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Contents

President's Message

Dr. Thomas K C

Dear colleagues,

Warm greetings from your President.

I am very happy to see that all branches are functioning exceptionally well and had conducted many CDE and CDH programmes.

The state office acknowledge the support rendered by Dr. Alias Thomas, President IDA Head Office. I also appreciate the excellent effort of our Secretary Dr. O.V. Sanal, CDE Convenor Dr. Deebu J Mathew, CDH Convenor Dr. Subhash Madhavan and editor Dr. K. Nandakumar.

Kuduos to IDA Valluvanad Branch for the Tribal Dental Clinic, Trivandrum Branch for Dentist Day, and Kodungallur Branch for free Dental Clinic. 30 branches had come under the flag of IDA Kerala State with the inauguration of IDA Thripunithara Branch. Special thanks to Dr. Shaji K. Joseph for the amicable settlement of Thalassery Branch matters and Dr. V. Vishwanath, Dr. Antony Thomas, Dr. K.N. Pratap and Dr. Mathai Joseph for their proper guidance and advices.

As I had mentioned in the previous issue messages, dentistry in Kerala is at a cross road. Government is planning to give NOCs to few more dental colleges. There are already 14000 dental surgeons registered in Kerala Dental Council. In another 10 years we are expecting 21000 dental surgeons exclusively from Kerala and the total will be 35000. And around the same number of Keralites will be graduating from other parts of country too. And hence there will be 1000s of unemployed doctors within a few years. So we have to discuss in detail about these future threats. We have to give pressure tactics to the Government as well as have to create awareness among the public regarding the future of our profession.

Many of the private colleges are not maintaining proper standards and are not giving proper salary to the teaching faculty. This has to be changed.

IDA Kerala State branch will be implementing clinical standardisation to maintain the quality of dental treatments. Before concluding let me express my deep gratitude to all the office bearers and members for all your valuable opinion in order to safeguard our profession.

Thanking you,

With regards,

Dr. Thomas K C
President, IDA Kerala State.

Secretary's Report

Dr. O.V. Sanal

Dear colleagues,

Greetings from IDA Kerala state

First four months of this IDA year got over fastly. We had lot of activities all these days. Every branch conducting their regular programmes like executive meeting,general body, CDE programmes and CDH activities in a marvellous way. Almost all the branches are sending their reports in regular time. But unfortunately some branches not at all interested to do the activities or sending the reports. Anyway I am requesting them also to send their reports in time.

President Dr K C Thomas and his team of office bearers working hard to solve all the problems in our profession related to government authorities. Even though we are not hundred percent success, we succeeded to convince authorities about the problems we are facing in the profession now. Expecting a favourable decision from the state government towards the issues like sanctioning of new colleges and pollution control board decisions about biomedical waste disposal. Both the problems are very crucial to our profession especially to the new members and the private practitioners.

All the branch and state activities are going on very smoothly. The second list of membership send to head office with in stipulated time. Our state CDH wing is very active. All the branches celebrated March 6th as Dentist Day with different programmes. IDA Kerala state observed March 1st to 6th as awareness week. On April 11th onwards under CDH wing of Kerala state in association with IDA Kochi, Tripunithara, Malanad, Nedumbassery and Kodungallore conducted a mega awareness programme for children at little town, Lullu mall, Koch. It was inaugurated by cine artist Ms Kavya Madhavan in presence of Dr Alias Thomas our national president. The awareness programme will conclude on 31st May. It was a good Public Relations programme and well appreciated by everyone. Congratulations to Dr Subash Madhavan CDH chairman, Dr Ciju Paulose, Dr Balu Soman, Dr Kunal Viswam, Dr Jobby, Dr Subash and the back bone of the programme Dr Alias Thomas, national president

Our first state level CDE programme will be held on 24th May at Malappuram. Zonal vise cricket tournament started in three parts of Kerala. The first one is at Manjeri on 10th May.

Our prestigious students conference will be held on 15th, 16th and 17th May at Pushpagiri Dental college Thiruvalla. A vast arrangements are made to conduct the programme in a beautiful manner. All the wishes to central Kerala branch and the coordinator Dr Eapen Thomas.

No tobacco day will be observed jointly by IDA Kerala state, Coastal Malabar and North Malabar on 31st May.

I appreciate all the members who actively involved in the programme and expressing my deep gratitude for the support

Yours faithfully

Dr. O.V. Sanal
Hon. Secretary, IDA Kerala State.

Editorial

Dr. K. Nandakumar

Arise and awake

Twenty years ago, passing the SSLC examination in the state of Kerala was considered as a great feat because it made a youngster competent on basic and useful life skills. Both parents and students were happy because to some extent the future was ensured and a government job could be successfully carried out with the acquired competency. What is the present status of the SSLC examination? Barely a few thousands fail. The passed candidates, though become eligible for higher studies or for a job are in fact not competent enough to write a sentence without mistake in any of the languages he has learned to pass the examination. This time the political leadership which wanted to take some mileage out of the high pass percentage sulked after observing the people's response. The thick skinned policy makers and the irresponsible officials including the teachers kept a criminal silence on this matter. For what purpose the government conducts such an examination fooling the entire population and destroying the future of our youngsters. People from all walks of life have started lamenting the poor state of affairs.

An incompetent SSLC qualified person may not damage the fabric of the society in a higher proportion in the near future. But an incompetent dental or medical professional can damage the health of the society in disastrous proportions. Our system allows incompetent students to gain a seat in a professional college if the parent is blessed with massive wealth acquired rightfully or otherwise. Medical and Dental professional courses also enjoy a high pass percentage even to the tune of 90% and above. Nobody seems to be aware of this fact. Private managements pressurize the teachers to give a pass to the students. The examiners and teachers are influenced or even terrorized to give a pass or high percentage of marks. Already the professionals are infested with incompetency and the society has lost its faith on doctors. The present condition is that if the patient is lucky, he will meet a good doctor otherwise the relatives can have a consolation that it is all fate.

I write this to caution the teachers of dentistry who happen to be examiners and urge them to be bold enough to carry out strict assessment because we have a responsibility to the society. While making a student pass ask yourself the question "when I am sick can I go to him for my treatment?"

Dr. K. Nandakumar
Editor, KDJ

CROSS SECTIONAL STUDY

Caregiver's Practices of Oral Health in Children with Cerebral Palsy in Trivandrum

*Sheela Sreedharan, ** Priyadarsini Geetha Raghuvaran

Abstract

The caregivers of children with cerebral palsy have a primary role in maintaining the oral health of their children, who have several general health problems, and poor dental health may further compromise their health status and social interaction. Thus the status of oral well being in such children, mirrors the ongoing efforts and practices of oral care by their caregivers. Henceforth, it becomes mandatory for the caregivers to perform the right oral health practices in their children with cerebral palsy for enhancing their oral health related quality of life.

The present research was a cross sectional study conducted across Department of Physical Medicine and Rehabilitation, Department of Pediatric Neurology and Child Development Centre, Medical College, Thiruvananthapuram city to assess the practices in caregivers using a structured questionnaire. The dmft/DMFT of the children and the existence of its correlation with caregivers" practices were assessed.

In this study 58.6 % of caregivers had a total practice score of 6-10 considered as average. The present study revealed a high dmft/ DMFT index of 6.0 leading to unmet dental needs of the children with cerebral palsy. The correlation between dmft/DMFT and practices of caregivers however was assessed as weak in this study.

Keywords: cerebral palsy, caregivers, treatment needs.

KDJ 2015 | Vol. 38 | No. 2 | Pg 75-78

► Introduction

Cerebral palsy is a term used to describe a group of disorders of movement, muscle tone, or other features that reflect abnormal control over motor function by the central nervous system control over motor function by the central nervous system. Cerebral palsy usually is classified according to the type and site of motor deficit as observed by Jancy E Pope.[1]

The etiology of cerebral palsy is very diverse and multifactorial. The injury to the developing brain may be prenatal, natal or postnatal. As much as 75% - 80% of the cases are due to prenatal injury with less than 10% being due to significant birth trauma or asphyxia according to Chitra Sankar and Nandini Mundkur.[2]

A number of studies have been conducted for the etiology, clinical spectrum and distribution of clinical types, but very few articles appear in the literature concerning the oral health practices and dental condition of cerebral palsy patients.

Associated problems are present in a majority (75%) of cases; of which mental retardation is the commonest (72.5%). The dental problems associated with suffering from cerebral palsy include carious teeth, periodontitis, malocclusion, and drooling. (Nallegowda et al)[3]

The present study was an effort to field basic information on oral health practices of caregivers of cerebral palsy children visiting a tertiary health care centre in Trivandrum and to determine the caries status of such children. Thus far, the lack of such proper oral practices might have hindered the development of a healthy dental habit. This information will assist policy makers, and others related to oral health care of these children, in designing effective oral health educational programs for the parents of these children, consequently leading to better oral health in these special children.

► Aims & objectives

To investigate the caregiver's practices of oral health in 3 to 12 year old children with cerebral palsy visiting a tertiary health care centre in Trivandrum and to determine the dmft/DMFT of these children and the presence of any correlation between them.

