal habits, visit to dentist, and reason for visit

The examination was conducted by a single examiner who was trained and calibrated in the Department of Community Dentistry, JSS Dental College and Hospital, Mysore.

A group of 10 subjects were examined using mouth mirror and CPI probe on successive days in the Community Dentistry Department. The data on the oral health status was entered on a WHO Proforma (1997), then a group of 20 subjects with varying levels of oral diseases were examined on two successive days and the results were compared to know the diagnostic variability. Agreement for assessment was 90%.

The examination was done under natural light, using mouth mirror and CPI probe, with the study subject

Table XIII *Distribution of study population according to prosthetic status*

Prosthetic status	Fishermen	
	No	%
Upper		
No	145	96.0
Yes	06	4
Total	**151**	**100**
Lower		
No	146	96.7
Yes	05	3.3
Total	**151**	**100**

Table XIV *Distribution of study population according to prosthetic need*

Prosthetic Need	Fishermen	
	No	%
Upper		
No	111	73.5
Yes	40	26.5
Total	**151**	**100**
Lower		
No	100	66.3
Yes	51	33.7
Total	**151**	**100**

Table XV *Distribution of study population according to treatment needs*

Treatment needs	Fishermen	
	No	%
Extraction		
No	111	73.5
Yes	40	26.5
Total	**151**	**100**
Filling		
No	126	83.4
Yes	25	16.6
Total	**151**	**100**
Rct		
No	131	86.8
Yes	20	13.2
Total	**151**	**100**

seated on an ordinary chair. All the instruments were sterilized by cold sterilization. The data on oral health status of the subjects was recorded on modified WHO proforma (1997).

After the completion of oral examination, the examiner himself filled the questionnaire by asking the subjects questions in the questionnaire to ensure uniformity in data collection and to avoid misinterpretation of the questions by the study subjects.

All the available fishermen of Anchuthengu coastal village were examined during the period of the study.

Thus the study population comprised of 151 fishermen and ranging in age from 20 years to 62 years.

Results

1. Study population

A total of 151 fishermen (51.5%) were examined. The distribution of study population is presented in Table I

2. Study population with their age groups

A total of 151 Study population were examined, the results reveal that, between 35 to 44 years there were 53% of the fishermen. The age wise distribution is presented in Table II

3. Study population and their Mean age

The mean ages of fishermen along with S.D values were 39.59 ± 8.08, these trends are shown in Table III

4. Sweet consumption among the study population

A significant association was observed between sweet consumption and fishermen about 70.9% of the fishermen had the habit of sweet consumption (Table IV).

5. Study population and their Personal habits

Among study population 89.4% of fishermen were found to have maximum prevalence of smoking, 85.4% Alcohol consumption, 19.2% gutka chewing, 16% pan chewing and 5.3% of Tobacco habit. These trends are shown in Table V

6. Study population and their oral hygiene practices

A. Study population and their cleaning habits

Fishermen about 88.7% of them use Toothbrush, 4.6%, of them use finger and 6.6%, of them use both Toothbrush and finger. (Table VI).

B. Study population and material used for their oral hygiene practices

Fishermen about 75.5%, of them use Toothpaste and 13.2%, of them use tooth powder and 6.6%, of them use both toothbrush and tooth powder and 4.6%, of them use other materials. (Table VI).

7. Study populations and their Dental visit

28.5% of fishermen were found to visit a dentist maximum (Table VII).

7a. Study population and their reasons for their visit

Among the Fishermen, the most particular reason for visit was extraction, which constituted as much as 11.9% which was followed by 8.6% for replacement of the teeth, 6 % for fillings and lastly 2 % for other reasons (Table 7).

8. Oral mucosal lesions among study population

The overall prevalence of oral mucosal lesion among fishermen was 25.1% wherein Smoker's palate 8.6%, Ulceration 7.3%, OSMF 4%, and Candidiasis 2.6%, Leukoplakia 2.6%. (Table VIII).

9. Periodontal status among study population

The prevalence of periodontal disease more among the fishemen (86.8%), we could find healthy sextants 13.2%. Bleeding scores 11.3%, Calculus, segments 53%, 4-5 mm scores 16.6%, and 6 mm scores of 4.6%, (Table IX)

10. LOA Scores among study population

The prevalence of Loss of attachment more among the fishermen (22.5%), (Table X)

11. Study population and decayed, missing, filled teeth

The overall prevalence of dental caries among study population revealed that fishermen had high prevalence of dental caries 47% and 43% of the sample had missing teeth. Only about 6% of the sample had filled teeth as against about 94% of the sample did not have filled teeth. (Table XI).

12. Study population and their mean decayed, missing, filled teeth

Overall fishermen had 2.21 mean decayed teeth, the mean missing teeth 1.52, the mean filled teeth were 0.07 (Table XII).

Mean DMFT

The respective mean DMFT values for fishermen were 3.52 (Table XII).

13. Distribution of prosthetic status among the study population

Among total study population only 4% of them had prosthesis of upper arch and only 3.3% of them had prosthesis of lower arch (Table XIII).

14. Distribution of the study population and their prosthetic need

The detailed analysis for fishermen revealed that 26.5% of them had prosthetic need of upper arch and 33.7% of them need lower arch (Table XIV).

15. Distribution of the study population and their treatment needs

Among the total study population the fishermen had treatment need for extraction 26.5%, filling 16.6% and root canal treatment 13.2% (Table XV).

Discussion

Each disease has its unique natural history, which is not necessarily the same in all individuals Disease result from a complex interaction between man, an agent and the environment.[1] Disease arises when there is maladjustment of the individual with his environment.[2]

Fishing is one such hazardous occupation which involves irregular diet, stress, alcoholism, tobacco and pernicious habits. Fishermen have lower socioeconomic status and their illiteracy adds to their poor oral hygiene, which may influence general and oral health.

The present study was to assess the oral health status and treatment needs of fishermen population in coastal regions of Kerala, a modified WHO proforma (1997) and a questionnaire was used.

A total of 151 study population were examined, Table I).

The overall mean age and S.D for fishermen 39.59 ± 8.08 (Table III).

Dental caries

In the present study, the caries prevalence of dental caries was (47%) high among the fishermen (Table 11). This could be possibly due to the sweet consumption, poor oral hygiene practices and Dental visits. In the present study in fishermen group had higher sweet consumption (70.9%), poor brushing habits (11.3%) and lower frequency of dental visits (28.5%) (Table 4, 6 and 7). The previous study stated that the poor dietary habits including high consumption of sugar containing products were associated with dental caries.[18] Another study stated that the negative life style was more common in the lower social class

with combined lifestyle variable, frequency of tooth brushing and frequency of dental visits were associated with dental caries.[19]

Mean decayed missing filled teeth

The mean decayed component among fishermen group was 2.21, (Table XII). The mean decayed teeth were more in fishermen. The reason may be due to higher sweet consumption (70.9%) and poor brushing habits (11.3%) among fishermen (Table IV and VI).

The mean missing component among fishermen was 1.24, the mean filled teeth component in fishermen group was 0.07, (Table XII). This was because of the less dental visit 6 % (Table VII)

The mean DMFT was 3.52 among fishermen (Table XII). The reason may be due to higher sweet consumption (70.9%) and poor brushing habits (11.3%) among fishermen (Table IV and VI).

Periodontal status

In the present study the prevalence of periodontal disease was higher among the fishermen (86.8%) (Table IX) In the present study fishermen group showed bleeding gums (11.3%), calculus (53%), pocket 4-5 mm (16.6%) and 6mm (4.6%) (Table IX).

It was observed that higher percentage of calculus in fishermen. This differences may be due to higher prevalence of smoking (89.4%), alcohol (85.4%), gutka chewing (19.2%), pan chewing (16%), tobacco (5.3%) and also poor oral hygiene (11.3%) among fishermen (Table V and VI).

Loss of attachment

The percentage of fishermen with loss of attachment due to periodontal diseases was higher (22.5%) (Table X)

This difference may be due to higher prevalence of smoking (89.4%), alcohol (85.4%), gutka chewing (19.2%), pan chewing (16%), tobacco (5.3%) and also poor oral hygiene (11.3%) among fishermen (Table V and VI).

This finding were in conformity with the earlier study which concludes periodontal pocketing increased with diminishing tooth brushing frequency and an unhealthier life style.[20]

An another study stated that the habit of smoking is a significant risk factor for probing attachment loss.[21]

Oral mucosal lesions

In the present study higher percentage of oral mucosal lesions observed in fishermen (25.1%) (Table VIII) which may be due to higher prevalence of smoking (89.4%), alcohol (85.4%), gutka chewing (19.2%), pan chewing (16%), tobacco (5.3%) and also poor oral hygiene (11.3%) among fishermen (Table V and VI)

This is in agreement with the previous study conducted on the use of tobacco and betal quid and they observed that the use of pan may render people susceptible to oral mucosal changes.[22]

The prevalence of leukoplakia among fishermen (2.6%) was more. (Table VIII).

This is in agreement with the previous study which reported that the prevalence of leukoplakic lesions was highest (23.5/1000) among people with mixed habits.[23]

Prosthetic status

The prosthetic status among the fishermen upper arch (4%) and lower arch (3.3%) (Table XIII). This may be due to less percentage of fishermen (8.6%) who visited the dentist for replacement of teeth (Table VII).

Treatment needs

The percentage of fishermen needing extractions was 26.5% this could be due to more extensive lesions which are not suitable for restorations among the fishermen (Table XV).16.6% of the fishermen needed fillings. Root canal therapy for fishermen was 13.2% (Table XV).

Prosthetic need

In the present study the prosthetic need for upper and lower arches among fishermen was 26.5% and 33.7% (Table XIV). The difference may be due to less percentage of fishermen group who visited the dentist for prosthetic rehabilitation (8.6%) (Table VII).

An earlier study concluded that low socio-economic subjects were in greater need of dentures.[18]

In the present study almost all the study subjects needed oral prophylaxis.

Conclusion

1. Oral health status of fishermen population was relatively poor with high caries prevalence and poor periodontal health.

2. Hazardous occupations, unscheduled working hours, job related stress, pernicious habits like alcoholism, smoking, pan, gutka and tobacco. Irregular diet due to lack of availability of home cooked food, lower awareness levels and socioeconomic status seemed to influence the oral health status of the fishermen population.

3. Extensive unmet dental treatment needs which mainly included extractions, RCT, fillings, and prosthetic rehabilitation were required for fishermen population.

4. Almost all the study population required oral prophylaxis.

Suggestions and Recommendations

Oral diseases seem to be most common single health problem of fishermen population worldwide.

Despite routine and periodic dental examinations, oral diseases cannot to be totally eliminated.

Oral health education should be given to the fishermen population about the oral health problems and also ill effects of pernicious habits like alcoholism, smoking, and chewing habits by the available public media such as FM Radio, and advertisements because of their isolation from the shore.

The necessary advice on dental care could be propagated by special pamphlets issued by social welfare organization of fishermen population and the fishermen co-operative societies. Also their periodicals could be used to explain to fishermen in clear simple terms the cause, symptoms and consequences of oral diseases any such publications could contains recommendations as to the prevention of these disorders by giving advice on oral hygiene and the importance of regular dental check-up.

Regular dental check ups as well as delivery of dental services should be provided through the established health centers for fishermen population.

The fishermen co-operative societies may establish a dental clinic within their premises to deliver comprehensive oral health care to fishermen population.

The fishermen population seemed to prefer low-cost restorative care to individual preventive care.

The fishermen co-operative societies may appoint a trained oral health educator to educate and improve their attitude and awareness towards dental care and also organize dental health education programmes periodically in their associations.

Dentist in nearby shore should be made familiar with the special life conditions of fishermen population.

The fishery departments may consider distribution of toothbrushes, fluoridated toothpaste, and mouth rinses at a subsidized rate for the fishermen population.

The fishery departments should ensure health insurance not only for major hospitalization but also for all dental procedures may be given.

Acknowledgement

We thank the secretary of fishermen co-operative societies as well as the participants of the study population for their co-operation

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Erupted complex odontoma in mandibular posterior region and review of literature

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Abstract

Odontomas are considered to be hamartomatous lesions rather than true neoplasm. They are generally asymptomatic and associated with impacted or retained teeth because they interfere with the normal eruption of teeth. Most of the odontomas are located intraosseous but occasionally they may erupt extraosseously. Few erupted odontoma, approximately 20 to 22 are reported in the literature, till date. In this paper we report of a rare case of Erupted complex odontoma, of considerably large size, in posterior region of the mandible along with missing 37 and reviewed the literature of odontomas.

Key-words: Odontoma, compound odontoma, complex odontoma, denticulate-particulate.

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Introduction

Odontomas are mixed odontogenic tumors of the jaw. It comprises of 22% of all odontogenic tumors. The term odontoma was first coined by Paul Broca in 1867.[1] World Health Organization (WHO) has described odontomas as benign, mixed, calcified odontogenic tumors and has classified it into compound and complex odontomas.[2,3] The etiology of the odontoma is known but has been attributed to various pathological conditions like local trauma, infection, hereditary anomalies, odontoblastic activity and alteration in the genetic component responsible for controlling dental development.[4-8] Recent studies done by Kim JY et al. have shown that LHX8 might play an important role in odontoma formation.[9,10] Odontomas are usually asymptomatic and discovered on routine radiographic investigation, most of them are unerupted or impacted, very rarely they erupt in the oral cavity.[11,12] Only nine cases of erupted odontomas have been reported in literature and only 20 in the general literature erupted odontoma can cause pain, inflammation of the adjoining soft tissue, infection associated with suppuration[13,14]. They are mostly associated with impacted teeth or retained deciduous teeth because they interfere with the normal eruption. In this paper we have reviewed the literature of odontomas and reported a rare case of erupted complex odontoma in posterior region of mandible. It is seen that compound odontomas are usually found in the anterior maxillary region where as complex odontoma are found in the mandibular posterior region.[11,12,15,16]

Case history

A 14 year old male patient reported to the department of Oral & Maxillofacial surgery with the chief complaint of painless swelling in posterior left region of the lower jaw with extra oral sinus discharge since 8-9 months. The intra-oral examination showed partially erupted hard, yellowish-white calcified, dental tissue like lesion surrounded by inflamed gingiva in the 37 region (Fig. 1). Bony hard swelling was palpable on the buccal aspect. Radiograph examination revealed a radio-opaque lesion of size approximately 2x2 cms in relation with the lower left molar region with impacted 38 and 37 was missing (Fig. 2). Radiographically the provisional diagnosis of Odontoma was given.

Patient was posted for surgical procedure once blood investigation was carried out. Under general anesthesia full thickness mucoperiosteal flap was raised extending from 35 to 38. The surgical site was exposed and sinus tract was removed. The bony mass was excised using bur and chisel. The excised hard tissue was put in 10% formaline. The impacted 38 was left intact. Curettage was done and the enucleated cavity was

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Fig. 1 Erupted Calcified Mass with surrounded Inflammed Gingiva.

Fig. 2 Orthopentomograph showing Opaque Lesion with Impacted 38.