► Review of literature

A study of home interviews done by McCracken et al[4] reported the attitudes of 80 mothers' of mentally subnormal children towards dental treatment. In terms of tooth brushing, they didn't bother teaching or assisting their subnormal children and 57.3% of caregivers supervised their child's feeding while 80% of caregivers had the practice of washing the child's mouth after meals in their study.

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Table 1 Distribution of practices of health professionals in oral health care of children.

Oral health practices		N	Percentage %
Age up to which child was breast fed	Up to 6 months	21	28.0
	More than 6 months	54	72.0
Monitoring of oral hygiene by case giver	Twice daily	25	33.3
	Once daily	50	66.7
Type of oral hygiene aid	Tooth brush and paste	47	62.7
	Indigenious aid	28	37.3
Observe of use of dental floss	Have observed	19	25.3
	Have not observe	56	74.7

Table 2 Distribution of general oral health practices by caregivers in their children.

Practices of health professionals		N	Percentage %
Oral health evaluation by pediatrician	Have been examined	28	37.3
	Never been examined	47	62.7
Pediatricians referral to a dentist	Have referred to a dentist	20	26.7
	Have never referred to a dentist	55	73.3
Enquiry to pediatrician about oral health	Case giver has asked the doctor	17	22.7
	Case giver has not asked the doctor	58	77.3
Dental consultation of the child	Has been to a dentist	22	29.3
	Has never been to a dentist	53	70.7
Dental treatment undergone by the child	Has undergone treatment	20	26.7
	No treatment taken	55	73.3

Kavanagh[5] stressed the importance of assisted brushing for the child with cerebral palsy.

The data from the survey by Shaboodien Shabier Ibrahim[6] showed that 5 years old children in Hong Kong had an average of 2.9% carious teeth. In addition 72% of the children had never visited a dentist, only 8% had a dental check-up and 2.5% had never brushed their teeth

Petersen PE, Danila I et al[7] in their study assessed that significant proportion of the mothers knew about the causal factors in dental caries; however, most of the mothers were aware of the importance of tooth brushing.

According to Al-Dlaigan, Smith AJ and Shaw[8], it was important for parents to know that the children with cerebral palsy were exposed to additional risks such as compromised oral hygiene due to poor neuromuscular coordination, inadequate intellectual development, and use of sweetened foods and medicines.

Caregivers reported that 43.8% of individuals with SHCN were able to independently brush their teeth, while 29.5% were not capable of independent brushing in a study of caregivers' perceived comfort regarding oral care delivery in group homes by Kelli J. Jobman, Karin Weber-Gasparoni.[9]

In general, sociodemographic factors play a pivotal role in the oral health practices of caregivers of special care children. Children from low-income families experience the greatest amount of oral disease, and the most frequent use of dental services for pain relief. Yet these children have the fewest overall dental visits. The twin disparities of poor oral health and lack of dental care are most evident among low-income preschool children according to Edelstein et al.[10]

► Methodology

The cross sectional study was conducted at the settings of Department of Physical Medicine and Rehabilitation, Department of Pediatric Neurology, Sree Avittam Thirunal Hospital, Thiruvananthapuram, Child Development Centre (CDC), Government Medical College, Thiruvananthapuram. Caregivers of children with cerebral palsy of 3 to 12 age group attending the outpatient and inpatient departments were the sampling units. Sample size was estimated to be 75. The following details were asked to know various practices in the following domain:

- Oral hygiene and feeding practices of the child and caregiver monitoring of same.
- Role of health professionals in oral health education, motivation and dental care as reported by caregiver.

Fig 1 Graph depicting percentage distribution of practices of caregivers in monitoring their child's feeding habits and oral care after feeding.

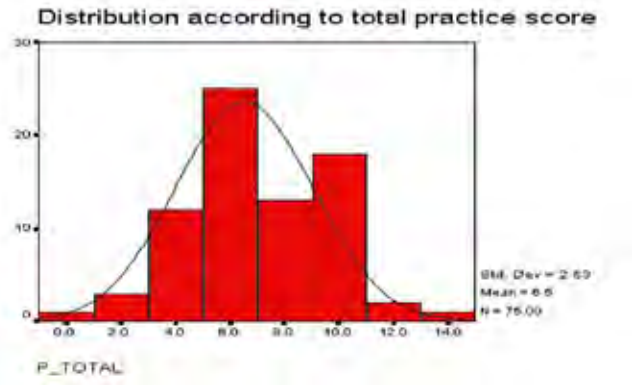

Fig 2 Bar diagram showing distribution according to total practices.

Questions pertaining to each domain were asked and more than one choice could be marked. Each correct response was given a score '1' and incorrect response as '0'. For questions carrying more than one correct response, total score[1] was divided by number of right responses, to ensure that sum of scores for a question does not exceed '1'.

The caries index was obtained by the sum of the dmft and DMFT scores. The dmft/DMFT was categorized according to the severity of dental caries, based on the previously proposed scores by WHO (0 = caries free, 1-2 = low severity, 3-4 = moderate severity, ≥ 5 high severity)

► Results

The results regarding performed and reported practices of caregivers are tabulated as follows:

In the sample of 75 children with cerebral palsy, dmft / DMFT varied from a score of 2 to 17 with 50% of the sample with a dmft / DMFT score of 6. The correlation between dmft/DMFT and practices of caregivers and was assessed as poor correlation in this study [r=0.112].

► Discussion

Caregivers with low expectations regarding maintenance of their child's oral health paves way to a poor oral health related quality of life. In the present study, taking into consideration the high literacy rate of Keralites, the oral health practice domain of caregivers of children with cerebral palsy were assessed as studies related to same in Keralite population were limited.

The total practice score was 15. It was estimated from the study that 37.3% of caregivers had a PTOTAL of <6 hence considered as just poor, 58.6 % had a PTOTAL score of 6-10 considered as average, and PTOTAL > 10 for 4% of the caregivers were considered good practices. Maximum score recorded in the study was 13 and minimum 0. Hence from the relevant study, it was inferred that caregivers had average practices, suggesting a call for reinforcement of same.

Children with cerebral palsy have compromised oral health status owing to their poor oromuscular coordination in proper swallowing and clearance of food debri henceforth assessment of dental caries status is a direct measure of oral hygiene practices.

In the sample of 75 children with cerebral palsy, dmft / DMFT varied from a score of 2 to 17 with 50% of the sample with a high dmft / DMFT score of 6.

Other studies observed an average calculated deft and DMFT = 3.0 according to Chandna et al[11] and dmft /DMFT index = 2.06 by Jenny Abanto, Thiago S et al[12]. In a study by Alhammad NS, Wyne AH et al,[13] the mean DMFS ranged from 18.8 to 23.4. In a study on thirty four non-institutionalized children in the age group of 7-12 years having cerebral palsy, it was found that children with cerebral palsy had higher deft scores than that of normal children.[14]

The correlation between dmft and practices of caregivers and was assessed as poor correlation in this study [r=0.112]. However, Saied-Moallemi al[15] correlated oral better practice scores of mothers were associated with children's sound dentition and vice versa.

The current study also looked into the practice of pediatricians' role in referral to a dentist, the timing of which affects the oral health related quality of life of the children with cerebral palsy. Pediatricians are ideal front-line providers who can detect oral health issues and begin the process of care and prevention and hence was included as a variable in this study to assess the same. Results from a national survey by AAP revealed that "90% of pediatricians said that they should examine the patient's teeth for caries and educate families about preventive oral health. However, in practice, only 54% of pediatricians reported examining the teeth of

more than half of their 0- to 3-year-old patients. Instructional training to pediatricians by hands on training by pediatric dentists improved overall skills of oral examination.[16] Only 37.3% of children's caregivers reported of the practice of oral health examination by pediatricians in the current study which highlights the need to bridge the gap, contrary to studies that reported elevated rate of referrals.[17]

Children with cerebral palsy, autism, developmental delay, and Down syndrome had more aversions to dental treatment, more treatment complications posed by their medical conditions, and more difficulty finding a dentist willing to provide care.[18]

Children were referred to a pedodontist by pediatrician only in 26.7% of cases in the current study and only 2.7 % of the caregivers were educated by their pediatricians which calls for further probe into the matter.

► Conclusion

Children with cerebral palsy have gross motor and fine motor deficits that prevent them from being totally responsible for their own oral health care, hence this study emphasized the importance of the caregivers with whom they have daily contact. If these support persons have positive practices in dental health care, then they will be in a position to provide modelling resulting in improved oral health status for their children.

In this cross sectional study, caregivers and their children with cerebral palsy of 3 to 12 age group were analysed to obtain the following inferences on oral health practices, dmft/DMFT as well as treatment needs of their children:

- ✧ 58.6 % (44) of caregivers had average practices.
- ✧ high dmft index = 6.0.
- ✧ Poor correlation between dmft and practices of caregivers.

Following were the limitations of this study:

This was a cross-sectional study and focused only on the children attending a tertiary health care centre and due to the difficulty in gathering adequate sample size, the results cannot be generalized to all. A possible limitation of this study was the difficulty in accessing all the cerebral palsy clinics in the city thus resulted in a convenience sample.