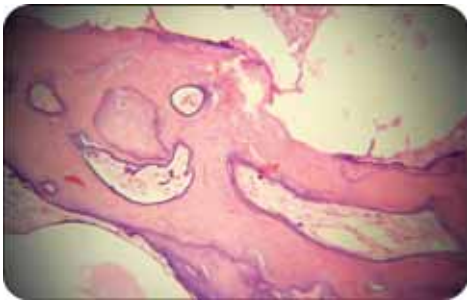

Fig. 3 Photomicrograph showing irregular and unstructured sheets of mature dental tissues.

irrigated using betadine and normal saline. Suture was given using 3-0 silk suture. A Prophylactic antibiotic was prescribed for 5 days. The excised tissue of size approximately 2.3 x 2cm was sent for histopathological examination. Hematoxylin and Eosin (H&E) stained histopathological slide showed irregular mass of denticulate-particulate with some amount of fibrous capsule (fig. 3). The radiographical and histopathological correlation confirmed the diagnosis of complex odontoma.

Discussion

The term odontoma was first coined by Paul Broaca in 1867. Broaca defined odontoma as "tumors formed by the overgrowth of transitory or complete dental tissues."[1,2,4] Odontomas are mixed odontogenic tumors in which both the epithelial and mesenchymal components undergo functional differentiation and form enamel and dentin but lack organization due to disordered expression and localization of the extracellular matrix molecules in the dental mesenchyme.[1-8] WHO in its second edition of the histologic typing of odontogenic tumors, classified odontomas under the broad category of tumors containing odontogenic epithelium with odontogenic ectomesenchyme, with or without hard tissue formation. Under this classification, three types of odontomas were listed: odontoameloblastoma, complex and compound odontoma, but in the revised classification (WHO 2005) odontomas were classified into: compound and complex odontomas. Odontomas have also been classified as central, peripheral and erupted odontoma according to clinical presentation.[8,17,18] Howards listed odontoma as fourth category of supernumerary teeth but his classification is universally not accepted.[2]

Odontomas are the most common of the odontogenic tumors of the jaws, which are benign, slow growing and nonaggressive.[11] The etiology of odontoma has been attributed to various pathological conditions like local trauma, inflammatory and or infectious processes, hereditary anomalies (Hermann's syndrome, Gardner's syndrome). Odontoblastic hyperactivity and alteration in genetic component is responsible for controlling dental development. Persistence of a portion of lamina may be an important factor in the etiology of a compound odontoma.[1-8]

Odontoma compromise about 22% of the total odontogenic tumours. The incidences of compound odontoma ranges between 9%-37% and the complex odontome are between 4%-30%. The compound odontoma is slight more common than the complex odontoma, which in turn is more common than the ameloblastic odontoma.[2-7]

Odontomas may occur at any age and any location in the first three decades of life. They are rarely seen in primary dentition and mostly observed with permanent dentition. Complex odontomas have higher predilection in women (60%) compared to men. Butnick in his report stated that there is slight preponderance of compound odontoma in male with the ratio of 2:1.[2,6,16,18] They are usually asymptomatic and are usually diagnosed on routine radiological examination and are associated with impacted or delayed eruption because they lead to alteration in permanent or temporary tooth eruption. The incidences of this association range from 41% according to Katz in a series of 396 odontomas to 87% according to Tomizawa et al.[14]

Compound odontoma show a predilection in the anterior section of the upper maxilla (61%) while complex odontomas are typically found in the posterior mandibular region (34%). Interestingly both type of odontomas occurred more frequently on the right side of the jaw than on the left, (compound 62%, complex 68%).[2-7] Most of the odontomas are located intraosseously, but occasionally odontoms may be located extrosseously like the gingival. There have been few reports of odontomas erupting into the oral cavity. The first case of an erupted odontoma was described in 1980 by Rumel et al. Gabrie S.S et al. in

2009 documented 20 cases, 9 corresponded to compound odontomas and 11 to complex odontomas.[14] Of these cases 12 (60%) are female and 7% (35%) are males Chandra S in 2010 documented another case of compound composite odontoma in maxilla.[19] We report another case of erupted complex odontoma in a 14 year old male located in the left posterior region of the mandible. A rare case of an odontoma occurring in the cranium near the pituitary gland has been reported by Faria et al, demonstrating that an odontogenic lesion may arise in brain tissue due to the embryological relationship between primordial stomodeum and rathke's pouch.[15] The radiographic characteristics of odontomas are always diagnostic. The lesion consists of well defined radio-opacity surrounded by a radiolucent halo and which in turn is surrounded by thin sclerotic line. The radiolucent halo represents an enlarged cystic follicle. In compound odontoma multiple teeth like structure of varying size and shape are seen. Complex odontomas are seen as irregular radiodense masses with no resemblance to dental structures. In our case the radiograph showed a large irregular radio opaque mass of size approximately 2x2cm with no resemblance to dental structure. Radiographically three different development stages can be identified depending on the degree of odontoma calcification. In the first stage the lesion appears radiolucent due to the lack of calcification, intermediate stage is characterized by partial calcification; and in the final stage the odontoma appears radio-opaque which is surrounded by a radiolucent halo.[20]

Histopathologically, odontomas are composed essentially of mature dental tissues— that is enamel, dentin, cementum and pulp tissue and may be arranged in discrete tooth like structures (compound odontoma) or as unstructured sheets (complex odontoma). The bulk of the tumor usually consists of dentin that is normal in appearance. There is a fibrous capsule and a small amount of supporting fibrous tissue. So-called ghost cell keratinization is occasionally seen in the enamel-forming cells of some odontomas.[21] In our case the H&E stained slide showed irregular and unstructured sheets of mature dental tissues along with supporting fibrous tissue.

Conclusion

A rare case of erupted complex odontoma, of considerable size in the left posterior region of mandible is reported. In our case, we observed partially erupted yellowish-white calcified, dental tissue like mass with inflammation of the gingiva in the 37 along with bony hard swelling in the buccal aspect associated with a congenitally missing 37. The important feature found in this case was that the complex odontoma was of considerable size i.e. approximately 2.3x2cm occurring in the left posterior region of the mandible and secondly the eruption time of this odontoma was approximately the same as that of the mandibular left second molar, which could be related to the aborted tooth formation.

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Deep lobe parotid gland tumour involving parapharyngeal space

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Abstract

Pleomorphic adenoma is most common tumour arising from superficial lobe,rarely from deep lobe of parotid gland.[1] Due to posterior extension such as paraphargnyeal space they can grow for a long time undiagnosed and potential risk of malignant transformation increases over the years with incidence of 1-7%.[2] Most tumours in paraphryngeal space are metastatic or direct extension from adjacent spaces.Parapharyngeal primary tumour are rare and represent 0.5% of head and neck neoplasm.[3] This article present a case of pleomorphic adenoma arising from parotid gland with parapharyngeal extension and it's surgical management.

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Introduction

Para pharyngeal space is potential deep space with a shape of inverted pyramid, base at the skull base and apex of pyramid at the greater corn of hyoid bone. The tumour arises from deep lobe parotid gland extend through the stylomandibular tunnel and push the pharyngeal wall, tonsil and soft palate. These tumours are called dumbbell tumours.[4] Pleomorphic adenoma is a benign tumour of major and salivary gland, the common site of occurrence in the minor salivary glands are in the palate. Diagnostic imaging such as CT, MRI can be done but MRI preferred as it shows better definition of soft tissue. In the study of 51 patients with pleomorphic adenoma neoplasm both benign and malignant CT and MRI were able to locate mass in 95% and 85% of patients respectively.[5] FNAC is easiest and safest procedure to obtain biopsy samples. No reports of tumour seeding after head and neck aspiration have been described recently.[6]

Case Report

A 65 Year old female patient reported with swelling over the parotid region on the left side which gradually increased in size over 15 years to attain the present size. The swelling seen extending towards the left submandibular area. On examination the swelling was firm in consistency, non tender and irregular in shape. The swelling measured around 10 15 cm in the left parotid region extending into the angle of mandible and the left submandibular region. There is no fixity to underlying structure and borders are well defined. Overlying skin is normal. No neck nodes are palpable and no other swelling in the neck. Both carotid are palpable. Intraorally there is no discharge from parotid gland. Mild swelling in the anterior pillar of tonsil. No facial nerve weakness present. Investigation planned was ultrasound scan, FNAC and CT neck. Ultrasound scan of neck shows well defined lobulated soft tissue mass in the left parotid region. CT neck shows a well lobulated dumb bell shaped lesion in the left parotid space with deeper extension into the left parapharyngeal space. FNAC done showed features of pleomorphic adenoma.

Surgery was planned in which a conventional approach to parotid gland with a plan for access osteotomy if needed. The tail of parotid was enlarged with both superficial and deep lobe enlarged. The deep lobe was more enlarged than superficial lobe stretching the facial nerve. Modified blair incision was placed and a standard superficial parotidectomy was done after identifying the nerve using the anteromedial land mark of diagastric and tragal pointer. Once the lobe is removed from facial nerve, the nerve is gently lifted with the help of hooks and deep lobe was removed carefully avoiding damage to the nerve

The parapharyngeal component was removed separately with no need for access osteotomy and needing for minimal retraction of mandible. All the three components were send separately for HP analysis. Hemostasis achieved, suction drain were kept and wound closed. Drains were removed on

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Fig 1 Swelling

Fig 2 CT picture of the lesion

Fig 3 Incision

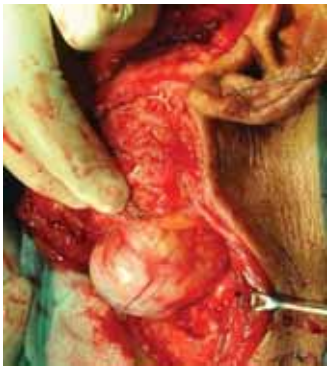

Fig 4 Tumour exposed

Fig 5 Deeper tumour

Fig 6 sutures placed

5th post operative day and patient discharged on the 7th post operative day with uneventful post operative period.

Histopathology showed partly encapsulated lobulated mass composed of epithelial and myoepithelial cells arranged in vague nests. Myoepithelial cells are seen as spindly cells merging into myxoid stroma. Also seen are scattered adipocytes. Focal nest shows squamous metaplasia. Section from deep lobe show circumscribed tumour composed of epithelial and myoepithelial cells in nests and tubules in chondromxyoid stroma.

Discussion

Pleomorphic adenoma is most frequent parotid gland tumour presenting a high risk of recurrence even if it resembles a benign neoplasm. Spiro reported a recurrence in 7% of 1342 patients with benign parotid neoplasm and 6% of patients with benign minor salivary gland tumours.[7] Diagnostic imaging such as CT, MRI are mandatary. MRI Provides important information about location and margins and can guide surgeon in planning the right approach.[8] FNAC is mandatory to avoid any histological suprise.[8] Pleomorphic adenoma remain silent for long time and slow growth does not lead to symptom even if the tumour is in contact or displaces vital structures located in parapharyngeal space. Surgery should be planned with adequate exposure and protect vital structure with complete removal of tumour.

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Peripheral ossifying fibroma

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Abstract

Although ossifying fibroma (a fibro-osseous lesion) appears rarely in the jaw, its prevalence in this region is greater than in other skeletal bones. Researchers are uncertain about whether or not it represents a particular stage of the fibro-osseous condition. This rare reactive lesion appears almost exclusively on the free marginal gingiva and usually involves the interdental papilla. Irritants that may contribute to lesion growth are plaque, calculus, poor-fitting crowns, irregular restorations, and dental appliances. Commonly, the lesion may appear in the anterior part of the jaws. Histologically, it is characterized by the presence of exuberant connective tissue with plump proliferating fibroblasts, fibrous stroma, and numerous basophilic osteoid-like calcifications. The case presented in this article involves a 40-year-old female showing a moderate size localized gingival growth in maxillary incisor region. The lesion was diagnosed according to its histologic picture. The treatment included a wide excision, thorough degranulation, scaling and root planing, and saline irrigation. The 9-month follow-up did not indicate recurrence. The purpose of this article is to present a case of POF, briefly review the current literature on this condition and emphasize the importance of discussion of a reasonable differential diagnosis with the patient or a parent.

Keywords: Peripheral ossifying fibroma, fibrous lesion, pyogenic granuloma, calcifying fibroblastic granuloma.

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Introduction

Peripheral ossifying fibroma (POF), or peripheral fibroma with calcification, is a benign overgrowth of gingival tissue containing various types of calcifications (eg, cementum, osteocementum) and bone formation. These are reactive lesions not to be confused with the peripheral counterpart of the intraosseous neoplasm (central cemento-ossifying fibroma) or central odontogenic fibromas, which are the rare extraosseous counterpart of the central odontogenic fibroma referred to as peripheral odontogenic fibroma (World Health Organization [WHO] type).

As there is no differentiation between cementifying and ossifying fibroma, they are categorized together as cemento-ossifying fibroma in the 1992 WHO type.[1] It is sometimes referred to as calcifying fibroblastic granuloma/ peripheral fibroma with calcification. It appears to be peculiar to the jaws and is not recognized as an entity in other parts of the skeleton.[2] Although etiology and pathogenesis is uncertain, POF is classified as a reactive lesion.

Case report

A healthy 40-year-old female reported to the Department of Periodontics, Bapuji Dental College and Hospital, Davangere, India with a chief complaint of pain and swelling in the upper front teeth region since 1.5 years. Patient had been referred by her family physician to a Periodontist. She reported a history of trauma in the upper front teeth region with the loss of upper front teeth 7 to 8 years prior to the presentation with swelling.

According to the patient, she first noticed reddish-purple swelling 1.5 years back, which was of peanut-size, situated in the upper front edentulous area and was not associated with any symptoms which made her not to report it to her family physician; later, it had gradually increased to the present size of a berry, and was associated with bleeding for the past one month. As reported by the patient, the lump was associated with pain which was of "stretching" type

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Fig. 1 Intraoral view of the lesion.

Fig. 2 Intraoral periapical radiograph of teeth Nos.11,12, 21, and 22 reveals flecks of radiopacity.

Fig. 3 Occlusal radiograph reveals fleks of radiopacity.

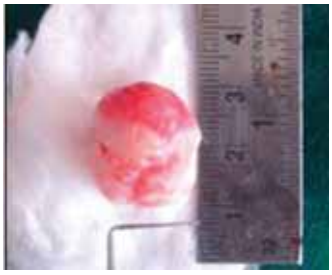

Fig. 4 Excised lesion

Fig. 5 15 days intra-oral post-operative view.

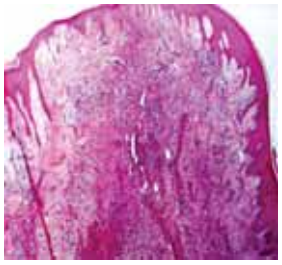

Fig. 6 Histopathologic section (x5)

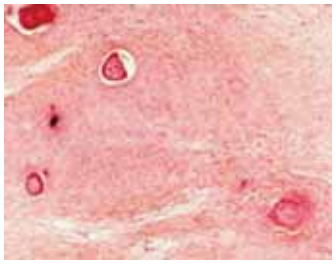

Fig. 7 Histopathologic section (x10) showing foci of calcifications.

Fig. 8 Nine months post-operative view.

and was continuous, severe, and radiating toward temporal regions on both sides.

The patient was in good systemic health, and her family, medical and dental histories were noncontributory.

During the consultation, it became apparent that the patient was very concerned about the pathogenesis of the lesion. According to the patient, their family physician had discussed the possibility of the lesion being a carcinoma. This had raised the patient's anxiety level considerably.

1 Clinical Examination

Intraoral examination revealed poor oral hygiene, presence of a solitary swelling in the upper anterior region on the residual alveolar ridge, extending from mesial aspect of #12 to mesial aspect of #23. The lesion was reddish purple and measuring about 2 x 3 cm. It was pedunculated and roughly spherical and had a lobulated and erythematous surface as well as distinct borders with ulceration (Fig.1). The swelling covered the alveolar ridge labially and palatally. On palpation, the growth was firm and painful. Missing teeth were #11, #21, #22, and tooth #12 associated with the lesion showed Grade III mobility. Complete blood investigations revealed insignificant findings.

2 Radiographic examination

Intraoral periapical and occlusal radiographs were obtained. Radiographic examination revealed flecks of radiopacities in the soft-tissue lesion with severe bone loss in relation to #12 up to its root apex (Fig. 2 and Fig 3).

3 Diagnosis

On the basis of patient's history, clinical presentation and radiographic examination, a provisional diagnosis of calcifying fibroblastic granuloma was made, and an excisional biopsy was planned. The differential diagnosis included irritational fibroma, pyogenic granuloma, peripheral giant cell granuloma, peripheral odontogenic granuloma. This differential diagnosis was discussed with the patient in an attempt to alleviate fears of squamous cell carcinoma.

4 Treatment

For the surgical procedure, the patient was given 2% xylocaine HCl with 1:80,000 adrenaline. The entire soft-tissue mass with 1mm of healthy gingival tissue as well as underlying periosteum were excised, along with the extraction of #12 (Fig. 4). The excised lesion was stored in 10% of formalin. A thorough degranulation was performed followed by scaling and root planing of the adjacent teeth. The area was thoroughly irrigated with normal saline, and the surgical wound was covered with periodontal dressing. Antibiotics and analgesics were prescribed, and the patient was discharged after receiving postoperative instructions, and was asked to return after 15 days for a follow-up examination (Fig. 5).

5 Histopathology

The excised lesion was submitted to the Department of Oral Pathology for histopathological examination.

The report regarding her histopathology indicated that the hematoxylin and eosin-stained sections revealed a hyperkeratinized stratified squamous epithelium and underlying connective-tissue (Fig. 6). The connective tissue exhibited plump proliferating fibroblasts and relatively delicate fibrous stroma.

Numerous basophilic osteoid/cementum-like calcifications (Fig. 7) are seen in a discrete pattern in many areas of the sections. Chronic inflammatory cell infiltrate consisting of predominantly plasma cells and lymphocytes are also evident. Extravasated red blood cells and many blood capillaries with endothelial cell proliferation are also observed. Myxoid areas are seen around the blood capillaries. Considering the patient's history, clinical features, radiographic features, and microscopic picture, a final diagnosis of POF was made.

Discussion

Intraoral ossifying fibromas have been described in the literature since the late 1940s. Many names have been given to similar lesions, such as epulis,[3] peripheral fibroma with calcification,[3] peripheral ossifying fibroma,[4,5] calcifying fibroblastic granuloma,[6] peripheral cementifying fibroma, peripheral fibroma with cementogenesis[7] and peripheral cemento-ossifying fibroma.[8]

When presented clinically with a gingival lesion, it is important to establish a differential diagnosis. Although it is also important to maintain a high index of suspicion, discussion with family members should be tactful to prevent undue distress during the waiting period between differential diagnosis and definitive histopathologic diagnosis.

It is a fairly common lesion, comprising nearly 3% of oral lesions biopsied in one study,[3] approximately 1%–2% in other studies.[9]

Although they are generally <2 cm in diameter,[10] size can vary; reports range from 0.2–3.0 cm[10] to 4 mm–8 cm[3].

The female to male ratio reported in the literature varies from 1.22:1 and 1.7:1[9,10] to 4.3:1[4].

Approximately 60% of POFs occur in the maxilla,[12,11] and they occur more often in the anterior than the posterior area,[9,11] with 55%–60% presenting in the incisor-cuspid region.[3,4,10]

Hormonal influences may play a role, given the higher incidence of POF among females, increasing occurrence in the second decade and declining incidence after the third decade.[9]

Radiopaque fleks of calcifications have been reported to be scattered in the central area of the lesion, but not all lesions demonstrate radiographic calcifications.

With an estimated 8% to 20% recurrence rate,[12] the lesions should be fully excised along with the involved periosteum and periodontal ligament.

The treatment of choice for POF is local resection with peripheral and deep margins including both the periodontal ligament and the affected periosteal component,[7] with elimination of local etiological factors such as bacterial plaque. A long-term postoperative follow-up was needed. In the present case, a follow-up at 9 months (Fig. 8) showed no evidence of recurrence. A meticulous surgical approach was thought to be effective at minimizing the rate of recurrence.

Conclusion

In this case report, the authors emphasize the importance of histopathologic data and radiographic findings to confirm the clinical diagnosis. Adequate excision with thorough degranulation and excision of the underlying periosteum with scaling and root planing prevents recurrence of the lesion.

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Importance of aggregatibactor actino mycetem comitans in the etiopathogenesis of periodontal disease

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Abstract

Periodontis is a chronic inflammatory disease of the supporting tissues of the teeth caused by specific microorganisms or specific groups of microorganisms resulting in progressive destruction of the periodontal ligament and alveolar bone and ultimately loss of teeth.[1] The main etiologic factor implicated in the initiation of periodontal disease is dental plaque or oral bio film which is composed of pathogenic bacteria and host proteins. Aggregatibactor actinomycetem comitans is one of the most powerful periodontal pathogen in the dental plaque by virtue of the various virulent factors produced by this organism.[1,2,3] Apart from the most potent leukotoxin it produces various other factors like bacteriocin, chemotaxis inhibiting factor, cytotoxic factors, Fc binding proteins, immunosuppressive factors,lipopolysacharides, collagenase, fibroblast inhibiting factor, and antibiotic resistant determinants.[1]

The ability of lipopolyscharides released by aggregatibacter actinimycetem comitans stimulates macrophages to release interleukins IL-1,IL-1B,and tumour necrosis factor [TNF]. These cytokines are able to stimulate bone resorption which is an essential feature of aggressive periodontitis. By virtue of these powerful virulence factors these bacteria can survive and colonize periodontal pockets. It has the capacity to modulate immune response,evade phagocytosis and damage the immune system.[1,4]

Key words: Aggregatibacter, aggressive periodontitis, periodontal pathogen

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Introduction

Periodontal diseases represent the most common diseases of adults and one third of the children population.

Periodontal disease is a chronic, inflammatory disease of the periodontium. The initiation, development, diagnosis and subsequent treatment of the disease follow a well documented sequence. Microbial plaque is generally considered to be the initiating factor in periodontal disease.[1,3,5] It is a bio film composed of micro colonies encased in polysaccharide matrix. When plaque accumulates on tooth and gingival surfaces, it instigates the development of an inflammatory response in the periodontal tissue. The nature and duration of the inflammatory response is critical to the clinical outcome of the disease.[5] If the inflammatory response is sufficient to control the challenge from the plaque bacteria without destruction of the periodontium, the clinical condition is called gingivitis. If there is destruction of periodontal ligament and alveolar bone, it results in periodontitis.[1,5]

Healthy gingival sulcus has a flora dominated by gram positive cocci especially streptococcus and actinomyces. Later dental plaque matures, resulting a flora which consists of facultative anaerobic microorganisms, spirochetes and motile rods. The proportion of the strict anaerobic and gram negative rods increases when the disease progresses. Periodontal disease activity can range from slow, chronic progressive destruction to brief and acute episodic bursts with varying intensity and duration.[6,7]

The composition of the sub gingival microbial flora and level of pathogenicity differ from person to person as well as from site to site. The research in this direction has been underway for more than hundred years.[2] The most important microorganisms implicated so far as the etiologic factor has been Aggregatibacter actinomycetem comitans [Aa],

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Porphyromonas gingivalis[Pg] Prevotella intermedia, Bacteroides forsythus Bf],capnocytophaga, campylobacter rectus.[1,5,8] Recently herpes virus also has been included as one of the causative agents.[9] Each species of microorganisms possess a large number of virulence factors relevant to the progress of the disease process. Bacteria and their products stimulate inflammation which leads to increased release of pro inflammatory mediators such as cytokines, prostaglandin E2 which impair the periodontal tissues. Among the dental plaque bacteria Aggregatibactor actinomycetem comitans stands out as one of the most powerful periodontal pathogens.[5,8]

Aggregatibacter actinomycetemcomtans

Aggregatibactor actinomycetemcomitans [Aa], previously known as Actinibacillus actinomycetemcomitans is a gram negative facultative non motile cocco bacillus, an oral commensal often found in association with localized aggressive periodontitis, although it is also associated with non-oral infections like endocarditis, brain abscess etc.[8] Its role in periodontitis was first discovered by Jorgen Slots, currently professor of Dentistry and microbiology at university of Southern California School of Dentistry.[5,7] Bacterium Actinomycetem comitans was described by Klinger [1912] as cocco bacillar Bacteria isolated together with Actinomyces from actinimycotic lesions of man. It was reclassified as Actino bacillus actinomycetem comitans by Topley & Wilson [1921] and as Haemophilus actinomycetem comitans by Potsn et al [1985]. The species has attracted attention because of its association with localized aggressive periodontitis [Slots & Ting, 1999; Haubek etal, 2001]. Recent studies have shown a phylogenitic similarity of Actinobacillus actinomycetem comitans and haemophilus paraphrophilus and Haemophilus segnis suggesting the new genus Aggregatibactor.[1,10,4]

Culturing properties

A.actinomycetem comitans is a gram negative, facultative immobile coccobacillus, which has fimbria.[11] It grows on blood and chocolate agar; where it forms colonies after incubation of 48-72 hours. This immobile anaerobic bacillus grows at the temperature of 37°C, but also at temperatures 20-40°C. It produces colonies on special plates which are in the primary isolation but it is sticky and difficult to take off from the surface of agar plates.[1, 2] A marked culture forms after 5-7 days of growth. Since carbohydrate breaks down glucose and fructose into acids without gas, methyl red and indol test give the positive results. Nitrate reduces nitrite. Most of the unease strains are positive. The colonies were anhemoliticus, smooth, partially transparent to light and with irregular edges. It is biochemically active and produces catalase and ferments carbohydrates.[1]

Discussion

It is one of the bacteria which is implicated in destructive periodontal diseases. It is normally found in dental plaque, periodontal pockets and gingival sulcus. Although it has been found more frequently in localised aggressive periodontitis.[1,2] prevalence in any population is high. It has also been isolated from actinomycotic lesions. It posses a lot of virulence factors that enable it to invade tissues. The most important virulence factor is leukotoxin which kills PMNs and monocytes. Other factors which has been produced by this bacteria are bacteriocin, chemotaxis inhibiting factor, cytotoxic factors, Fc binding proteins, immunosuppressive factors, lipopolysacharide, collagenase, fibroblast inhibiting factor, antibiotic resistant determinants, adhesives, invasive and function inhibiting factor of leukocytes. Leukotoxin from A.actinimycetemcomitans could kill human and non human polymorphonuclear leukocytes, macrophages and peripheral blood monocytes. So it leads to local immunosuppression in supragingival area which has a central role in development of periodontal lesions in juvenile periodontitis. Actinomycetemcomitans endotoxin has the potential to modulate the host responses and contribute to tissue destruction.[2,11,12]

It has the ability to stimulate macrophages to release interleukins IL-1,IL-1B and tumor necrosis factor which are responsible for bone resorption. A. actininomycetem comitans and P.gingivalis represents exogenous microorganisms, based on its minor presence in healthy individuals. It has been recommended that periodontal disease associated with periodontal pathogens represent “true infections”.[10] Bacteiological diagnosis of these diseases is based on the cultivation of microorganisms on appropriate substrate. Identification of culture is done by biochemical activity like fermentation of sugar, positive catalase test and nitrate reduction.[1,2,3]

Conclusion

Aggregatibacter actinomycetem comitans is a very important period onto pathogen which has a key role in the aetiology of different forms of periodontal diseases. A recent multicentre study conducted by Carlos Metal confirms that there is direct correlation between aggression of the disease and the number of organism present in the periodontal pockets.[2] Considering that it is found in abundance dental plaque and periodontal pockets efforts should made to prevent

its occurrence. This is achieved by educating patients an motivating them to maintain proper oral hygiene. Since the organism is having invasive capacity proper antimicrobial agents should be administered as a preventive and curative measure. This organism is very sensitive to tetracycline and therefore it is the right choice of antibiotic in the treatment of aggressive periodontal disease along with metronidazole and clindamycine.[5,8]

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Multiple impacted supernumerary teeth

*John Aby, *Akhin John George, **Titus peter, ***Jacob Kurien

Abstract

Multiple impacted supernumerary teeth are usually associated with several syndromes,it can rarely be present in the absence of systemic disorders.

A routine pre-orthodontic radiographic assessment of the first patient,16 year old child showed the presence of multiple supernumerary teeth located in the three quadrants of his oral cavity. Second patient,16 year old child presented with pain in relation to carious mandibular right molar tooth which on radiographical examination revealed multiple impacted supernumerary teeth. All the supernumerary teeth of both the patients were surgically extracted.

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Introduction

Supernumerary teeth also known as hyperdontia is a term used to describe extra teeth that develops in addition to the normal 32 permanent teeth. Supernumerary teeth are classified according to morphology and location. Conical, tuberculate, supplemental and odontome are the four different morphological types seen in permanent dentition[4]. Conical is the most commonly found type of supernumerary tooth.

Variations in position include mesiodens, paramolars, distomolars and paramolars. The most common supernumerary tooth develops in between maxillary central incisors also known as mesiodens. Supernumerary teeth can occur as single or multiple, unilateral or bilateral and in one or both jaws. Cases involving one or two supernumerary teeth commonly involve anterior maxilla[7], followed by mandibular premolar region[1].

Supplementary supernumerary teeth occurs commonly in mandibular premolar region[5]. Supernumerary tooth may erupt normally, remain impacted, appear inverted or take an abnormal route of eruption[6]. Supernumerary teeth can lead to complications like teeth crowding, rotation, resorption of adjacent teeth, delayed eruption of adjacent teeth and cystic lesions.

Etiology of supernumerary teeth includes tooth germ dichotomy[3] and hyperactivity of dental lamina[1]. Heredity[9] may also play a role in occurrence of the anomaly.