Recommendations

- ✓ Importance of oral health care practices in children with cerebral palsy should be emphasized to caregivers by different educational strategies adopted.
- ✓ Access to pedodontists should be improved, and referral mechanisms to special child development homes have to be established. Studies evaluating the most cost effective method must be undertaken as there is a dearth of studies in this area.
- ✓ Dental health awareness through pamphlets should be on a door to door basis.

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CLINICAL STUDY

Relic Demystified

* Subash D, ** Shoba K., *** Shibu Aman

Abstract

Aim: To describe a hybrid technique of canal preparation using sonic and Ni-Ti rotary instruments

Summary: In this technique, the canal is negotiated to the working length with a size 15 hand file. Then, the canal preparation is continued with Sonic instrumentation followed by its finishing with F2/F3 ProTaper instrument used in a rotary fashion. In larger canals, the use of additional hand files may be required to complete the apical enlargement.

Conclusion: The sonic instruments and the Protaper when used individually has a few setbacks but the 'duo' when applied in 'unison' gives positive effect.

Keywords: Sonic; Ultrasonic; Hybrid Technique; Protaper; cleaning and shaping

KDJ 2015 | Vol. 38 | No. 2 | Pg 79-81

► Introduction:

Our endodontic axiom comprises of obliging access cavity preparation, thorough cleaning and shaping, and then hermetic seal with obturation. In this cleaning and shaping of the root canal system are the principle steps necessary for successful root canal treatment. [1]

According to an old and famous endodontic axiom, what is removed from the root canal is more important than what is placed inside.[2]

Effective cleaning and shaping of the root canal is essential for achieving biological and mechanical objectives of root canal treatment. The objectives are to remove all the pulp tissue, bacteria and their by-products whilst providing adequate canal shape to fill the canal. [3]

The root canal system is a complex structure. Keeping in mind the predominant role of micro-organisms in producing pulpal and periapicalpathosis, endodontic treatment has aimed at the complete elimination of micro-organisms from the root canals. But, the complexity of the canal anatomy makes it very difficult to efficiently clean and seal all ramifications of the root canal system. In spite of wide variety of instrumentation technique, bacteria still survive in areas that are not accessible to routine instrumentation.

Currently, no single instrumentation technique guarantees 100% disinfection. Sonics, though not popular these days is one such system, which gave good emphasis on cleaning the root canals. Modern day rotary instruments, stress on shaping rather than cleaning, which is achieved most often by alternative methods.

Endosonics was introduced to endodontic by Richmond in 1957. Sonics system were different from ultrasonic, in which sonic work in arbitrary range at much lower frequencies (1- 8 khz). Like the air rotor handpiece, it attaches to the regular airline at a pressure of 0.4 MPa. The air pressure can be varied with an adjustable ring on the handpiece(Fig. 1) to give an oscillatory range of 1,500 to 3,000 cycles per second. Distilled water irrigant (coolant) is delivered into the preparation from the handpiece.

Three choices of files(Fig.2) that are used with sonic handpiece are Rispisonic, developed by Dr. Retano Spina in Italy, Shapersonic, developed by Dr. J. M. Laurichesse in France,Triosonic, also called the Heliosonic and the Triocut File. The Rispisonic resembles the old rat-tail file. The Shapersonic resembles a husky barbed broach. Triosonic resembles a triple-helix Hedstroem file. All of these instruments have non-cutting safe ended tips. The Rispisonic has 8 cutting blades and the shapersonic has 16. The ISO size ranges from 15 to 40.

In early 90s Nickel Titanium rotary files were introduced with a new protocol called "Crown down technique" The rotary technique alone is not "the answer" to the removal of all infected tissue since any rotational file will perform only enlargement as far as their radius reaches. On the contrary; the anatomy of many roots will have fins and lateral components (accessory canals), some of them with C shaped anatomy (oval roots) which require unique approach as a combination to rotary systems[4]

The purpose of this article is to describe a hybrid canal preparation technique using Sonic system followed by protaper system along with a few case reports.. This technique will facilitate shaping and also cleaning in one shot and finishing with protaper F2/F3 which helps in excellent hydraulics in turn resulting in well-sealed obturation.

* Postgraduate student, ** Prof. & Head of the department, *** Assisant Professor, Department of Conservative Dentistry & Endodontics, Government dental college, Kottyam, Kerala, India. • Corresponding Author: Dr Subash D. Email: dr.subash06@yahoo.co.in

► Case Reports

The cases were selected from patients reporting at conservative department, dental college Kottayam, indicated for root canal treatment.

The technique is easy and acceptable. It basically involves the use of stainless steel hand instrument, shaper sonic files and protaper files and the last instrument used depend on the tooth being instrumented.

► Technique

► Maxillary Anterior teeth:

After canal negotiation, working length is determined with k- files. Shaper sonic file no.40 is used for cleaning and shaping upto 1mm short of the working length. Apical enlargement is done with stainless steel k-files. Finishing completed with k – files(Fig. 3a & b).

► Mandibular anterior teeth:

After canal negotiation, working length is determined with k- files. Shaper sonic file no.30 is used for cleaning and shaping upto full working length. Finishing is done with the help of protaper F3 and obturation is completed with F3 gutta percha with sealer of clinician's choice(Fig. 4a & b).

► Posterior teeth:

Apical patency established with no.08 size file, then canal negotiated up to no.15 size file. Working length is determined. Shaper sonic file no.15 is used to full working length followed by no.20, no.25, then finishing is performed with protaper F2 in mesial canals of mandibular molars and buccal canals of maxillary molar, whereas, in the distal canal of mandibular molar and palatal canal of maxillary molar sonic file no.30 is used, followed by finishing with protaper F3 (Fig. 5a&b, 6a&b, 7a&b)

When it comes to speed of canal preparation with Sonic files, the last file is used at speed no.3, other files at no.2 for posterior teeth. For anterior teeth, the speed used is no.4.

Disinfection of canal accomplished with 5.25% sodium hypochlorite with sonic activation for 1 min after finishing and final rinse with 17% EDTA.

► Discussion:

Having lateral components of movement while the file is traveling towards the apical area (vertical) is what the Sonic technique offers to Endodontic treatment. This brings the efficiency in all steps of the treatment, filing with irrigation (to eliminate debris packing and blockage), distributing disinfecting

Fig 1

Fig 2

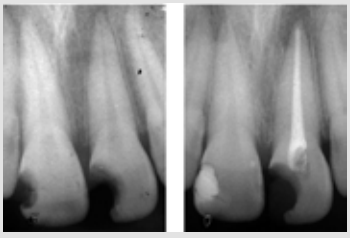

Fig 3a&b Maxillary central incisors

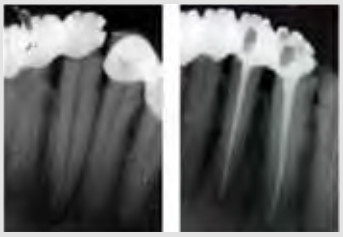

Fig 4a&b Mandibular lateral incisor and canine

Fig 5a&b Maxillary premolar

Fig 6a&b Maxillary molar

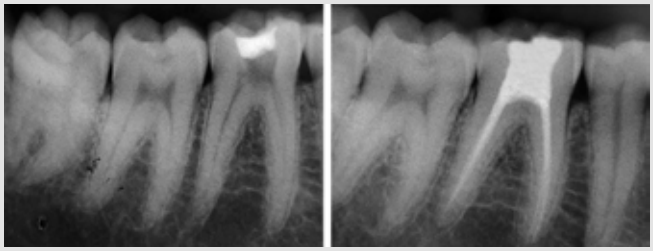

Fig 7a&b Mandibular molar

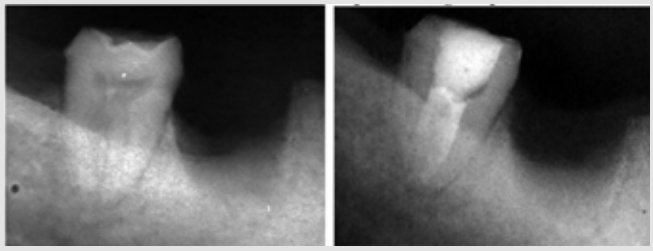

Fig 8a&b Mandibular molar with c-shaped canal configuration obturation with thermoplasticized gutta perch

agents into lateral canals, isthmus, delta formation and most importantly into fins and also while distribution of canal sealers where the lateral canals need to be accessed[5].

Among the sonic instruments (rispisonic, heliosonic, shapersonic), shaper sonic files preparation is less aggressive and also have tapered preparation[6], rispisonic is more aggressive, whilst the heliosonic is particularly ineffective, this is the reason shaper sonic files chosen for preparation. Sonic instruments, mechanism of action is through cavitation and acoustic streaming of irrigant present in the canal. The oscillatory pattern of sonic file oscillated in air,is with a large elliptical motion of the tip. However, when the file is loaded inside the canal, the oscillatory motion changed to a longitudinal oscillation. This oscillatory pattern was a particularly efficient form of vibration for the preparation of root canals during endodontic therapy[7]. During preparation there is continuous flow of irrigating solution (distilled water), which removes debris and also helps in cavitational effect for preparation of the canals.