Multiple supernumerary teeth are most common when a syndrome is involved. Multiple supernumerary teeth are often associated with syndromes such as Gardner's syndrome, cleft lip and palate, cleidocranial dysplasia[8]. Multiple hyperdontia is rarely not associated to complex syndromes[2]

Case report –first case

A 16 year old boy came to the out-patient clinic of department of oral surgery for the extraction of first premolars of both maxillary and mandibular arches for orthodontic correction of his proclined maxillary teeth. On intra oral examination all permanent teeth except third molars are erupted, all erupted teeth are of normal size and shape. No hard tissue or soft tissue abnormalities were detected.

Extraoral and general examination of patient revealed no abnormalities. Orthopantomogram revealed impacted developing supernumerary teeth in relation to roots of right maxillary and mandibular premolars and left mandibular premolar tooth.

Surgical extraction of all three supernumerary teeth were carried out under local analgesia.

Case report- second case

A 16 year old child who came to outpatient clinic with pain in

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Fig. 1

Fig. 2

relation to lower right first molar, which was pulpally involved.

IOPA revealed presence of two impacted supernumerary teeth in relation to apices of roots of mandibular right first molar and second premolar, following which on OPG was taken which revealed another impacted supernumerary tooth in relation to mandibular left premolar root apex. On intraoral examination all permanent teeth except third molars are erupted. All erupted teeth were of normal size and shape. Extra oral and general examination revealed no abnormalities.

Discussion

Detection of supernumerary teeth is achieved usually through clinical and radiographic examination. In the absence of symptoms, supernumerary tooth are identified during radiographic examination by coincidence. The position, size and nature of supernumerary tooth and the level of patient co-operation will influence the surgical difficulty.

Each case has to be individually assessed for the best treatment possible.

As there is always risk of damaging adjacent anatomical structures like inferior alveolar canal and maxillary sinus during extraction, risk- benefit ratio of supernumerary tooth removal must be evaluated. Prophylactic surgical removal of all supernumerary teeth were done in both of our patients. All supernumerary teeth had follicular spaces and no pathological changes were detected.

Conclusion

Multiple hyperdontia is rarely not associated with complex syndromes. This condition is infrequent and is normally asymptomatic. Diagnosis usually established as a result of a casual finding while performing routine panoramic radiographic studies for other purposes. Prophylactic surgical removal of supernumerary teeth to prevent future complications is generally the treatment of choice. Periodic radiographic follow-up is necessary as there is possibility of late appearance of new supernumerary teeth.

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Non surgical management of a non-vital tooth with open apex

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Abstract

Infected tooth with open apex in adult patient is difficult to manage because of its inherent weakness.Non surgical management of such a tooth involves disinfection of root canal and placement of a medicament to promote apex closure.Calcium hydroxide is used for apexification followed by obturation.Restorative procedure is completed with composite and crowning.

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Introduction

Trauma to young permanent tooth at an early stage of life leaves the tooth non vital with a wide open apex. Severe instrumentation in such a weak root is risky and profuse irrigation along with intracanal medication is important for disinfection. Role of Sodium hypochloride as an irrigant is wellknown and Calcium hydroxide is widely used as an intra canal medicament. However certain microorganisms like *Enterococcus faecalis* isolated from chronically infected root canals with periapical lesions is found to be resistant to Calcium hydroxide[1]. Chlorhexidinegluconate is a synthetic cationic bis-biguanide with excellent antimicrobial activity. It is found to be effective against microorganisms which are resistant to Calciumhydroxide.[2,3]

Disinfection of root canal is crucial for the formation of calcific barrier. Calcium hydroxide is undisputedly is used as an agent for apexification. Apical barrier formation occurs between six months and eighteen months. Because of the presence of a wide rootcanal obturation needs preparation of customized Guttapercha points. The restoration of access preparation is important since a wide opening reduces the strength of the crown. A bonded restoration is beneficial because it increases the resistant of tooth against fracture.

A clinical case of nonsurgical management of an infected tooth with open apex in an adult patient is discussed here.

Case report

A twenty eight year old male reported to the clinic with discolored anterior teeth and he had occasional vague pain with mild swelling related to tooth. There was a history of fall at eight years of age, he did not seek any treatment as there was no complaint at that time. Before four years he noticed a mild discoloration of the same teeth and consulted a specialist who did a root treatment taking two visits. He could not complete the treatment as he was not able to report to the clinic for appointments.

On visual examination there was mild grayish discoloration of 21 and 22. The distal angle of 21 was fractured, both teeth had access openings filled with temporary cement without an intact margin. Teeth were nontender, without mobility and periapical area appeared reddish with mild swelling. Intraoral periapical radiograph showed unfilled wide rootcanals of 21 and 22 with periapical radiolucency. Root of 21 was with an open apex (fig 1).

Removal of temporary filling of 21 and 22 caused the flow of pus and blood from the teeth. Rootcanals of both the teeth were irrigated profusely with 5% of Sodium hypochlorite along with gentle instrumentation. After finding working length rootcanals were filled using a lentulospiral with a creamy mix prepared by mixing Calcium hydroxide powder and 0.2% Chlorhexidine gluconate. After ten days on removal of temporary there was exudate from root canals and same medication was repeated. Patient was recalled after fifteen days, both the rootcanals were almost dry. Medication was repeated for 22 and rootcanal of 21 was filled with a paste of Calcium hydroxide (fig 2).

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Fig. 1


Fig. 2


Fig. 3


Fig. 4

Rootcanal of 22 was dry on the next appointment after fifteen days and it was obturated with custom made Guttapercha by hot rolling of several cones. PA x-ray of 21 after five months showed lack of density of filling, rootcanal was again filled with a fresh mix of Calcium hydroxide paste. After six months X-ray showed resolution of periapical lesion with signs of apical barrier formation which was confirmed by gentle probing at root tip with a no.45 K file. Root canal of 21 was dried and obturated with custommade Guttapercha (fig3). Access filling of 21 and 22 upto 2mm cervically was done with dentine bonding composite over a base of Glassionomer cement. Crowning after two months restored normal appearance. Review after eight months with X-ray showed a definite apical barrier for 21 and complete healing of periapical area (fig.4).

Discussion

Root end closure in an open apex involves disinfection of rootcanal followed by initiation of calcific barrier formation. Calcium hydroxide is with a high pH and has been used for long with considerable success. Efficiency of Calcium hydroxide against certain microorganisms in infected root canals is found to be less.[4] Chlorhexidinegluconate is an antibacterial agent found to be effective against microorganisms like Enterococcus faecalis[5] and Candida albicans[6] which are frequent in chronically infected root canals. It is observed that antimicrobial efficiency of Calcium hydroxide is significantly increased when it was mixed with Chlorhexidine.[7]

Long term Calcium hydroxide therapy for apexification is a traditional method which is less expensive and with high success rate. Mineral trioxide aggregate (MTA) is the material currently used for root end closure. It requires only few visits compared to Calcium hydroxide. However prospective long term studies are lacking to compare the success rate of MTA with that of Calcium hydroxide. Root end elongation and thickening with apical closure is now possible by revascularization of necrotic pulp.[8]

Root completion in this case took twelve months since the beginning of treatment using Calcium hydroxide. It was a chronic lesion with twenty years of duration and initial medication with Calcium hydroxide, Chlorhexidine combination was found to be effective in controlling infection. Access closure with bonding resin upto cervical level is effective in strengthening the tooth. Reviewing after eight months of obturation with radiographs showed a complete calcific barrier with normal periapical healing.

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Simvastatin in periodontics-a review.

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Abstract

Statins have become a highly debated form of drug in recent years. Simvastatin is a chemical modification of lovastatin, an enzyme of the cholesterol synthesis pathway. It is reported to have an anti-inflammatory effect that works by decresing the production of interleukin-6 and interleukin-8. Simvastatin has also been reported to promote osteoblastic activity and inhibit osteoclastac activity. In this review, a summary is made of the anti-inflammatory effect mainly and how it can be made useful to improve the complications associated with periodontal disease.

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Introduction

Statins constitute the most powerful class of lipid lowering drugs. Clinical trials have demonstrated a marked reduction in cardiovascular mortality in patients taking statins. The benefits observed with statin therapy are related to their pleiotropic effects, independent of cholesterol lowering. It has been suggested that the clinical benefits of statins could be related to anti-inflammatory properties[1], an improvement in endothelial dysfunction[2], a reduction in blood thrombogenicity and immune modulatory actions.[1] Many of these effects are related to the inhibition of isoprenoid synthesis, which serves as a lipid attachment for small G proteins implicated in intra cellular signaling.

Periodontitis is a chronic inflammatory degradation of the tissues and bone supporting the teeth, which is composed of gingival, cementum, periodontal ligament and alveolar bone. Periodontitis is considered to result from an imbalance between destruction and repair of periodontal tissues, triggered by oral bacteria. There are a number of bacterial products which stimulate local host responses that enhance the production of prostaglandis and inflammatory cytokines like IL-1α, IL-1β, IL-6 and IL-8, the gathering of inflammatory cells, the elaboration of lytic enzymes and subsequent damage of periodontal tissue.

It has been found that oral pathogens and inflammatory mediators such as IL-1 and TNFα from periodontal lesions intermittently reach the blood stream inducing systemic inflammatory reactants, such as acute phase proteins and immune effects including systemic antibiotics to periodontal bacteria[3]. Further, periodontitis can be accompanied with severe systemic complications.[4] At present the tissue regenerative therapy is applied to treatments of periodontal disease, in addition to therapies focusing on eradication of the cause of the disease. If these therapies are to be successful, control of inflammatory conditions is a must.

Also, since many patients who undergo periodontal treatment are suffering from various systemic diseases and taking a number of drugs in combination, it is very important to find effective therapies adequate for respective patients.

Many cardio vascular studies have suggested that statins have anti inflammatory effects independent of cholesterol lowering. As a chronic inflammatory disease, periodontitis shares some mechanisms with atherosclerosis.

Since oral epithelial cells participate importantly in periodontal inflammation, we focused on the anti inflammatory effect of statins, since there is a similar progress of the disease state between CVD and periodontitis. In this review, we describe the anti inflammatory effect of simvastatin, which could modulate atherogenesis on periodontal cells.

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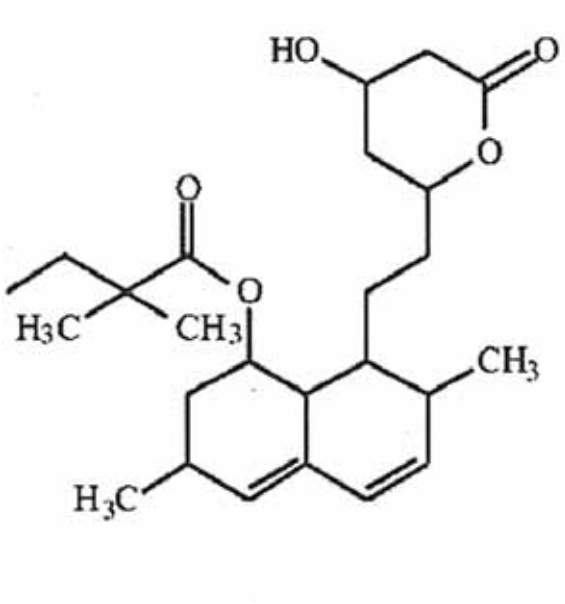

Molecular structure of Simvastatin

Effects of simvastatin on IL-Iα -induced inflammatory cytokines in kb cells

There is evidence that simvastatin lowers the effect of IL- 1α –induced inflammatory cytokines, such as IL-6 and IL-8 in human gingival fibroblast (HGF's) and human epithelial cell line (KB cells), which has been extensively used as a model for the study of gingival epithelial cells. Simvastatin showed a dose dependant down regulation of IL-1α – induced IL-6 and IL-8 by KB cells. Also, simvastatin decreased IL-6 and IL-8 production in human gingival fibroblasts (HGFs). LPS derived from Porphymonas gingivalis, a pathogenic bacterium causing periodontal disease also showed the same results. Hence we can infer that the signals of both IL-1 and LPS might have almost the same transmitting pathway in common.

The reduction of IL-6 and IL-8 production by simvastatin was completely reversed by the addition of geranyl geranyl pyrophosphate (GGPP). This is a similar observation to the pleiotropic effects of simvastatin in other type of cells, including endothelial cells, cardiac myocytes and macrophages.

Periodontitis and statins

In CVD, there are elevated levels of inflammatory mediators such as IL-1 and TNFα- in periodontal lesions and consequently increased serum levels. So periodontitis is widely accepted as a risk factor for CVD. So It may be presumed that administration of statins to CV patients may have additional benefits on atherosclerotic suppression through inhibition of inflammation in oral tissue. Since simvostatin is frequently used the findings that there is inhibition of IL-1α induced IL-6 and IL-8 activity may have a clinical importance. There is also a report of the association of statin used with decreased tooth loss rate in chronic periodontitis patients by Cunha-Cruz.et.al.[6] These findings indicate that statins might have beneficial effects on periodontal disease as well as in CVD.

Discussion

Presently there is lot of evidence suggesting that simvastatin reduces IL-1 induced production of inflammatory cytokines such as IL- and IL- human oral epithelial cells. Similar observations have been reported concerning pleiotropic effects of simvastatin in other types of cells such as endothelial cells, cardiac myocytes, and macrophages. Also it was observed that severe periodontitis is more prevalent in patients with than in those without hyperlipidemia.[7] In conclusion, we can presume that simvastatin has an anti inflammatory effect on human oral epithelial cells involving mechanisms independent of cholesterol lowering. Whether these actions also suppress other constituents of inflammation such as MMPs, cellular adhesion molecules, and chemokines-remains to be investigated.

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Hepatitis B, C and D –risk factors and prophylactic guidelines

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Abstract

Viral hepatitis can be caused by Hepatitis A, B, C, D, E and G viruses. Of these the dental health care professional is at great risk of occupational exposure to the blood borne viral infections - Hepatitis B, C and D. Blood, saliva and nasopharyngeal secretions could be sources of these viruses. This article gives a brief insight into the clinical, pathological and diagnostic aspects of blood borne viral hepatitis. The prophylactic measures for Hepatitis B, C and D are also underlined.

Key words: Occupational exposure, Pre and post exposure prophylaxis.

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Information

Hepatitis B virus (HBV) is a DNA virus with a nuclear capsule enveloped by an outer lipid layer containing hepatitis B surface antigen (HBsAg). The nuclear capsule contains other viral components, including the hepatitis B core antigen (HBcAg), the e antigen (HBeAg), DNA, and DNA polymerase. HBV replicates within the hepatocyte through an intermediate step of reverse transcription mediated by viral polymerase.[1] Sexual contact, intravenous drug use, and transfusion of blood and blood products are common modes of transmission. In Asia, HBV is commonly transmitted perinatally.[2] Transmission via saliva may be important to dentistry, as HbSAg is detectable in saliva of infected individuals.[3] An exposure that might place a health care worker at risk for HBV, HCV, or HIV infection could be a percutaneous injury (e.g., a needle-stick or cut with a sharp object) or contact with mucous membrane (of eyes, mouth, nose, etc.) or non-intact skin (e.g., exposed skin that is chapped, abraded, or afflicted with dermatitis) with blood, tissue, or other body fluids that are potentially infectious. Health care workers, particularly dentists, have three to five times the rate of HBV infection compared to the general population.[4] High prevalence of HBV in developing countries substantially increases the risk of occupational exposure. Diagnosis of hepatitis B is made by assessing HBV DNA, HBsAg, and e antigen/antibody levels.[3] Hepatitis B can be "acute" or "chronic." Acute hepatitis ranges in severity from a mild to severe illness that occurs within the first 6 months of exposure to the Hepatitis B virus. A younger individual who becomes infected with HBV has a higher risk for developing chronic hepatitis B and hepatocellular carcinoma. Approximately 90% of adult HBV-infected patients experience a full recovery, but 5-10% of the patients will develop chronic hepatitis with complications such as cirrhosis and hepatocellular carcinoma.[5]

Hepatitis C virus (HCV) is a blood-borne, single stranded RNA flavivirus encoding for a capsid protein, two envelope proteins, and some nonstructural proteins.[6] People at increased risk include hemophiliacs, dialysis patients, and intravenous drug users, although transmission is now reduced due to blood and blood product screening. Other modes of transmission are sexual, perinatal, and idiopathic. The primary mode of transmission of HCV is through blood, and it has also been detected in saliva putting the dentist at a risk for occupational exposure. The main diagnostic test for HCV is the enzyme-linked immunosorbent assay (ELISA) for anti-HCV and RT-PCR; ELISA does not

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distinguish between exposure and infection, whereas RT-PCR can make this distinction.[7] Acute HCV infection usually presents with mild flu-like symptoms, while chronic disease is variable in presentation. Some patients develop chronic infection and suffer no significant liver damage, while others progress quickly to liver cirrhosis and may develop hepatocellular carcinoma.[8] Factors that may impact progression include age, gender, chronic alcohol abuse, and quantity of virus at exposure. Disease appears to be more aggressive in patients that acquire HCV after age 40 and may be more progressive in men than women.[8]

Hepatitis D virus (HDV, delta agent) is a defective RNA virus that uses the HBV surface antigen as a viral envelope. HDV can occur as a co-infection or super-infection in individuals infected with HBV, which may then progress to severe fulminant infection.[9]

Transmission of HDV can occur via infected blood or blood products and is primarily seen in intravenous drug users and hemophiliacs. HDV may also be transmitted through sexual activity. Serologic testing for HDV and anti-HDV is used to detect infection. The screening of the blood supply for HBV has altered the epidemiology of HDV. There is currently no treatment for HDV infection.[9]

Clinicopathologic spectrum of Hepatitis

The clinical pattern and pathologic consequences can be considered as follows.

1. Carrier state-An asymptomatic individual without manifesting the disease, harboring infection with the hepatotropic virus and capable of transmitting it is called a carrier. Carriers could be an asymptomatic healthy carrier who does not suffer from the ill-effects of the viral infection or an asymptomatic carrier with chronic disease also capable of transmitting the virus. Hepatitis B is responsible for the largest number of carriers in the world. A concomitant infection with Hepatitis D often causes progressive disease rather than a asympotmatic carrier state. An estimated 2-3% of the general population are asymptomatic carriers of Hepatitis C. Whereas approximately 10% of adults contracting Hepatitis B infection develop a carrier state, 90% of infected neonates fail to clear HBsAg from the serum within 6 months and become HBV carriers. Clinical recognition of carrier state of HBV is more frequently done by the detection of HBsAg in the serum.

2. Asymptomatic infection-These are cases who are detected incidentally to have infection with one of the hepatotropic viruses as revealed by a raised transaminase or by the detection of the presence of antibodies, but are otherwise asymptomatic.

3. Acute Hepatitis-This involves acute inflammatory enlargement of the entire liver. All hepatotropic viruses run a similar clinical course and identical pathologic changes. Clinically acute Hepatitis has 4 phases

a. Incubation period –The average incubation period for Hepatitis B is 30-180 days. Symptoms appear 90 days (or 3 months) after exposure, but they can appear any time between 6 weeks and 6 months after exposure. For Hepatitis C, incubation period is 42-56 days and for Hepatitis D it is 30-50 days.

b. Pre-icteric phase-is marked by prodromal constitutional symptoms including anorexia, nausea, vomiting, fatigue, malaise, distaste for smoking, arthralgia and headache. Elevation of transaminases can be seen in laboratory investigation.

c. Icteric phase-Onset of clinical jaundice occurs and constitutional symptoms diminish. Dark colored urine, clay colored stools, pruritis, loss of weight and abdominal discomfort are seen during this stage. Elevated levels of serum bilirubin, transaminases, alkaline phosphatase, prolonged prothrombin time, hyperglobulinaemia and serologic detection of hepatitis antigens and antibodies is seen on laboratory tests.

d. Post icteric phase-lasts for 1-4 weeks and is usually followed by clinical and biochemical recovery in 2-12 weeks. Recovery is prolonged in both Hepatitis B and C. 1% cases of acute Hepatitis may develop fulminant hepatitis and 5-10% cases develop chronic hepatitis.

4. Chronic Hepatitis-It is defined as continuing or relapsing hepatic disease for more than 6 months with symptoms along with biochemical, serologic and histopathologic evidence of inflammation and necrosis. HBV causes chronicity in 90% of infected infants and 5% of infected adults. At least 85% of persons who contract HCV infection become chronically infected, and chronic hepatitis develops in an average of 70% of all HCV-infected persons. Clinical features may range from fatigue, malaise, loss of appetite and mild hepatosplenomegaly. Laboratory findings are elevated levels of serum bilirubin, alkaline phosphatase, prolonged prothrombin time and hyperglobulinaemia. In chronic hepatitis, the virus remains in a person's body, often without their knowledge, and it can easily be passed to other people. Long standing cases of HBV or HCV infection could evolve into cirrhosis or hepatocellular carcinoma Clinical features may range from fatigue, malaise, loss of appetite and mild

hepatosplenomegaly. Laboratory findings are elevated levels of serum bilirubin, alkaline phosphatase, prolonged prothrombin time and hyperglobulinaemia.

5. Fulminant Hepatitis is the most severe form of acute hepatitis in which there is rapidly progressive hepatocellular failure.

Prophylaxis for HBV

Pre-exposure prophylaxis

Hepatitis B virus vaccination

The most important approach for the prevention of occupational HBV infection is the use of hepatitis B vaccine among persons at risk. HBV vaccine is highly protective and any person who performs tasks involving contact with blood, blood-contaminated body fluids, or sharps should be vaccinated against hepatitis B.[10] Three standard doses of recombinant HBV vaccine should be administered intramuscularly in the deltoid region, preferably with a 1-1.5 inch long needle at a 0, 1, and 6 month schedule.

Protection (defined as Anti-HBs level ≥ 10 mIU/ml) following first, second, and third doses of the recombinant vaccine has been reported to be 20-30%, 75-80%, and 90- 95%, respectively. If the vaccination series is interrupted after the first dose, the second dose should be administered as soon as possible. The second and third doses should be separated by an interval of at least two months. If only the third dose is delayed, it should be administered whenever convenient. [11]

Although serologic testing for immunity is not necessary after routine vaccination of adults, post-vaccination testing is recommended for persons whose subsequent clinical management depends on the knowledge of their immune status, including dental professionals, certain healthcare and public safety workers.[10]

Post-vaccination management

- Responders are protected against HBV infection even if anti-HB concentrations subsequently decline to <10 mIU/mL[10] The mechanism for continued vaccine-induced protection is thought to be the preservation of immune memory through selective expansion and differentiation of clones of antigen specific B and T lymphocytes.[10]
- Routine booster doses of HBV vaccine are not recommended for known responders, even if anti-HBs levels become low or undetectable. [13]
- Periodic antibody concentration testing after completion of the vaccine series and assessment of the response is not recommended. [11]
- It is a fact that 5-10% of the adult population will not respond to standard HBV vaccination.[12]
- Risk factors for vaccine non-response include: Male sex, older age, cigarette smoking, obesity, immunodeficiency, chronic diseases, certain HLA haplotypes, and celiac disease.[14]

The non-responders who tested negative for HBsAg and anti-HBc: Should be,

- Administered a fourth dose and then retested after two months, for immune response. [15]
- If no response is elicited again, the full course of conventional vaccine at the standard doses (i.e., administration of a fifth and sixth dose) must be completed, and again the health care worker must be retested for response, one to two months after the last dose of vaccine. [15,16]
- There are other possible alternative strategies to overcome non-response to standard HBV vaccination, but they need further evaluation. These include
- Immunization with vaccines containing S subunit, pre-S1 and pre-S2 particles [17]
- Three intra-dermal 5 µg doses of standard vaccine to be given every two weeks.[18]
- Combined hepatitis A and hepatitis B vaccines are given, which might have a synergistic effect and mount an immune response,[19] or
- A high-dose standard vaccination schedule is given.[16]

Chances of responding to a second three-dose schedule is reported to be highly encouraging, between 30-50%.[20] Those who prove to be HBsAg-positive should be counseled on how to prevent HBV transmission to others, and also on the need for medical evaluation and treatment.[21] Non-responders to vaccination, who are HBsAg-negative, should be considered susceptible to HBV infection and should be counseled on the precautions to prevent HBV infection and the need to obtain HBIG prophylaxis for any known or probable parenteral exposure to HBsAg-positive blood, if such a situation arises.

Post-exposure prophylaxis

Post-exposure prophylaxis with HBV vaccine, hepatitis B immunoglobulin (HBIG) or both must be started as soon as possible, preferably within 24 hours of the exposure and no later than one week.[22]

The decision to administer either only active immunization (HBV vaccine) or both active and passive immunization (HBIG) will depend on the risk assessment and score of the exposure. Those who have previously been infected with HBV are immune to re-infection and do not require post-exposure prophylaxis. If HBIG needs to be given, as described earlier, the dose should be adjusted to 0.06 mL/kg intramuscularly. The immune response to the vaccine in the health care worker (HCW) must be assessed one to two months after the last dose of vaccine. In pregnant HCWs also, the management remains same.[23]

Prophylaxis for Hepatitis C and D

The development of effective pre- and post-exposure prophylaxis for hepatitis C is complicated because of the genetic diversity of HCV. There is no vaccine against HCV. Effective prophylaxis against hepatitis B will prevent hepatitis D infection.

Conclusion

Dentists are at a high risk of contracting Hepatitis B, C and D. Dentists and their staff should know the risk of infection from their patients, the risk of cross-infection between patients, and the risk of infecting each other. HBV vaccination is mandatory for all clinical staff at 0, 1, 6 months. Adults who respond to hepatitis B vaccination are protected from chronic HBV infection for at least 20 years. The recommendation of a booster dose after 10-15 years of initial HBV vaccination, although controversial, seems prudent

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Dens invaginatus in mandibular premolar

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Abstract

Dens invaginatus is a rare malformation of teeth, showing a broad spectrum of morphological variations which radiographically show an in-folding of enamel and dentine which may extend deep into the pulp cavity, root and sometimes even reach the root apex. These cases may present difficulties with respect to its diagnosis and treatment because of atypical canal morphology. This case report is about the surgical management of Type III dens invaginatus with a periradicular lesion and necrotic pulp. The surgical management of the invagination was performed successfully with a resolved periradicular lesion.

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Introduction

Dens invaginatus is a rare malformation of teeth, showing a broad spectrum of morphological variations[1]. The affected teeth radiographically show an in-folding of enamel and dentine which may extend deep into the pulp cavity, root and sometimes even reach the root apex. Tooth crown as well as root may exhibit variations in size and form. First described in a whale's tooth by Ploquet[1], in 1794. In a human tooth was first described by a dentist named 'Socrates'. Synonyms for this malformation are Dens in dente, invaginated odontome, dilated gestant odontome, dilated composite odontome, tooth inclusion and dentoid in dente. The etiology of dens invaginatus malformation is controversial and remains unclear.

Classification of Dens invaginatus

The following is the most commonly used classification of dens invaginatus proposed by Oehlers[2] (1957) which is based on the depth of the invagination and degree of communication with the periradicular tissue

Type I: an enamel-lined minor form occurring within the confines of the crown not extending beyond the amelocemental junction.

Type II: an enamel-lined form which invades the root but remains confined as a blind sac. It may or may not communicate with the dental pulp.

Type III: a form which penetrates through the root perforating at the apical area showing a 'second foramen' in the apical or in the periodontal area. There is no immediate communication with the pulp. The invagination may be completely lined by enamel, but frequently cementum will be found lining the invagination.

Prevalence of dens invaginatus

The prevalence varies substantially ranging from 0.25% to 10% with the teeth most affected being the maxillary lateral incisors and bilateral occurrence is not uncommon. Swanson & McCarthy[3] (1947) were the first to present bilateral dens invaginatus malformation, Conklin (1968) presented a patient with all maxillary central and lateral incisors affected, and Burton *et al*[5] (1980) published a case with six teeth involved, the maxillary incisors and also the maxillary canines. Krolls[4] (1969) detected a case with dental invaginations in maxillary central incisors as well as in several maxillary and mandibular bicuspids.

Diagnosis of dens invaginatus

In most cases a dens invaginatus is detected by chance on the radiograph. Clinically, unusual crown morphology ('dilated', 'peg-shaped', 'barrel-shaped') or a deep foramen coecum may be important hints, but affected teeth also may show no clinical signs of the malformation.

Treatment consideration

Root canal treatment may present several problems because of the irregular shape of the root canal system(s). Surgical treatment should be considered in cases of endodontic failure and in teeth

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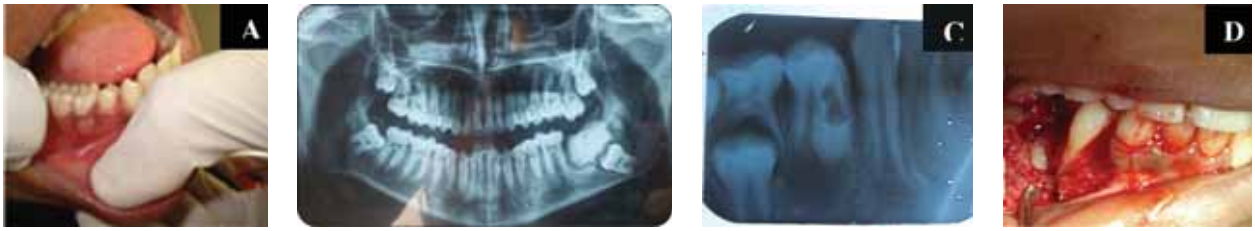

Fig. 1: Representative images of swelling in relation to the buccal aspect of lower right premolar region (Fig. 1A); Panoramic view (fig. 1B), IOPAR (fig.1C) showing caries exposed 85 and a type III invagination of 44 extending all the way from the crown to the apex of the root (pseudo canal), associated with a periapical radiolucency

Fig. 2: Representative images of Slide showing prepared ground section mounted in DPX (fig. 2A); photomicrograph of ground section of tooth (Fig. 2B) showing normal enamel (E), Invaginated enamel (IE) is located below the DEJ and is surrounded by dentin (D) (x100); Dens invaginatus high magnification(x400) ground section showing wavy bundles of enamel rods of invaginated enamel(IE) located within dentin(D) (Fig. 2C)

which cannot be treated non-surgically because of anatomical problems or failure to gain access to all parts of the root canal system. Extraction is indicated only in teeth with severe anatomical irregularities that cannot be treated non-surgically or by apical surgery.