Lumley et al suggest clinical technique should be modified with respect to matching root canal anatomy and direction of file oscillation wherever possible. He gave three preparation techniques, which was similar to circumferential filing[8]. In standard sonic technique after preparation, the canal is obturated with lateral or vertical compaction. But the problem with sonic preparation is the inability of the files to shape the apical part of the canal, mainly pertaining to its non-cutting tips and also files tend to produce aberrations, longitudinal and transverse grooves. So, in the present technique Protaper finishing files were used after sonic preparation. Protaper files have variable taper and produce smooth walls, this is of extreme importance in the obturation phase. The gutta-percha cone will thus have intimate contact with the canal walls and the compacting forces will be exploited fully to three dimensionally fill the canal system[2,9].

In the present technique, the finishing file chosen was determined by last shaper sonic file. For eg; if last shapersonic file used was no.20, the finishing protaper file chosen would be F1, F2 will be chosen if it was no.25 shapersonic file. On the other end, last shapersonic file is determined by the canal curvature and width.

To overcome some of the problems associated with rotary systems there is a need for a second device; which has lateral components of filing not only rotational, that also is irrigating and cleansing to the rest 2/3 of the canals, where the fins are continuing through out the whole canal system.

In this protocol MM 1500 Sonic hand piece is used as a conjunct tool to rotary system as it initially penetrate and establish selective straight line access (enlarging away from the danger zones) for coronal flaring and also utilize the irrigation and clean the canal walls before shaping with protaper files to obtain a smooth preparation

In one study[10], investigators suggested that both passive sonic or ultrasonic irrigation rendered root canals significantly cleaner than manual preparation. However, in comparison to sonic activation, ultrasonic irrigation produced significantly cleaner canals[10,11]. Other investigators discovered no significant difference in debridement between sonic or ultrasonic fluid activation inside a root canal. In our technique for efficient disinfection, 5.25% sodium hypochlorite was placed in the canal after finishing with protaper files and no.15 shaper sonic file used passively for activation of the irrigating solution.

Similar to the standard Ni-Ti rotary instrumentation techniques, one limitation for the application of the present technique is the presence of a sharp (non-gradual) canal curvature. In such a case, use of hand files prior to the use of sonic files is mandatory and also precurving might be necessary.

► Conclusion:

It is always safe to say that no one automated device will answer all needs to canal cleaning and shaping procedures. Hand instruments are required to negotiate and prepare canals no matter which device is used. Combining advantages of multiple techniques and utilization of right file and technique in the right portion of the canals is essential. Sonic cleansing especially in apical one-third, where there is more pulpal and inorganic debris, smear layer and high number of surface irregularities along with NiTi rotary shaping can be successively used.

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Oral rehabilitation of a young adult with amelogenesis imperfecta

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Abstract

Amelogenesis imperfecta is a hereditary condition where enamel formation is disturbed resulting in defects in matrix formation or mineralization. When all the teeth are severely affected rehabilitation with crowns, or fixed dental prosthesis are required. Treatment aims to prevent further decay, relieve pain, sensitivity and to preserve as much as remaining tooth tissue as possible. This helps to improve masticatory function, and appearance as this has great psychological impact on the patients confidence. This article describes rehabilitation of a young female who presented with a severe form of hypomature type of amelogenesis imperfecta. Metal ceramic crowns and fixed dental prosthesis were used for the rehabilitation.

KDJ 2015 | Vol. 38 | No. 2 | Pg 82-85

► Introduction

Amelogenesis imperfecta is an inherited disease that disturbs the formation of enamel. This enamel anomaly affects both primary and permanent dentition.[1] The disease involves only the ectodermal component of the tooth (ie enamel) while the mesodermal structure of tooth- dentin, cementum and pulp remain normal. Although amelogenesis imperfecta has been categorized into four broad groups primarily based on phenotype into hypoplastic, hypocalcified, hypomaturation and hypomaturation-hypoplastic types, at least fifteen subtypes of amelogenesis imperfecta exist when phenotype and mode of inheritance are considered[2,3,4]. Sex predilection varies according to the mode of inheritance.

The hypoplastic type is related to alternations in the organic enamel matrix which can cause white flecks, narrow horizontal bands, lines of pits, grooves and discoloration of the teeth varying from yellow to dark brown. The enamel appears to be hard and shiny but malformed. The hypocalcification type is a defect in the mineralization process. In this form the enamel is soft and friable and can be easily removed from dentin. Hypomaturation is abnormal occurrence in the final stages of the mineralization process. In this type, the enamel is harder, with a mottled opaque white to yellow-brown or red-brown colour. The hypomaturation –hypoplastic type is a rare condition, where taurodontism is reported in association with amelogenesis imperfecta.[4]

Amelogenesis imperfecta are of different types. According to Seow, common clinical problems of amelogenesis imperfecta patients regardless of subtype are tooth sensitivity, poor dental esthetics and decreased occlusal vertical dimension, although distinctive clinical features may be observed in each type.[5] Other dental features associated with amelogenesis imperfecta include enamel deficiencies, pulpal calcifications, taurodontism, root malformations, failed tooth eruption, impactions of permanent teeth, and congenitally missing teeth. Several reports have described an unusual malocclusion occurring in some patients with amelogenesis imperfecta characterized by failure of the maxillary and mandibular anterior teeth to meet in occlusion or open bite. This condition adversely influence the oral health and prosthetic treatment prognosis as it results in poor oral hygiene and mouth breathing with associated gingivitis and gingival hyperplasia[7].

A survey reported that the patients with amelogenesis inperfecta experience higher levels of social avoidance continued with reduced perceived quality of life and for them the treatment has a positive psychosocial impact[6]. Amelogenesis imperfecta shows autosomal dominant, autosomal recessive, sex – linked or sporadic inheritance pattern.[7] The exact incidence of amelogenisis imperfecta is uncertain. The prevalence varies from 1:700 to 1:140007,[8]. Diagnosis involves exclusion of extrinsic environmental factors, establishment of a likely inheritance pattern, recognition of phenotype, correlation with dates of tooth formation to exclude a chronological developmental disturbance, clinical and radiographic

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examination. The treatment plan is related to many factors including age, socioeconomic status, the type and severity of the disorder and its intraoral situation at the time treatment is planned.[9] This clinical report describes the sequenced treatment for a young adult patient with hypomature type of amelogenesis imperfecta.

► Case report

A twenty one year old female reported for the treatment of generalized discoloration and sensitivity of her teeth in the department of prosthodontics, Govt. Dental College, Kozhikode. A detailed medical, social,and dental history was obtained from the patient. The medical history was non contributory. The family history revealed that her elder sister also had a similar problem. Past dental history revealed that her primary teeth were also affected similarly and extraction of mandibular left first molar was done few years back due to dental caries. On intra oral examination, generalized yellowish brown discoloration of the teeth were found. (Fig. 1, 2, 3) The enamel layer was very thin and the teeth surface were dull and rough. The molars were more severely affected with loss of occlusal anatomy. Enamel pit defects were present in the anterior teeth. The exposed dentin was hypersensitive. Pit and fissure caries were present on all the four third molars, maxillary right and left first premolars. All the four third molars were erupted and were in occlusion with the opposite teeth. Functional angle class III dental relationships, anterior open bite and multiple diastemas were present. An orthopantomogram showed lack of differentiation between enamel and dentin and lose of contact points. The case was diagnosed as having a hypo mature type of amelogenesis imperfecta.

Different treatment plans were explained to the patient, which included orthodontic treatment with surgical intervention, porcelain laminate veneers for anterior teeth, and porcelain fused to metal restorations. The patient was not willing for orthodontic and surgical treatment owing to the time frame and laminate veneering because of questionable retention. So it was finalized to restore the teeth using porcelain fused to metal restorations. The treatment was carried out in a phased manner.

Preventive and restorative phase: Thorough oral prophylaxis was carried out and the patient was motivated on oral hygiene measures. All the four third molars, maxillary right and left premolars having pit and fissure caries were restored with light cured glass ionomer cement. (GC Fugi11 LC). Endodontic treatment was done on mandibular right first molar. As the clinical crown height of maxillary and mandibular first and second molars were inadequate crown lengthening procedure was carried out to develop adequate clinical crown height. Surgical periodontal therapy consisted of gingivectomy for maxillary and mandibular first and second molars. The prosthodontic phase of the treatment was begun after six weeks.

Fig 1

Fig 2

Fig 3

Fig 4

Fig 5

Fig 6

Fig 7

Fig 8

Complete mouth rehabilitation. Diagnostic casts were made and mounted in centric relation on a semi adjustable articulator (whip mix), using a face-bow transfer (Fig. 4) and an inter occlusal record. A diagnostic wax up was done in the articulated casts. (Fig. 5). The vertical dimension was not altered as there was adequate interocclussal space.

The teeth preparations were done in multiple appointments.. The posterior teeth preparations were done initially. Right upper and lower posterior teeth preparation was done except the third molars which remained as a stop to maintain vertical dimension. Provisional restorations were fabricated in tooth colored auto polymerizing acrylic resin by indirect technique, using the wax up as a guide and were cemented using noneugenol cement. (Oratemp NE-Prevest) This was followed by left upper and lower arch posterior teeth preparation except the third molars, and provisional restorations were given. After the posterior teeth were prepared and provisionalised, without altering the vertical dimension, the anterior teeth preparations were done. The upper and lower anterior teeth preparations were done and provisional restorations were given. Mild occlusal discrepancies were corrected and the patient was made to use the provisional restorations for another six weeks. This period was uneventful and the patient was comfortable with the occlusion.

Gingival retraction was done using non medicated gingival retraction cord (Knit trax 000) and complete arch impressions were made using poly vinyl siloxane impression material (Honogum-DMD Germany) with stock trays. The double step putty wash technique was used. The bite registration was done using bite registration paste (Virtual.Ivoclar Vivadent) with the third molars acting as a vertical stop. Impressions were poured in type IV dental stone (Ultra Rock Kalabhai) and the master casts were made. Face bow transfer was done and the maxillary cast was mounted on to the articulator. Using the bite registration, mandibular cast was also mounted to the articulator in relation to the maxillary cast. Provisional restorations were cemented back using noneugenol cement (Oratemp NE-Prevest).

Metal copings were fabricated and tried intra-orally to check marginal fit and accuracy (Fig. 6,7,8,9). Porcelain fused to metal-full veneer individual crowns were fabricated for rehabilitation of all the prepared teeth. (Ivoclar Vivadent) A three unit fixed partial denture was made to replace the missing mandibular left first molar. A bisque trial was done for verification of the fit, contours and occlusion. The porcelain fused to metal crowns and the fixed partial denture were then glazed and cemented using glass ionomer luting cement

Fig 9

Fig 10

Fig 11

Fig 12

Fig 13

Fig 14

(Fugi type I Japan) (fig 10,11,12). The patient was instructed to take soft diet for 2 weeks. The patient reported back after two weeks and was very comfortable with the restorations.

Maintenance phase. The patient was explained the importance of maintaining the restored teeth. Oral hygiene instructions emphasizing the use of dental floss and proper brushing were given. Evaluations at one month interval were done and the patient did not experience tooth sensitivity or any other complication associated with the oral rehabilitation (Fig. 13, 14). The patient's aesthetic and functional expectations were also met.

► Discussion

The clinical features of amelogenesis imperfecta present special challenges to the treatment team. Although, the combination of orthognathic surgery and orthodontics was presented as part of the optimum treatment plan, to achieve the best occlusal result, the patient declined this option due to the significant financial burden and time factor. In this case the pre treatment class III molar relation of the posterior teeth were maintained.

A good treatment planning and patient communication was made before the commencement of the restoration treatment in this case of full month rehabilitation. The esthetic and functional rehabilitation was equally demanded by the patient. Since all the third molars were present in good periodontal condition, a treatment plan was formulated to utilize all teeth for masticatory function. All the initial carious lesions were restored and the deep carious tooth was endodontically treated. The missing tooth was restored with a fixed dental prosthesis, there by establishing occlusal contact of all teeth.

In the present case, the patients occlusal vertical dimension was not altered. By increasing the length of maxillary and mandibular anteriors the open bite was closed. The rehabilitation was done with porcelain fused metal full veneer crowns. This was considered as a better choice because of comparatively lower cost, minimal tooth preparation needed and better esthetics. Individual crowns were fabricated for all teeth, so that maximum possible natural tooth contacts and contours were replicated. It also helps the patient to maintain proper oral hygiene and reduces the risk of any future treatments involving individual tooth, without disturbing other tooth restorations.

► Conclusion

A clinical report was presented describing the treatment of a patient with a hypomature type of amelogenesis imperfecta.. The teeth were restored using porcelain fused to metal crowns and fixed dental prosthesis, to improve the esthetics, eliminate tooth sensitivity and restore function. Periodic review of the patient's oral hygiene and periodontal health has been stressed and maintained in order to achieve long term success.

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KDJ awarded 6th consecutive time Best National Journal award from Head Office, Mumbai.

Dr. K. Nanda Kumar, Editor KDJ receiving National Award for the BEST Editor from Dr Mahesh Verma, President, Dr Ashok Dhole, Hon Secretary General, IDA during 68th Indian Dental Conference held at Manpho Convention Centre, Bangaluru, February 2015, Dr Alias Thomas incoming President also present during the function. Editorial Board KDJ wishing all the members for their whole hearted support for getting this award.

Oral mucosal changes in geriatric patients

*Annapurna Doddamani, * Rakhee Sharma, **Charlotte Rodrigues,
***Vijay Kumar Jain, *** Soundarya. N, *** Shibani Shetty

Abstract

Objectives: To investigate the oral mucosal alterations in geriatric population

Materials and methods: An observational individualized case-control study was performed in patients of age 60 and above who reported to our institution.

Results: In a total of 100 individuals 65 individuals showed oral mucosal alteration and 35 individuals showed normal oral mucosa without any alterations. The most frequent variation observed was fissured tongue 34% followed by ulceration 14%, lingual varicosities 11%, leukoplakia 8%, atropic tongue 7%, denture stomatitis 5% and angular cheilitis 3%.

Conclusion: The oral mucosal alterations noted in the present study are considered important in evaluating the oral soft tissue in elderly individuals, which may have an important role in systemic disease. Close follow up and systemic evaluation is required in this population.

Key words: Alteration, Oral mucosa, Geriatrics, Fissured tongue

KDJ 2015 | Vol. 38 | No. 2 | Pg 86-88

Introduction

The oral mucosa performs comprehensive protective functions that are essential for maintaining the health. Changes in the protective function can significantly affect the general health of the patient. A decline in the protective functions of the oral mucosa could expose the aging individual to a variety of pathogens and chemicals that enter the oral cavity.[1] Since the geriatric population is the most rapidly growing segment of the population, a fact that will have dramatic implications for systemic and oral health in the future.[2] Oral health plays an important role in determining the quality of life in aged individuals. There is a growing interest in the oral health status of the elderly, as the size of this population is increasing worldwide.[3]

The most common causes of death in adults aged more than 65 years of age are cardiovascular diseases, cancer, cerebro-vascular diseases and pulmonary diseases. The most common chronic disease in elderly people is arthritis, hypertension, heart disease and diabetes mellitus. All these conditions have potential oral sequelae, particularly in older and more medically compromised adults. Older adults experience some sensory impairment such as olfactory and gustatory dysfunction, as well as oral motor problems including difficulty with mastication, speech and swallowing, which can directly affect oral health and impair dental treatment[2].

As the individual becomes older, there is a decrease in the protective function of the oral mucosa. The oral epithelium thins out and the synthesis of collagen in connective tissue decreases, hence there is decrease in tissue regeneration and lowered resistance to diseases.[4] Alteration in oral mucosa in these patients may be explained by the interaction of several factors, such as systemic condition, the ageing process, metabolic changes, and nutritional factors, side effects of medication taken for systemic conditions, use of tobacco and alcohol.[4]

Globally, poor oral health of elderly patients is evidenced by high levels of tooth loss, dental caries and periodontal disease, accompanied by other condition such as xerostomia, pre-malignant lesions and oral cancer. The prevalence of oral mucosal lesions affecting the oral mucosa is an important parameter in evaluating the oral health of the elderly.[4] Hence, a study was undertaken to evaluate the oral mucosal changes in patients more than 60 years of age.

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► Aims and objectives

To investigate the oral mucosal alterations in geriatric patients

► Materials and methods

An observational individualized case-control study was done at M.R. Ambedkar Dental College and Hospital, Bangalore. A total of 100 individuals of age 60 and above were selected.

Patients from both the gender and in an age group 60 and above were included in our study. Patients of age group less than 60 years were excluded.

A questionnaire was applied to gather data on the clinical history. Modified world health organization oral health assessment form (1997) was used to collect data of oral mucosal changes with location.

Diagnosis of various lesions likes atrophy of tongue, fissured tongue, candidiasis, angular chelitis, denture stomatitis, lichen planus, leukoplakia, ulcer (aphthous, traumatic) was done by clinical examination and the site of lesion was recorded.

► Results

The age of patients in this study varied between 60 and 80 years. A total of 100 patients were evaluated, among them 42% were women and 58% were men. According to their distribution of location 77% were from urban area, 11% were from semi urban and 12% were from rural areas (Graph I). The most common systemic disorders were diabetes mellitus (17%), hypertension (13%) and combination of diabetes mellitus and hypertension (9%). Complete denture wearers were 14% and 22% were removable partial denture wearers. Among the 100 elderly subjects, 65% showed oral mucosal alterations. However, 35% of these alterations were considered variations of normal mucosa. Based on their history 12% had the habit of chewing tobacco, 10% had smoking habit and 3% admitted to consumption of alcohol (Table I). Based on clinical examination seven different types of lesions were found, of which the most frequent were fissured tongue 34% of which 20 were males & 15 were females, ulcerations (Apthous, traumatic ulcer) 14%, lingual varicosities 11%, leukoplakia 8%, atropic tongue 7%, denture stomatitis 5% and angular cheilitis 3% (Graph II). Lesions were more commonly located on the tongue, followed by buccal mucosa, commissures, sulcus, alveolar ridges and gingiva (Graph III).