Case report

A 12 year old boy reported to the Department of Pedodontics and Preventive dentistry Sri Sankara Dental College, Varkala, desiring correction of his proclined teeth. Extra oral examination revealed a convex facial profile. Intra oral examination revealed Angle's class I molar relation with proclination of upper anteriors and mild crowding in relation to lower anteriors. A deep carious lesion was seen in relation to 85 and a swelling in relation to the buccal aspect of lower right premolar region (Fig. 1A). A panoramic view was taken to evaluate the eruption status which demonstrated caries exposed 85 and a type III invagination of 44 extending all the way from the crown to the apex of the root (pseudo canal), associated with a periapical radiolucency with no apparent communication with the main canal (Fig. 1B). An IOPAR was also taken to confirm the diagnosis (Fig. 1C). There was no change in colour of 44 as compared to the adjacent teeth. Horizontal and vertical percussion tests revealed a sensitive 44. The absence of vitality was confirmed with thermal stimulation (cold, hot) and electric pulp tester. Based on this evaluation, the diagnosis for tooth 44 was dens invaginatus (Oehlers Type III), necrotic pulp and chronic apical abscess. As patient needs extraction correction, the treatment of choice for 44 was extraction along with 85.

Under local anesthesia, 85, 44 and the cystic lesion were removed after raising buccal flap (Fig. 1D). The surgical defect was closed using silk suture by a mobilized buccal flap. The surgically-removed structure had a single bulbous root (Fig. 1E). The extracted tooth was sent for histopathological examination. The patient was followed up after two weeks and the extraction site as well as periradicular lesion shows completely healed appearance

Conclusion

Root canal treatment may present several problems because of anatomical shape and failure to gain acess to all parts of root canal system. Oehlers classification helps in establishing a general treatment guideline. For type 1 invagination, sealing of invagination is the recommended treatment. In severe type I and II conventional root canal treatment and in type III, extraction of teeth when root canal treatment fails.

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A deadly diagnosis

* Kunjumary John ** Vishnu Mohan

Abstract

Signatures of urban poverty tuberculosis still persist as the gravest danger to this country. Every minute someone dies of TB in India. Tuberculosis strikes vulnerable people with special ferocity.
A 45 years old woman presented to out department complaining of painless, non tender swelling just below the chin. An incision similar to cut throat incision was given in submental region and the tuberculoma was completely excised; which gave excellent results.

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Introduction

Tuberculosis is an infectious disease caused by mycobacterium Tuberculosis, which most commonly affects lungs but also can involve almost any organ of the body. A person can become infected with tuberculous bacteria when he or she inhales minute particles of infected sputum from the air. When the inhaled tuberculous bacteria enters lungs, they multiply and cause a local lung infection (pneumonia).

The lymph nodes also may get enlarged due to tubercular infection resulting the tubercular lymphenitis, also known as 'scrofula' 'king's evil', 'full neck row'. The most common pulmonary site is hilar group of lymph nodes and common extra pulmonary site being cervical group of lymph nodes. Bacteria entering respiratory tract, resulting in lymphohematogenous dissemination with hilar and media stinal lymph nodes through which lymphatics of cervical lymph nodes get involved is the pathogenesis. Initially the lymph node is discrete and firm, later it becomes matted and fixed 'due to periadenitis, further if not treated lymph node coalesce to form abscess, later may become 'collar stud abscess' due to perforation of deep fascia. Skin may get indurated and sinus formation occurs. Healing results with calcification and scarring. This case report deals with successful management of submental tubercular lymphadenopaty in dental OPD.

Case presentation

A 45 years old woman came to our dental department complaining of painless, nontender, matted swelling just below the chin. It had been present approximately for 8 months, which initially began as a small swelling. She had a long standing history of cough, dysaponea and weight lost for 10 months.

On clinical examination the submental lymph node was found to be nontender, firm nodulous, nonfluctuant and approximately 1.5cm in diameter. Investigation report stood negative in blood test but positive in mantoux test. The treatment plan included excision of submental lymphnode and anti tubercular therapy.

The leision was completely excised by using scalpel 15 no. blade mounted over 3 no. handle. An incision similar to 'cut-throat' incision was made. Subcutaneous fat is separated, platyma is cut, superfical deep fascia is divided, tuberculoma is dissected out from the submental triangle. Surgical site is thoroughly debrided and sutured in layers. During the recall visit the patient was asymptomatic with good healing.

Histopathological study reported multiple serial section show lymph node with an effaced architecture by multiple granuloma made by epitheloid histiocytes and occasional langhans type of giant cells. Caseous necrosis is scanty, giving an impression of Granulomatous lymphadentis.

Discussion

In the light of current survey reports 2 million deaths per year worldwide due to this disease. We must know then that this disease of ancient time continues to make its mark. Many years ago, this disease was referred to as "consumption" because without effective

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Fig 1 Matted swelling just below the chin

Fig 2 & 3 Excision of lesion useing scalpel blade

Fig 3 Surgical site sutured

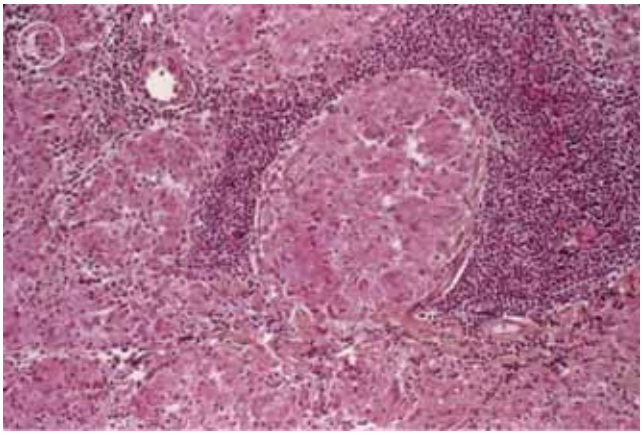

Fig 4. Histopathogical slide shows epitheloid histocyes & occasional langhans type of gaint cells

treatment, these patients often would waste away. Though the introduction of BCG vaccination from the Second World War made a great impact on the mortality rate, still anyone can get TB depending upon the immunity and general health status.

Tuberculosis is hard to miss out if the patient is actively infected as they will shows the classical signs of coughing, chest pain, coughing up of sputum and / or blood, shortness of breath, weight loss, generalized tiredness, fever and night sweats. But diagnosis becomes difficult in early period. It may take many months from the time the infection initially gets into the lungs until symptoms develop. Thus mantoux test (PPD) will not give a positive result, if the infection is of less than 3 weeks age. Doctors encounter another confusion when BCG vaccine is administered in childhood, and further mantoux test remain positive.

There is also a form of atypical tuberculosis, however that is transmitted by drinking unpasteurized milk, related bacteria called mycobacterium bovis cause this form of TB.

Conclusion

Tuberculosis can be eliminated by effective diagnosis, treatment, vaccination and public health measures, however increase in HIV epidemic also contribute to this resurgence of Tuberculosis.

The simple surgical technique described above to excise the tuberculoma in submental lymph node done by the consultant oral surgeon gave satisfactory out come.

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Ex-vivo evalution of shear bond strength of ceramic brackets with metal slots and stainless steel orthodontic brackets

* Madhav Manoj K, ** Roopesh R, *** Jyothindra Kumar

The introduction by Buonocore of acid etching in dentistry has had far-reaching effects on the attachment of orthodontic appliance to the teeth. A variety of acrylic resins and filled diacrylate-based resins, for direct and indirect bonding, have been marketed and tested extensively over the past ten years[1]. Ceramic bracket bases have considerably fewer mechanical undercuts than are found in mesh base designs, and therefore the ceramic brackets might be expected to have a greater bond failure rate which is not the case. Chemical bonding, a more recent development has glass added to the aluminium oxide base and treated with a silane coupling agent. The silane bonds with the glass and has a free end in its molecules that will react with any of the acrylic bonding materials[2]. The most likely reason for no difference in bond strength is that the mechanical interlock provided by the base is adequate for bonding, and the additional chemical bond provided by the silane is unnecessary[3,4,5].

Currently, there are two main types of bracket adhesives in the market ie; acrylic and diacrylate resins. Bishara etal[7] in his study found that the use of the polyacrylic enamel conditioner caused the bond failure to occur more often at the enamel-adhesive interface, resulting in a higher Adhesive Remnant Index (ARI) score. But when it came to bracket fracture, larger percentage of ceramic brackets fractured with the use of phosphoric acid enamel conditioning than with polyacrylic acid (3%).

The ceramic brackets should offer a viable alternative to their metal counterparts because they combine aesthetics with a bond strength that is comparable to and as reliable as their metal counterparts[8]. Odegaard etal[9] compared shear bond strength of metal brackets with that of a new ceramic bracket. Even though there was no statistically significant difference between mesh and ceramic brackets, the ceramic bracket demonstrated the highest shear bond strength of both adhesives. He reasoned that, this strong bond with the ceramic bracket is due to the lack of stress in the adhesive/bracket interface. With all metal brackets, the failure point was predominantly at the bracket/adhesive interface. This indicates that when the bond strength of metal brackets is tested, the weakest point is the union between the adhesive material and the retentive surface of the bracket. As long as the main portion of the adhesive remains on the tooth, the bond between base and adhesive must be weaker than the one between adhesive and enamel. With ceramic bracket, the opposite seems to be true, and the value recorded can be said to be predominantly the strength of the enamel/adhesive interface[10, 11& 12].

Harris etal[13] on comparing the shear bond strengths of orthodontic resins to ceramic and metal brackets interpreted the results as all five groups having clinically acceptable mean shear bond strengths i.e above the 6-8N/mm^2 as stated by Reynold[14]. The highest values were recorded for the ceramic brackets, and the fracture site was in the enamel resin interface in the case of ceramic brackets though it was highly unpredictable.

It must be noted when teeth that are non vital or have been endodontically treated are to be bonded with a ceramic bracket as debonding, either intentionally or unintentionally, may lead to fractures of enamel. Hence the need for vitality testing before bonding and before debonding appears to be essential in the light of this information[15,16]. Furthermore, ceramic brackets have been shown to have wider ranges of both tensile and shear bond strength[8,9].

Many investigation[17,18,19] supports the previous investigations showing higher shear bond strength for ceramic brackets in (20.17Mpa with S.D- 7.2) than for metal brackets (12.24Mpa with S.D- 5.85), and that the increase in film thickness of the adhesive can weaken the interface because of

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Fig. 1 Material used for the study

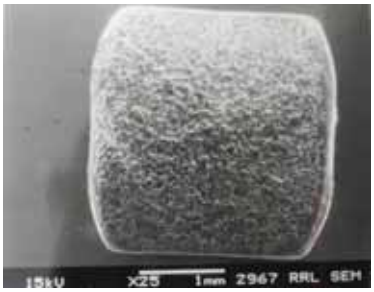

Fig. 2 SEM of base of Clarity brackets

Fig. 3 SEM of base of Luxi brackets

greater polymerization shrinkage and thermal expansion of the resin matrix.

The findings of the studies[20, 21, 22, 23] on debonding forces applied to ceramic brackets simulating clinical conditions indicated that, when using the pliers to debond ceramic brackets, the debonding forces are significantly lower than the shear debonding forces reported during in vitro testing.

Bishara etal[24] compared the above collapsible bracket with that of a new ceramic bracket with an epoxy resin base. The finding of the study indicated that the shear bond strength of the collapsible ceramic bracket (10.4+4.1MPa) was greater than that of the new bracket (7.6+3.1MPa).The shear bond strength of both these brackets were more than that of the minimal force levels that were suggested by Reynolds[14] as being clinically acceptable for orthodontic purposes. This is in contrary to the above study where the shear bond strength of collapsible ceramic brackets to be similar to that of metal brackets. Recently, two new ceramic bracket designs were introduced to the market in an attempt to combine the aesthetic advantages of ceramics and the functional advantages of metal brackets. The new brackets have a metal-lined arch wire slot. The advantage of having a stainless steel/gold slot is to minimize friction that occurs as a result of the arch wires contacting the ceramic surface of the slot and to strengthen the bracket to withstand routine orthodontic torque forces(fig 1). In one of the bracket system a vertical slot of 0.019x0.018 inch in width and depth respectively, is incorporated into the bracket slot designed to create a consistent bracket failure mode during debonding (fig 2). The other bracket system has "micro rock" finish to enhance bond strength while allowing it to debond easily (fig3). Being a very recent introduction into the arena of orthodontic materials there is little knowledge about frictional and debonding characteristics of this bracket system. The present study is envisaged in this context.

Materials and methods

The samples consisted of seventy human upper premolar teeth that were extracted as part of orthodontic treatment and fourteen maxillary central incisors. Only intact, non-carious, unrestored teeth with no developmental defects on the facial surfaces were used. The roots were cleaned of soft tissues debris. These were collected and stored in distilled water at room temperature in a glass container until they were used for testing. The distilled water was changed periodically to inhibit bacterial growth. The samples were randomly divided into three groups – Group I, Group II and Group III. All the samples were bonded with Rely –a-bond.

Group I – samples were bonded with Clarity™ Brackets

Group II – samples were bonded with Luxi™ Brackets.

GroupIII – samples were bonded with Gemini™ Brackets

Each sample was embedded in a cylindrical acrylic block of Polymethyl methacrylate (PMMA) so that the coronal portion of the specimen was exposed. The crowns were oriented along the long axis of the blocks and were stored in an airtight container at room temperature.

The buccal surface of all the samples in Group I, II and III were polished with a mixture of water and fluoride free pumice using a rubber cup for one minute. The samples are then thoroughly rinsed with distilled water and dried with oil free compressed air.

The enamel surfaces of the teeth were conditioned with 37% phosphoric acid gel (Rely-a-bond etchant) using the conventional acid technique for 30 seconds. The surfaces were then rinsed thoroughly with distilled water for 60 seconds and dried with oil free compressed air for 20 seconds. Next the tooth surfaces and the mesh bases of the brackets to be bonded were coated with the bonding primer supplied with the kit. Bonding procedures were performed according to the manufacturer's instructions and stored for 24 hours prior to debonding procedures.

When placing the bracket on the tooth, it was placed in a sliding motion for forcing excess adhesive to the

Tabel I *Mean Shear bond Strength of Samples* Group I, II & III (MPa)

Samples	GROUP I (Clarity™)	GROUP II (Luxi™)	GROUP III (Gemini™)
Mean	13.086	12.693	12.676
Minimum	12.840	12.090	11.360
Maximum	13.410	13.200	13.200
Range	0.57	1.11	1.84
Std Deviation	0.214	0.511	0.691
Std Error	0.081	0.255	0.261

incisal edge of the bracket for easier clean up. Each bracket was subjected to 100 gm of force, and any excess bonding resin removed with a small scaler. The shear strength of bonded teeth was using an Instron Universal Testing Machine (UTM) Model No:1196. The sample testing was carried out using a sensitive load cell value of 5000 Newton. The technique of testing shear bond strength has been widely reported in the literature[25,26].

Each tooth was oriented with the testing device as a guide and held firmly between the lower cross head of the UTM, so that its labial surface would be parallel to the applied force during the shear bond strength tests. An occluso-gingival load was applied to the bracket that produced a shear force at the bracket-tooth interface with a flattened end steel rod attached to the upper cross head machine. A computer that was electronically connected with the UTM recorded the results of each test in Newton (N) at which the bond failure occurred. Shear bond strengths were measured a crosshead speed of 5mm/min.

Results

The values obtained on testing the shear bond strength of samples in Group I, Group II and Group III in Newtons were converted into Mega Pascal, tabulated and routine statistical analysis like Mean, Maximum and Minimum, Range, Standard deviation and Standard error were calculated for each group and compared.

Statistical analysis to evaluate the significance of the difference between the means of the three groups was carried out by applying the paired student't' test. While Group III and Group II brackets did not show any statistical significant difference in shear bond strength, when they were compared to Group, there was statistically significant difference at <.01 level

The base and surface of the enamel were examined to evaluate the fracture site. While 75% of Group II

Tabel II *Paired Student 't' Test of Significance* Between Means of Shear bond Strength of

	CLARITY™	LUXI™	GEMINI™
CLARITY™	-		
LUXI™	*1.601	-	
GEMINI™	*1.826	-1.800	-

*Significant P value = <.01

Tabel III *Adhesive Remnant Index*

Brackets	enamel - adhesive	adhesive	brackets - adhesive
CLARITY™	20	-	50
LUXI™	40	10	20
GEMINI™	5	35	30

brackets fractured at the enamel- adhesive bracket interface 71.42% of Group I brackets failed at similar site while the rest at the bracket adhesive interface. 57.14% of Group III brackets failed at the adhesive interface with the remaining at bracket adhesive interface.

Discussion

The quest for increasing bond strength of aesthetic appliances has led to many innovative designs. Basically ceramic brackets use chemical, mechanical or a combination of both for retention. The major problem in debonding ceramic brackets is the enamel damage. The forces applied during debonding of brackets are influenced by factors that include bracket retention mechanism, method of debonding, method of enamel conditioning and the composition of adhesive[2,11,18,23].

In the present study in order to minimize the variables that can influence the debonding characteristics all conditions for bonding were kept normal for the three sample groups. The method used for estimation of shear bond strength has been widely reported in the literature[22,26]. An occluso gingival shearing force was applied to the bracket at the bracket – tooth interface with a flatten ended steel rod attached to the cross head of Instron Universal Testing Machine Model No:1196. A computer that was electronically connected with the Instron University Testing Machine recorded the results of each test on a graphic plotter in Newton. The crosshead speed was fixed at 5mm/min.

In the current study the mean shear bond strength of all the three bracket groups were in the range of 12.6 to 13.1 with Group I demonstrating the highest with Group II being the least.

While there was no statistically significant difference between shear bond strength of Group of II and III, both these groups showed a statistically significant difference when compared to Group I at the level of <.01.

The mean bond strength value of Clarity™ brackets in the present study was in the range of 13.08+or – 0.08, which is higher than the values obtained by Bishara[24] but is similar to the value obtained by Mundstock[23]. It is well above the recommended values of Reynolds[14] of 5-7MPa.The statistically significant difference in the mean shear bond strength between the two ceramic brackets groups is contrary to the previous studies by Bishara[24] and Mundstock[23].

The mean shear bond strength of stainless steel inserted ceramic brackets in the current study was found to be higher than that observed in a previous study by Bishara[22] where the shear bond strength of stainless steel inserted ceramic bracket was compared to that of stainless steel bracket. But in a subsequent study comparing the same ceramic bracket with that of another version of ceramic bracket a higher value was reported for the stainless steel inserted bracket. However the bond strength values found in the present study for all the three bracket systems are above the minimal force levels suggested by Reynolds[14] for a successful clinical bonding. Hence there is no significant difference to be obtained in using either of the metal inserted ceramic brackets.

On examining the enamel surfaces and bracket surfaces of the debonded samples it was found that while the 75% of Group II brackets failed at enamel adhesive interface 71.42% in Group I brackets failed at the same site. 57.14% of Group III brackets failed at adhesive interface while the rest failed at the bracket adhesive interface. The site of failure of the stainless steel inserted ceramic brackets according to this study is in contrary to that of earlier studies[23,24]

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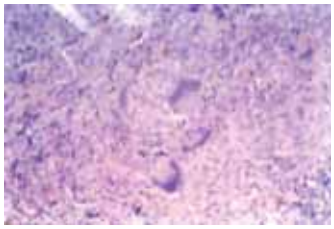

(1) Patient 38yrs, reported for a painful, slow growing ulceroproliferative lesion on the right commissure since last four months. It started as an ulcer and gradually reached the present size. Patient was treated with 3 types of antibiotics, but did not respond to them. A biopsy was taken and the histopathological appearance confirmed the diagnosis.

(a) Sqamous cell carcinoma
(b) Secondary tuberculous ulcer
(c) Fungal granuloma (d) Rhinosporidiosis

(2) A 44 yrs old patient complaint of a painless slow growing swelling in the lingual aspect of the mandibular incisors reported to OPD. The swelling was painless and hard on palpation. Patient has history of hit by a cricket ball in the chin when he was 9yrs. The teeth in the region are caries free and vital. X-ray is suggestive of diagnosis.

(a) Periapical cyst (b) Periodontal cyst
(c) Ameloblastoma (d) Traumatic bone cyst

(3) A 13 year old child had chronic nasal block for a long time. He noticed bleeding from the right n ostril since last 2 years. A granulomatous growth could be forced out of the nostril. The child could take the mass back to the nose when inhaled forcefully.

(a) Rhinosporidiosis (b) Fungal granuloma
(c) Wegener's granulomatosis (d) Sarcoidosis

(4) Male 53years noticed gradual loss of facial and eyebrows since last 3 years. He also had parasthesia of skin of face, chest and abdomen. He had multiple papular and nodular lesions of the lips. The painless nodules ruptured and healed with scarring.

(a) Xanthelesmma (b) Lepromatous leprosy
(c) Lipoma (d) Sebaceous adenoma

(5) Patient noticed white discolouration of the lower lip 18 months back. The white macules gradually spread to upper lip and both buccal mucosa.

Patient had neither difficulty to tolerate spicy foods nor restriction of mouth opening. Patient had no skin lesions.

(a) Vitiligo
(b) Oral submucous fibrosis
(c) Xeroderma pigmentosum
(d) Leucoderma

(6) A female aged 18yrs came to the dental OP for enlargement of the gums. She had generalized enlargement of the marginal and attached gingiva and interdental papilla. Medical history showed that she was admitted to a hospital 9 months back with high fever and developed fits while in hospital. She was on 100 mg eptoin 3 times daily ever since

(a) Fibromatosis gingivae
(b) Leukemia
(c) Dilantin hyperplasia
(d) Neurofibromatosis gingivae

Ans. 1-b, 2-d, 3-a, 4-b, 5-d, 6-c.

Secretary's report and association news

Friends,

My tenure as secretary of IDA Kerala State is reaching the fag end. This might be my last chance to communicate with you through KDJ. Its been quite a journey these three years and we held together through some stormy seas. Thanks to the tremendous support from the Presidents in my tenure the sincere Dr. Samuel K. Ninan, perfectionist Dr. Santhosh Sreedhar and the strong willed Dr.Raveendranath M. We had taken compassionate commitments to the poor and needy, be it palliative care projects, free denture projects, support to hemophiliac patients or any other social cause. We had taken strong proactive measures to protect our practice and profession. In fact we had bring about a change-that I promised 3 years back. All because of you, you stood right beside me in all my wishes and I wont forget. Adieu, my friend It was wonderful working with you and I will cherish those memories for ever.

Dr. Shibu Rajagopal
Hon. Secretary, IDA Kerala State

IDA State Office bearers meeting with Oommen Chandy, the Chief Minister of Kerala

IDA State Office bearers meeting with V.S. Sivakumar, the Health Minister of Kerala

Dr Lin Kovoor
CDE Chairman, IDA Kerala State

CDE Report

As we are going to the fag end of this years IDA activities, we have conducted almost 85 CDE programmes which includes the branch level & inter branch, Six State level. The high light of the 4th quadrant of the year was the two state CDE programmes

5th Kerala State CDE was hosted by IDA Thiruvalla branch on 19th August 2012 at club 7.The topic for the CDE was Failure in Fixed Prosthodontist. Dr Lin Kovoor welcomed the gathering. Dr Philip sec. IDA Thiruvalla delivered vote of thanks. The program was inaugurated by Dr. Munirathinam Naidu renowned Prosthodontist from Chennai by lighting the lamp. The faculty was Dr. Munirathinam Naidu. Around 70 members attended.

6th IDA Kerala State Llevel CDE program hosted by IDA Mavelikara Branch

6th State level CDE program was hosted by IDA Mavelikara branch on Sunday 16th September 2012 at the Royale Gardens, Haripad. The topic was Aesthetics in indirect Dentistry and the faculty was Dr.Burzin Khan Prosthodontist from Mumbai. State Secretary Dr Shibu Rajagopal gave felicitation. Dr. Sunil Mathew president welcomed the gathering. Dr. Lin Kovoor delivered vote of thanks. Around 90 participants has attended the program.Colgate has sponsored the programme.

Dr Civy V Pulayath
CDH Chairman, IDA Kerala State

CDH Report

Susmitham

As you know the prestigious program of Indian Dental Association, Kerala state- SUSMITHAM 2012 is in progress. Kerala state have the moral responsibility to be a part of this survey. Your support in this historic event is needed in the following ways.

1. Your active and sincere support in co-ordinating this program in your IDA local branch and the assembly constituencies in your area with the support of local leaders.
2. Your help in collecting data from minimum 10 samples in each age group (5,12,15,40,70,Years. Total 10x5=50) via you clinic, college, camp, public, neighborhood, family etc. and handing it over to your branch secretary. Kindly xerox the extra data sheet needed. Bulk quantities will be sent on request. Contact for details).
3. Kindly READ the oral survey booklet send to you (also available at www.idakerala.com) COMPLETELY and guide others also in filling the data sheet properly.

Cultural Programme report

Dr. K. N. Thomas
Chairman, Cultural and Entertainment

Chilamboli 2012

Inter Branch Cultural Competition "Chilamboli 12" held at Mascot Paradise, Kannur on Sunday 8th July 2012.

Dr. Rathan U. Kelkar, IAS, District Collector inaugurated the function by lighting the traditional lamp. Mr. Salim Ahammed, National Award Winning Film Director and Mr. T.N. Prakash renowned writer and member of Kendra Sahithya Academy graced the occasion as Guests of Honour.

In connection with the inauguration, Chilamboli Theme Song C.D. was released by IDA Kerala State President Dr. Raveendranath, Lyrics written by Dr. Pratap Kumar (Past President of IDA Kerala State), directed by Dr. C.V. Ranjith (Cine Music Director) and sung by Cultural Chairman Dr. K.N. Thomas and Dr. C.V. Ranjith.

Eight branches of IDA Kerala State participated in the Cultural competition. Their positions were assessed by eminent judges. IDA wayanad got over all Championship. IDA North Malabar got second position.

Valedictory function and "Award eve" was conducted in a grand manner from 3 pm to 6 p.m. Nritha-Sangeeth Avishkaram of "Chilamboli Theme Song" was performed by dancers of IDA Kannur branch.

Sambritha Sunil Cine Star", Syanora renowned singer, National Award winner - Shyam graced the occasion. "Awards eve", was organised similar to "Asianet Awards nite". Later awards were distributed by Sambrita Sunil, State President, Dr. Raveendranath, State Secretary Dr. Shibu Rajagopal and State Cultural chairman Dr. K.N. Thomas

Website Report IDAKerala.com

Dr. Rajeev Simon K.
Website Chairman, IDA Kerala State.

IDAKERALA.COM the Largest Dental Portal of Kerala & Second Largest Dental website of the country. M.IDAKERALA.COM the first mobile version website in history of IDA.

Dear Friends,

I thank you all for your confidence and enormous support which enabled me to rise to your expectations. The successful journey of our website is continuing with heavy traffic of 7GB per month. At times we find difficulty in managing the traffic by switching servers to handle the bandwidth. But still we enjoy the tough times since we are able to provide uninterrupted service. I thank Dr. K. Nandakumar and his team for making a world class journal that is rich in content and good in production. It is this journal which plays a major role in the traffic of our website.

I hope that I am able to fulfil the vision of our State President and Hon.State Secretary.

ISP National President

Immediate Past President of IDA Kerala State, Prof. Dr. Santhosh Sreedhar, has been installed as the National President of Indian Society of Periodontology (ISP)during the 38th National Conference of ISP held on 13-10-12 at Simla.

WDC Report

Dr. Thaj.S.Prasad
Chairperson

wdc

Dr. Mercy Joji
Secretary

WDC State level CDE

Women's Dental Council, Trivandrum branch hosted state level CDE Programme of WDC Kerala state and installation of WDC Trivandrum 2012 on 6th May at Uday suites, Sanghumugham, Trivandrum. Dr. Justin Padamadan spoke on "Parenting" and painting competition for children was also conducted. Special package for WDC members at Uday Suites was a special attraction. WDC executive committee meeting was convened at the same Venue.

POSTER & PAMPHLET RELEASES

Public educational poster of WDC state office was released on 10th June at IMA house, Kaloor, Kochi. Pamphet release of WDC Kerala state was done in the 4th executive committee meeting of IDA Kerala state at Hotel Village, Mahe on 9th September.

PARTICIPATION IN CHILAMBOLI – 2012

The chairperson of WDC Kerala state, Dr. Thaj. S. Prasad performed the classical dance on 8th July at Mascot Paradise, near S.N.Park, Kannur.

WORLD ALZHEIMER'S MONTH CELEBRATION

The international chairman of Alzheimer's disease international (ADI), Dr. Jacob Roy.K and former Innerwheel club chairperson Mrs. Lilly Jacob Roy were honoured by WDC Kerala State on 30th September at dymentia care centre, Kottapady, Guruvayoor in connection with world Alzheimer's month celebrations.

REPORT PRESENTATIONS

WDC secretary Dr. Mercy Joji reported all the WDC programmes in all the executive committee meetings of IDA Kerala State. Chairperson Dr. Thaj. S. Prasad spoke on these occasions.

CONDOLENCE

WDC remarked condolence on the demise of Ms. Shera (Sister of WDC treasurer Dr. Shona Anil) and Dr. Mathew (Father of Dr. Yasmine Mammen).