Habits	percentage
Tobacco chewing	12%
Smoking	10%
Alcohol	3%

Table I: Habit distribution in the study group

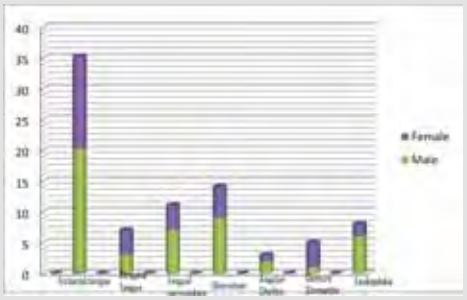
► Discussion

The study of oral mucosal abnormalities in elderly patients is important as age related changes in the oral mucosa and leads to diminished keratinization, dryness and thinning of the epithelium. These changes are further influenced by dietary or hormonal deficiencies. [6]

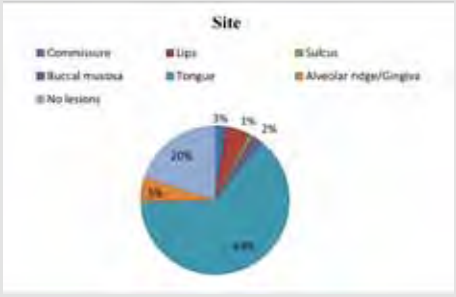
This study was carried out to evaluate the changes in the oral mucosa of geriatric individuals. The results showed that the most prevalent oral lesions were fissured tongue followed by ulceration, lingual varicosities, atrophic tongue, leukoplakia and denture related injuries.

Denture wearers showed different types of mucosal changes, out of 100 cases examined we noticed 17 subjects uses complete dentures and 13 subjects uses removable partial denture and the average age of the denture wearer was around 65 years. Among the denture wearers we noticed 3 cases of angular cheilitis which may be related to decreased vertical dimension and 5 cases showed denture stomatitis in the alveolar and palatal mucosa. The cause for these might be attributed to ill -fitting dentures, poor oral hygiene and overnight use of dentures.

Graph I: Population distribution according to location



Graph II: Oral Mucosal Conditions



Graph III: Site of lesion present

In the current study we observed 8 cases of leukoplakia, out of which 6 cases were seen in males and 2 cases in females. Detailed history revealed smoking habit in 4 male individuals, where as 1 individual had tobacco chewing habit in the form of gutka and one individual had the habit of both smoking and chewing tobacco. Out of 8 cases which were diagnosed as leukoplakia, two cases were seen in females and both had the history of tobacco chewing.

Similar study was conducted by Rabie et al,[7] who reported dry mouth as the most frequent oral lesion 42.1% followed by fissured tongue 29.9%, atropic glossitis 25.9% and sublingual varicosity 22.7%. Correa L[8] reported lingual varicosity to be 44.7%, denture stomatitis 18.2%, and papillary hyperplasia of palate 15.3% as the most common oral lesions. Maleki et al[9] conducted the study among private and government institutes of Tehran and reported that fissured tongue was the most prevalent lesions accounting for half the study population followed by candidiasis accounting for 18.4% and atropic glossitis 17.5%. Fissured tongue has been reported as one of the most common finding in several studies[7,8,9] which was in accordance to present study the cause for which may be due to aging and environmental factors like dry mouth.

It the present study the second most common lesion was ulcer which accounted for 14% of cases which was in accordance to study conducted by Cueto et al.[4] These were mainly observed in ill-fitting dentures. Other factors which may cause ulcers are stress, anxiety, lack of sleep, nutritional deficiency.

In a study conducted by A. Jainkittivong et al[1] indicated that oral leukoplakia occurred in 4.8% of the geriatric population. Occurrence of leukoplakia can be attributed to many factors which include tobacco usage, injury to oral mucosa from cheek biting, irritation from ill-fitting denture or defective restorations.

Most mucosal changes in the older age groups are related to the use of dentures. Trauma from dentures forms one of the major etiological factor.[4] Mikkonen et al[10] reported 50% of the lesions were associated with the denture wearers. Although in the present study it accounted for only 5% of the cases which differed from study conducted by Mikkonen et al. The oral mucosa of edentulous patients should be examined routinely for possible candidal infection. Inflammation of the denture-bearing mucosa is a typical form of denture stomatitis. Angular cheilitis is another infection frequently found among the elderly.[10]

Changes in the oral mucosa of geriatric patients can be attributed to various factors such as trauma, medications, oral and dental hygiene. The general decline in the immune status and altered hormonal levels of the geriatric patients may also influence the development of altered oral mucosal conditions which require constant evaluation. The results of the present study were in accordance with study conducted by Jainkittivong[1], Raquel et al[3], Pegah M et al.[13]

To conclude with advancing age, oral mucosa becomes more permeable to noxious agents and more vulnerable to mechanical damage. Some of the lesions in this population require thorough examinations which are usually neglected. The prevalence of lesions affecting oral mucosa is an important parameter in evaluating the oral health of elderly patients. Therefore, geriatric oral and dental care must be a part of geriatric medicine services to enhance the quality of life in this population.

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CASE REPORT

A technique for palatal rugae transfer during characterization of complete dentures

*Teny Fernandez, **K. Harshakumar, *** Vivek V. Nair, ****V. Prasanth

Abstract

Dentures should be mechanically functional, aesthetically pleasing and permit normal speech. The denture will appear more natural if characterization is introduced into it. Palatal rugae contours have a very important role in phonetics. The production of palato–lingual group of sound involves the contact between tongue and the palate. By customizing palatal contours of a maxillary denture to the tongue, the patient may easily adapt to the definitive denture contour, which in turn shortens or eliminates the adjustment period for the achievement of proper enunciation. This article describes a simple method of introducing the palatal rugae during characterization of complete denture.

Key words: Characterization, palatal rugae, rugae transfer

KDJ 2015 | Vol. 38 | No. 2 | Pg 89-91

Introduction

Characterization is a procedure in which the character or collective qualities of a person are introduced in the complete denture, either by modification of teeth or denture bases, to make it appear more natural for that particular person. Characterization of the complete denture is necessary to give the dentures a life like appearance, to make it appear more natural.[1]

Complete denture can be characterized by two basic methods:

1. Characterization by selection, arrangement and modification of artificial teeth.
2. Characterization by tinting the denture bases.[2]

Indications for characterization of denture base:

1. Patients with an active upper lip.
2. Patients with a prominent pre-maxillary process.
3. Actors, singers and others who may expose gum tissue areas during their performances.
4. The psychological acceptance of the dentures by the patient.[3]

As said by Frush and Fisher, "The environment of the teeth is as important as the tooth itself". Thus the two elements that must be considered in denture esthetics are teeth and their supporting denture base. Complete dentures must be esthetic as well as functional.[4] Hardy stated that, "To meet the esthetic needs of the denture patient, we should make the (denture) teeth look like the patient's natural teeth."[5] The palatal rugae play an important role in speech and also assist the forensic odontologist in the identification of a person[6]. Restoring patient's speech is an important goal in the complete denture fabrication. Most patients normally have the ability to adapt their speech in the presence of denture. However, there are persons whose speech are sensitive to the changed relationships with the dentures and have difficulty in accommodating. These patients require a tactile sense to orient the tongue. The lack of texture on the palatal portion of the complete denture can impede proper articulation. Adding palatal rugae to complete denture may help to alleviate speech problems. There are two concepts for phonetics, first is the obstruction to create turbulence in outgoing airstream and the second that there should be some landmark where the tongue, recognizes as the locale, where it produces the best particular sound[7]. This article describes the characterization and the method of transferring rugae from the patient to the denture.

Case report

A 55 year old male reported to the Department of Prosthodontics, Government Dental College, Trivandrum with a chief complaint of unsatisfactory esthetics and poor retention of his complete denture. He was a singer in drama performances and was unable to pronounce some syllables while using his old denture. He demanded a natural looking denture with which he could speak and sing properly.

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Steps in fabrication

1. Upper and lower preliminary impressions were made and custom trays for final impression were fabricated using auto polymerizing resin.
2. Extensions were checked in mouth. Over extensions were corrected, border molding done and impressions were made in medium body elastomeric impression material (Fig.1).
3. Wax bite rims were fabricated and jaw relation was recorded.
4. After teeth setting, root prominences were carved and stippling was done by applying pressure using the bristles of toothbrush against the surface of the wax. This produced a large number of depth holes in the wax. The wax was then slightly flamed so the holes became less pronounced and formed dimples (Fig. 2).
5. After try-in appointment, rugae pattern of the patient was recorded using putty impression material on a stock tray. The impression should record the rugae pattern on either side of the midline along with the prominent incisive papilla (Fig. 3).
6. The baseplate is then cut and removed from the rugae area of the try-in denture, and then one layer of wax (1.5mm) was added into the area and merged with the base plate.
7. Impression of the rugae was removed, cut to the dimensions and placed over the heat softened wax by carefully orienting the putty over the rugae area with incisive papilla as the guide (Fig. 4).
8. Sufficient pressure is applied on the putty so that the incisive papilla and rugae details are transferred to the softened wax (Fig. 5).
9. During investment procedure, a mix of die stone was placed over the surface of the teeth and rugae area to prevent the loss of fine details (Fig. 6).
10. After dewaxing, pigments (MP Sai enterprise, Mumbai) matching the gingival shade of the patient was mixed with self cure acrylic and painted on the cervical portion of the teeth in the original mold chamber depicting the marginal gingiva (Fig. 7).
11. Mould was then packed with heat cure acrylic mixed with color pigments and curing was done.

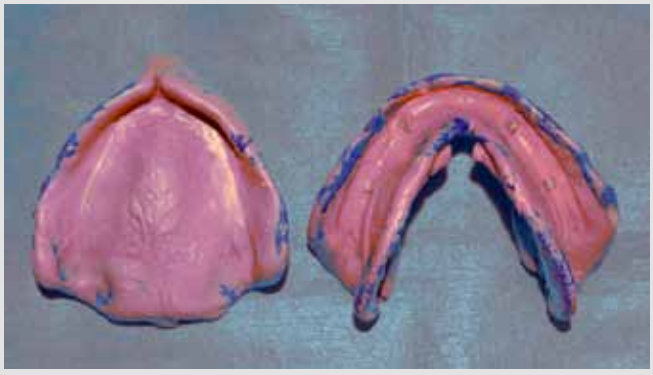

Fig 1 Final impression

Fig 2 Root carving and stippling on wax surface

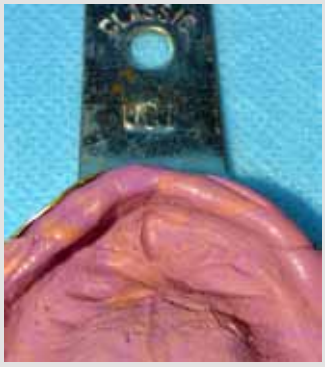

Fig 3 Rugae impression with prominent incisive papilla

Fig 4 Impression adapted over the softened wax with incisive papilla as guide

Fig 5 Rugae details transferred to the softened wax

Fig 6 Mix of die stone over rugae to preserve rugae details

12. After deflasking, trimming and polishing was done. The details were clearly transferred to the palatal rugae area (Fig. 8). The patient was satisfied with the esthetics and the improved phonetics (Figs. 9, 10).

► Discussion

Complete denture fabrication not only replaces the missing teeth but also restores the esthetics, phonetics and function. Pound was the first to suggest a method of tinting acrylic denture bases to simulate the gingival colour. Kemnitzer used a combination of blue and brown stain to reproduce the melanotic pigmentation of the gingiva.[3] Lynn C. Dirksen described a procedure which provides an inexpensive means of obtaining more natural appearing buccal and labial contours for complete dentures. The stippled surface produced by these plastic veneer forms enhances the esthetic appearance of plain pink acrylic resin. The ultimate esthetic result, however, is obtained by the combination of stippling and tinting. The stippled plastic contour veneer is applied to a wax-up in approximately five minutes, and the carving and polishing of the buccal and the labial surfaces of the cured denture is practically eliminated.[3] Copying gingival texture and contours contributes to the natural appearance of labial flanges in complete dentures by causing uneven reflection of light. This in turn, reduces the shine and reflection typically seen in highly polished denture flanges and provides a more natural appearance.[8] The labial flange of a complete denture should not be a smooth curved sheet of acrylic, but instead should show the alveolar eminences over the roots of the teeth.

During denture fabrication, phonetic evaluation is frequently neglected,[9,10] while more emphasis is placed on other key elements of successful denture treatment such as esthetics, function, and comfort. It is generally assumed that patients will successfully adapt to new dentures within a few weeks.[4-6] It may take longer to compensate for changes in palatal contours of maxillary complete dentures, especially for elderly patients.[11] Unfortunately, some patients never acclimate to the new dentures and continue to experience difficulties in pronouncing intelligible sounds, especially the sibilant sounds.[9,10,12] By customizing palatal contours of a maxillary denture to the tongue, the patient may

Fig 7 Pigments added to the cervical portion of teeth in the mold chamber

Fig 8 Transferred rugae details on the denture

Fig 9 Pre-operative smile

Fig 10 Post-operative smile

easily adapt to the definitive denture contour, which in turn shortens or eliminates the adjustment period for the achievement of proper enunciation.[12] There are several methods to duplicate the palatal rugae, simplest procedure being arbitrary carving of the rugae which is difficult and time consuming.. Another precise procedure is electroplating to form metal plate that duplicates the palate but disadvantages being time consuming, expensive and does not apply to denture made of acrylic resin. Some methods use dental stone, custom acrylic pattern, tin foil to capture patient's palatal anatomy[11], but this article describes a simple method to duplicate the rugae using an elastomeric impression material.

Conclusion

The three major factors in complete denture construction are mechanics, esthetics, and phonetics. Considerable progress has been made in improving mechanics and esthetics, but little has been done to improve phonetics. Neglect of this major factor in denture construction may be attributed to the fact that most edentulous patients tend to return to normal speech after a post-insertion practice period of several days to several weeks. Palatal rugae contours have an important role in phonetics. The pattern of the rugae is unique and individualistic and can be used in identity fixation.

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CASE REPORT

Crown Dilaceration of Mandibular Right Permanent Central incisor

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Abstract

Dilaceration of teeth can occur as a result of trauma to its primary predecessors. Root dilaceration is more common than crown dilaceration. A rare case of crown dilaceration of mandibular permanent central incisor has been reported in this article.

Keywords: Dilaceration, Permanent mandibular central incisor

KDJ 2015 | Vol. 38 | No. 2 | Pg 93-95

► Introduction

Trauma to primary teeth can result in a wide range of disturbances to the succedaneous permanent teeth. This can range from a simple white or yellow brown discoloration to crown dilaceration, crown duplication, root dilaceration, root duplication, odontome like malformation, partial or complete arrest of root formation, sequestration of the permanent tooth germ or disturbances in the eruption of the permanent teeth. The type and severity of the disturbance is dependent upon stage of development of permanent teeth (age at the time of injury), relationship of permanent tooth to the roots of primary teeth and direction and degree of force[1].

The term dilaceration was first coined in 1848 by Tomes, who defined the phenomenon as forcible separation of cap of the developed dentin from the pulp in which the development of dentin is still progressing. Later, it was defined as an angulation or deviation or sharp bend or curve in the linear relationship of the crown of a tooth to its root[2].

According to the glossary of dental terms, dilaceration is defined as the deformity of a tooth due to a disturbance between the unmineralized and mineralized portions of the developing tooth germ. Andreasen et al, in 1971 defined dilaceration as the abrupt deviation of the long axis of the crown or root portion of the tooth due to traumatic nonaxial displacement of already formed hard tissue in relation to the developing soft tissue[2,3].

There are two possible causes of dilaceration. The most widely accepted cause is mechanical trauma to the primary predecessor tooth, which results in dilaceration of the developing succedaneous permanent tooth. The calcified portion of the permanent tooth germ is displaced in such a way that the remainder of the permanent tooth germ forms at an angle to it[4]. Although the prevalence of traumatic injuries to the primary dentition ranges from 11%–30%, the incidence of dilacerated permanent teeth is very low and disproportionate to the high prevalence of trauma. Hence, traumatic injuries to the primary dentition are unlikely to account for all cases of dilaceration and especially those of primary teeth themselves. An idiopathic developmental disturbance is proposed as another possible cause, in cases that have no clear evidence of traumatic injury. The damage frequently follows avulsion or intrusion of the overlying primary predecessor that normally occurs before 4 years of age. Some researchers did not support the fact that trauma is the major etiological factor for dilaceration because most dilacerated teeth are found in posterior region and these are not prone to direct trauma[4].

Crown dilaceration of permanent teeth occurs due to the non-axial displacement of the already formed hard tissue portion of the developing crown at an angle to their longitudinal axis due to trauma to the primary predecessors. This is a rare condition, representing only 3% of the total injuries to developing teeth and usually occurs in permanent maxillary incisors because of the close proximity of their tooth germs to the primary incisors, which are more susceptible to trauma[3,5].

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Malcic et al[2] stated that the prevalence of dilaceration in the maxillary anterior teeth and premolars was 4.6%; however, this rate is lower (1.3%) for the mandibular teeth. Additionally, as reported by Asokan et al[2], dilaceration is more often observed in the root of the affected tooth. Considering these reports, we conclude that crown dilaceration in the mandible anterior teeth are rare.

► Case report

An eight year old girl reported to the department of Pedodontics and Preventive Dentistry, Government Dental College, Kozhikode with a chief complaint of discolored and malformed lower front right side tooth. History revealed that she had episodes of pain which was intermittent and dull in nature, with pain aggravating while chewing. Medical history was not contributory. Patient's mother gave a history of trauma to the lower front tooth region due to fall at the age of one year. The parents had consulted a dentist and had stabilized the tooth at that time. The permanent tooth, 41 erupted at the age of six years but the tooth was discolored and malformed with crown at different angle to the long axis of tooth.