COASTAL MALABAR BRANCH

IDA KERALA STATE CRICKET TOURNAMENT:

Our team parrticipated in the North zone Cricket Tournament held on 6th May 2012 at Kozhikode. We defeated IDA North Malabar and entered into the Semifinals which is to be held at Kollam.

On 27th May 2012 IDA Coastal Malabar Branch Team particip ated in the Semifinals of IDA Cricket tournament held at Kollam. Unfortunately we couldnt make it to finals.

IDA RCC NRHM ORAL CANCER WORKSHOP:

IDA Coastal Malabar Branch in association with RCC trivandrum and NRHM conducted a combined CDE-CDH programme on Oral cancer at Century international college of Dental Sciences, Kasaragod. The coordinator of the programme was Dr. Mahamood Moothedath. Faculties from RCC Trivandrum took classes. Dr. Babu Mathew lead the seminars.

CHILAMBOLI CULTURAL FEST: 8/07/2012

IDA Coastal Malabar Branch participated in the Chilamboli cultural fest conducted by IDA Kerala State at Kannur. We performed Dandhya, Skit and solo Dance by Miss.Sanjana Santhosh.

Dr.Sumitha P.R. was awarded second best female singer.

IV STATE LEVEL CDE PROGRAMME: 15/07/2012

IDA Coastal Malabar Branch hosted the IV State level CDE programme on 15th july 2012 at Hotel KK Residensy, Payyanur from 10 am to 4 pm.

The faculty was Dr.Sunil Rao, renowned Endodontist from Bangalore. In the morning session the topic of the CDE was Rotary endodontics. In the afternoon there was a Hands-on course around 25 members from kerala parcipated in the Hans-on course.

IDA Kerala State President Dr.M. Raveendranath inaugrated the function. IPP Dr.Santhosh Sreedhar felicitated. State CDE Chairman Dr.Lin.C.Kovoor welcomed the gathering. Our Presidenty Dr. Muhammed Aslam presided over the function, CDE Representative Dr.Pratap Pavithran intrduced the faculty and secretary Dr. Madhusoothanan A. V. proposed vote of thanks.

IFTHAR SANGAMAM AND FAMILY MEET: 29/07/2012

IDA Coastal Malabar Branch conducted Ifthar sangamam and a Family gettogether at Hotel Bamboofresh on 29th July 2012 at 6.50 pm.

After nombuthura Dr.Ahmed shafi and Dr. Mahamood moothedath spoke about the importance of Fasting.

ONAM CELEBRATIONS AND FAMILY GETTOGETHER: 2/09/2012

IDA Coastal malabar Branch celebrated Onam on 2nd september 2012 at 7:30 pm. At Madayippara and Madayi coop Bank auditorium, Pazhayangadi.

Members enjoyed the serene baeuty of Madayippara.

A "pookkalam" was arranged at the venue.Prof. B.Muhammed Ahammed, President, Kerala Folklore Academy was the chiefguest. There was fun games for the Children, Ladies and Gents.an 'onasadhya" also was arranged.

ATTINGAL BRANCH

TRI-MONTHLY REPORT (JULY-SEPT) 2012

5th BRANCH EXECUTIVE MEETING

The 5th branch executive meeting was conducted at Attingal Club, on 13th July, 7pm. The meeting decided to conduct our 3rd CDE programme of the year on 29th July at Technopark Club. All the convenors presented their reports. Secretary presented the previous meetings minutes. 18 members attended.

3rd INTER BRANCH CDE PROGRAMME

The 3rd CDE programme was held at Technopark Club, Kazhakoottam on 29th July, Sunday 9am to 3pm.The topic was Oral Lesions-Its Diagnosis and Management, by Dr Karthiga Kannan MDS.75 members participated.

6th BRANCH EXECUTIVE MEETING

The 6th branch executive meeting was held at Attingal Club on 20th August,7pm.The meeting proposed to conduct a CDE on sterilization and practice management immediately and entrusted CDE convenor to fix the speaker, date and venue. Meeting also discussed in detail about the cancellation of strike and current scenario of inspections in clinics by govt agencies.

4th STATE EXECUTIVE MEETING

All the state executive committee members of the branch, including State V.P Dr.Premjith and Rep to State Dr.Sudeep and Dr.Arun Roy attended the state executive meeting at Thalassery on 9th September, Sunday.

ONAM CELEBRATION

Onam was celebrated on 16th September, Sunday at Technopark Club. The programme was inaugurated by State Vice President Dr Premjith. Around 85 members with family and kids were present. Spouses and kids put a beautiful ATHAPOOKKALAM. Karaoke, Fun games and cultural programmes were arranged. Grand ONA SADYA was arranged to all. President Dr Abhilash announced that in connection with Onam, a charity programme is going to be conducted at an old age home in and around Attingal.

JOURNAL

The 2nd edition of IMPRESSIONS was released on September 25th Tuesday, at Mascot Hotel Trivandrum during a working committee meeting on recent clinic inspections and pollution control board registration.

4th INTER BRANCH CDE PROGRAMME

The 4th CDE programme was conducted at TechnoPark Club on 30th September,9am to 4pm.Topic was STERILISATION and PRACTICE MANAGEMENT by Dr Binoy Ambookkan MDS.82 members attended. State CDE convenor Dr Lin.C.Kovoor attended the programme. Other than Attingal branch members, members from IDA Trivandrum, Pathanamthitta,Mavelikkara,Karunagap ally, Kottarakkara, Alapuzha,Central Kerala Kottayam were present. A mini exhibition was arranged. Demo of Sterilisation equipments were done. Dental materials stalls were also present.

CHALAKUDY BRANCH

Third General Body meeting of IDA Chalakudy branch was held on 21st August, at Cosmos Club. Faculty for the Day was Dr. Rajeev, an Endodontist, and his topic was Endodontic Restorations, 27 memebrs were present for the General body meeting

KASARGOD BRANCH

An executive committee meeting was held on 23 /7/2012 at 6pm to discuss branch activities.

A general body meeting of our branch was held at IMA hall Kasaragod on 21/9/2012.Dr.Suresh Babu an eminent opthalmologist and a reputed motivational speaker delivered an enlightening lecture on "Enhancing Private Practice". The lecture was followed by an interactive session. The meeting was well attended and was followed by dinner.

MALAPPURAM BRANCH

Report of activities of ida malappuram from July 1st - 28th October 2012

CDE:

On July 14th, 2012 CDE-CDH NRHM & Regional cancer center Trivandrum organized a workshop on 'Role of Dental Surgeons in Prevention & control of Oral Cancer' at MES Dental college, Malaparamba.

On September 30th 2012, branch level CDE on Dental Laser by Dr.Joy Kurien was held at Malabar Tower, Manjeri this interactive & hands-on program was well appreciated, 23 members attended the program.

On October 21st, 2012 branch level & concluding Module of Practice Management CDE by Mr.Raghavan from Hyderabad Dr.Reddy's foundation for Health education (DRFHE) was at held KPM Residency, Perinthalmanna, this personality rejuvenating program with activities & exercise were attended by 15 members.

CDH:

CDH program as part of 'Snehapoorvam IDA' adoption of Pleasant Home-an Orphanage managed by Malabar Muslim Orphanage committee was held on September 16th, A dental camp for General public was held at GLPS Pullipadam on 16th of September. Dr.Philip Kaniyanthra, Dr.Muhsin, Dr.Anju & CDH Convenor Dr.Aneesh P.A.K. attended the program.

On 26th September 2012, a school dental health program & awareness program for general public was held in association with JCI Valanchery at V.P AUP school, Vendallor. Dr.Hisham, Dr.Mahesh & Dr.Deebu attended the program.

IDA Malappuram observed World WHITE CANE DAY on October 15th at Wandoor as part of 'Snehapoorvam IDA' in association with Kerala Blind School, Vellikkapatta. Program was started with White cane rally. Health awareness program & exhibition was held as part of this observation. Govt. Medical College Calicut, MES Dental college, Malaparamba & private eye hospital were exhibitors. Dental check up & screening camp was held as part of this program with helping hands from students from MES Dental college, Malaparamba who supported by Dr.Fazil & Dr.Aneesh.

Ladies wing program:

On September 30th 2012, a session on Cookery & culinary skills by Mrs.Renu Aniyan Thomas was held at Malabar Tower, Manjeri this was interactive, self involving program dentist as well as spouses. This session culminated with preparation of 3 different type dishes by ladies wing. Dr.Roopa Thomas chairwomen, Ladies wing co-ordinated the program

EID & ONAM celebrations: A family get-together was held on On September 30th 2012 at Malabar Tower, Manjeri 5p.m onwards soon after ladies wing program, which was marked by Dance program Ms.Anjana, Music & dance performance by Friends Troupe. 25 Families attended the program which ended with stupendous feast.

A press conference was held on 17th July at Press Club, Malappuram Attended by Dr.Joy Thomas President & Dr.Sameer.T.A secretary as part of State wide dental strike & IDA Malappuram initiative against Un-ethical practices by Corporates & Group practices.

Executive committee meetings:

7th Executive committee meeting held on 04-07-2012 8pm.onwards at Soorya Regency, Malappuram. 16 members attended.

2nd Emergency Executive committee meeting held on 23-7-2012 8pm.onwards at, Prasanth Residency, Malappuram.

8th Executive committee meeting held on 22-08-2012 8pm.onwards at President Dr.Joy Thomas Residence, Manjeri.

9th Executive committee meeting held on 30-09-2012 4pm.onwards at Malabar Tower, Manjeri.




MALABAR BRANCH

ACTIVITY REPORT FOR THE MONTH OF AUGUST

CDE programme

Topic-role of Dental Surgeons In Oral Cancer Detection
Venue-IDA Hall
Faculty-Team From RCC
Date-12.8.2012
In Association With- NRHM, RCC

Independence Day

Flag Hoisting At IDA Hall By Dr. Joseph CC
Prathyasha screening programme
Venue - IDA hall; date-19.8.2012
No.of pts-95

Activity report for september

CDE programme
Topic-Endodontic Failures
Venue - IDA hall; Attendence-60
Faculty - Dr.C.V. Pradeep
Date-23RD SEP
Interbranch CDE.

CDH Programmes

Dental Camp & Awareness Class
Association With - Kunnathupalam Residents Assn, Rotary Club of Calicut
No. of pts-50
Venue - Panchayath Hall, Kunnathupalam
Date - 30.9.2012
Website Inauguration
Date - 23.9.2012

ACTIVITY REPORT OF OCTOBER

Executive Meeting

Date - 4th Oct
Attendence - 20
Venue-IDA Hall

CDH Activity

Prathyasha Denture Delivery
Date - 7th Oct
No.of dentures - 50
Venue - IDA Hall

Dental Camp In Association With Rotary Club Of Calicut

Venue - Nallalam
Date - 7th Oct
No. of pts - 60

Dental Camp In Association With Residential Assn

Venue - Vatakara
No.of pts - 65
Date - 13th Oct

Dental Camp, Awareness Class In Association With Muthappan Trust

Venue- Mokavur, Clt
Date - 14th Oct
No.of pts - 80

Branch Shuttle Tournament

Venue - Police Club, Calicut
Date - 7th Oct

KOLLAM BRANCH

4th General body Meeting
Meeting was held at Ferns Hall Kollam on 22-07-2012 at 8.pm Total 21 members were present. In the meeting decided to cancel the Kerala state wide dental strike and also proposed the organising committee for the 2014 dental conference to be held at Kollam.

5th General body Meeting
Meeting was held at Hotel Ritz, Kollam on 07-09-2012 at 8.pm. Total 20 members were present. In the meeting members suggested to conduct more C.D.E programmes in the future.

6th Executive meeting
Meeting held at Fern's Hall on 18.08.2012 at 8 pm total 17 members participated in the meeting.

Discussed about Confernce organizing committee for the Kollam conference to be held at 2014. Also contributed Rs- 9300/- from the executive committee members and given to palliative care centre, Kollam

6th General body Meeting
Meeting was held at Ferns hall Kollam on 13-10-2012 at 8.pm. Total 20 members were present. In the meeting discussed about the action taken by the pollution control board. Also decided the organizing committee secretary for the 46th Dental conference to be held at Kollam on 2014.

7th executive Meeting
Meeting held at Hotel Ritz Kollam on 28-09-2012 8.pm. Total 18 members attended the meeting. Discussed about the state Executive committee meeting to be held at Kollam on November 2012. Also decided the venue for the same. Also discussed about the membership fee hike by the IDA head office and to send resolution to the IDA head office.

Second CDE
Second CDE of IDA Quilon Branch was held at Azeezia Dental College miyannur, Kollam on March 6 th 2012. There was students training programme and lecture for dentist, was taken by JCI zone president Mr. Nijoy. The CDE was inaugurated by Dr. Joseph Edward President IDA Quilon Branch. The CDE was Sponsored by colgate Palmolive Pvt Ltd.

Third CDE
Third CDE of IDA Quilon Branch was on 23rd June 2012 at Hotel vaidya, Residency Road, Kollam.Topic on 'Pediatric Dentistry in everyday practice' was taken by Dr. Alok Patel. The programme was in association with 3M and Colgate Palmolive Pvt Ltd.




CENTRAL KERALA KOTTAYAM BRANCH

July 2012

Doctor's Day celebration: Doctor's day was celebrated on July 1st at PTA Hall, Government Medical College, Kottayam. Dr. Tiji Thomas, Superintendent of Medical College Kottayam was the chief guest of the function. Prof. George Varghese, Principal of Government Dental College offered felicitation.

Executive Committee: 5th Executive Committee Meeting of IDA Central Kerala Kottayam was held on 11 July 2012 at Kottayam Club. 19 members were present for the meeting.

Family Get together: The third family get together of IDA CKK was held on 29th July at KGS club. Over 100 members attended the event where games, music, cooking class for ladies, gala banquet were conducted.

CDE: The third State level CDE programme of IDA Kerala state was held at PTA hall of Government Medical College Kottayam on 1st July 2012. The topic was Complete Dentures ~ Back to Basics. This whole day CDE was taken by Prof. Chandrasekharan Nair. Over a 100 members from various branches attended the CDE. A live demonstration of the procedures was also conducted.

The fifth CDE of our Branch was held on 29th of July at KGS hall, pullarikunnu. The topic Myofunctional appliances was taken by the faculty Dr. Raju Sunny MDS. 50 participants benefited from this short lecture.

August 2012

Oral Hygiene day: The branch celebrated oral hygiene day on 1st August 2012 in association with Innerwheel club of Vakathanam. President Dr. Aby delivered a speech to the members of IDA CKK and Innerwheel Club.

Executive Committee: The 6th Executive Committee Meeting of IDA Central Kerala Kottayam was held on 10th August 2012 at Orchid Residency. 22 members attended the meeting.

Independence Day: President Dr. Aby Jose hoisted flag at the Independence day celebrations held at Mar Baselios Public School, Devalokam, Kottayam on August 15th 2012.

September 2012

IDA CKK Accreditation of Dental Clinics - Certificates of Accreditation of Clinics of IDA Central Kerala Kottayam branch - were handed over to clinics which fulfilled the required norms on 8th September 2012.