A clinical examination revealed severe crown dilaceration of mandibular right central incisor with labial inclination. The incisal and middle third of the crown had yellowish brown discoloration suggestive of enamel hypoplasia. Yellowish discoloration was seen on the incisal third of lower left central incisor also. Thermal vitality tests were positive on 31 and 41. Tooth 41 was slightly tender on percussion. Intraoral periapical radiograph revealed foreshortening of the mandibular right central incisor with widening of periodontal ligament. A diagnosis of crown dilaceration with localized enamel hypoplasia was arrived on the basis of history and clinical findings. Root canal treatment followed by metal ceramic crown as post endodontic restoration was planned for this dilacerated tooth.

Access was gained from incisal aspect. Tooth appeared to have single root canal and was triangular in shape with canal placed more to the mesial side. Working length was measured and biomechanical preparation was done. Obturation was done with guttapercha cones. After one month the tooth remained asymptomatic with no increase in periodontal ligament widening. Guttapercha was removed from the coronal and half of radicular portion of the tooth and a prefabricated metal screw post was placed and core buildup was done with composite. Later tooth preparation was done and metal ceramic crown was given. Composite restoration was also done on discoloured lower left central incisor.

Fig. 1: Pre treatment photographs of dilacerated mandibular central incisor (front view)

Fig. 2: Pre treatment photographs of dilacerated mandibular central incisor (side view)

Fig. 3: Crown cutting done after post and core build up

Fig. 4: Post treatment photographs of dilacerated mandibular central incisor (labial view)

Discussion

Traumatic injuries during the primary dentition stage are quite common. Primary tooth trauma resulting in developmental disturbances in permanent successors has shown to have a prevalence that ranges from 12% to 74%. The direction and magnitude of impact, age of the patient at the time of injury, stage of the developing tooth germs, and their anatomic proximity to the roots of primary teeth are critical factors in determining the effect of injury and its manifestations in permanent teeth. Do Espirito Santo Jacomo and Campos (2009) have reported that enamel discoloration or enamel hypoplasia (46.08%) and eruption disturbances (17.97%) as the most common developmental disturbances in permanent teeth with 9% incidence of crown dilacerations[6].

Fig. 5: Pre treatment radiograph of dilacerated mandibular central incisor

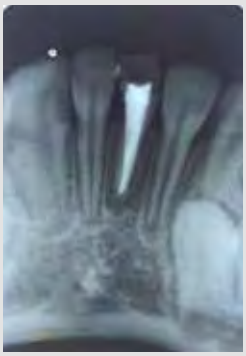

Fig. 6: Post treatment radiograph of dilacerated mandibular central incisor

Dilaceration can occur anywhere along the length of the tooth, that is, the crown, cementoenamel junction, length of the root, or root apex[7,8]. Crown dilaceration has usually shown to have a greater occurrence following intrusion or avulsion of primary teeth, and the most affected age group seen is between 1.5 and 3.5 years at the time of injury. The close anatomical relationship between the developing permanent tooth germ and root of primary central incisor explains the severe developmental disorders observed in its permanent successors following strong mechanical injury to its primary predecessor. Sometimes it occurs secondary to presence of adjacent cyst, tumour or odontogenic hamartomas. In the above case report history of trauma at the age of one year, at that area, was reported by the parent which could have been the probable reason for the dilaceration of this incisor. 50% of cases with crown dilaceration causes impaction of that particular tooth[5]. However no such finding was observed in our case.

Crown dilaceration in the palatal direction occur in the maxillary incisor and labial direction in the mandibular incisor[5,7,8]. Brownish discoloration of dilacerated crown is a common feature which is caused by disturbances in the ameloblastic layer leading to defective matrix formation caused by traumatic injuries[7,8]. In this case report dilacerated mandibular right central incisor was dilacerated labially and showed brownish discoloration suggestive of enamel hypoplasia. An indirect effect on the developing tooth bud of 31 at the time of trauma could have caused the milder form of disturbance, i.e, the localized brown discoloration on the incisal third of the crown on 31.

Pulp necrosis and periapical inflammation of dilacerated tooth without any decay is a common finding of dilacerated tooth. This is because, the bent portion with a defective enamel and dentine (open dentinal tubules) acts as nidus for bacterial entry into the pulp space[3,7] and causes pulpal necrosis and subsequent periapical abscess latter. In this case, the dilacerated mandibular incisor was vital and was confirmed with vitality test but showed pulpal pathology with mild periapical involvement.

Conclusion

Dilacerated teeth are not common, but they pose a number of diagnostic, management and prognostic challenges to the dental practitioners. Presence of dilaceration must be identified. Once identified, the effect of the defect must be fully assessed and appropriate treatment should be ensured at the earliest.

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Aesthetic rehabilitation of a subgingivally fractured central incisor – A two year followup report

*Jinu George, **Anulekh Babu, ** Anupama S Gopinath, *** Jolly Mary Varughese, **** Sam Joseph

Abstract

Anterior tooth trauma, especially the cases with subgingival extension often presents a challenging scenario to the clinician. It is reported that in about eighty percent of the cases, when the fracture line extends subgingivally, it proceeds in an oblique fashion from labial to lingual aspect. Reattachment of the original tooth fragment should be one of the options for managing coronal tooth fractures, provided the fractured fragment is available in an appropriate condition.
It restores function, evokes a positive psychological response, and is less time consuming. The innovation of superior quality adhesive materials makes this procedure feasible. But then, identifying the right indication is most crucial. This case report presents the management of a subgingivally fractured central incisor by reattachment procedure with a two year followup.

KDJ 2015 | Vol. 38 | No. 2 | Pg 96-98

► Introduction

Anterior tooth injuries require immediate management, more often due to its profound psychologic impact than the associated physical disability. The occurrence of anterior tooth trauma is greatest in children and adolescents.[1,2] Approximately one out of every four persons under the age of 18 will sustain a traumatic anterior crown fracture.[3]

Incidence of anterior tooth trauma is greatest in maxillary central incisor, followed by lateral incisor and mandible central incisor[4]. Factors that predispose to trauma include facial profile as in Angle's class II type I malocclusion, patients with cerebral palsy, epilepsy and in conditions like dentinogenesis imperfect[5].

With the exception of minor dental injuries, for which little or no treatment is necessary, most other dental trauma involve a primary emergency treatment followed by secondary level care that often includes multidisciplinary approach. Possibly for some injuries, a tertiary level of care may be needed for late developing trauma sequelae.

This case report is about a subgingivally fractured maxillary central incisor which was managed by reattachment of the fractured fragment along with endodontic treatment.

► Case report

An eighteen year old female patient reported to the Department of Conservative Dentistry and Endodontics, Government Dental College, Thiruvananthapuram with a broken upper front tooth (Fig. 1). She had a history of trauma due to fall three days back. The medical and dental history of the patient was noncontributory.

Soft tissue evaluation revealed an abrasion on the lower lip. Hard tissue examination revealed a fracture line on the cervical third of the labial aspect of right maxillary central incisor (#11). However, fracture line was not visible palatally. The tooth was tender to percussion, and there was a slight mobility of the coronal fragment. Periodontal probing revealed a subgingival fracture line in the palatal aspect not violating the biological width. Examination of other teeth presented a normal picture.

Radiographic evaluation in three different angulations and an occlusal radiograph[6] revealed a single oblique fracture line extending from the cervical third of the crown on labial side to the coronal third of root palatally (Fig. 2). Adjacent teeth were of normal appearance and alveolar bone was also intact. Based on clinical and radiographic findings, a diagnosis of oblique complicated crown root fracture, not violating the biological width was reached.

In such a case various treatment options can be considered. These

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include reattachment of fractured fragment, orthodontic or surgical extrusion followed by a post and core and full crown fabrication. In extreme cases, extraction and replacement of the tooth might be needed.

These options were discussed with the patient and considering the patient requirement for a relatively quick and conservative treatment approach, a single visit multidisciplinary management was planned as follows; endodontic treatment of the tooth followed by palatal gingivectomy, fiber post fixation and then reattachment of fractured fragment.

► Treatment procedure

The fractured fragment was stabilized with composite splinting to adjacent teeth. This was done after achieving adequate anesthesia. Occlusion with opposing teeth was checked and cleared. The root canal treatment was done and a post space was prepared with corresponding drills to receive the fiberpost (Fig. 3). The pre-fabricated post was checked in the canal for proper length and adaptation. After this, the fragment was removed (Fig. 4 and 5) and stored in normal saline till reattachment. As reattachment of fragment requires adequate isolation of the fractured margins, gingivectomy was done on the palatal aspect of right maxillary central incisor (Fig. 6). Supracrestal osteoplasty was not done as the biologic width was not violated.

Circumferential bevels were prepared on the margins of both the fractured fragment and the tooth in order to reinforce reattachment. The tooth, fragment and fiber post (Angelus Reforpost Glass Fiber RX Kit) were etched and bonding agent was applied and cured. The post was fixed and the tooth fragment was reattached using dual cure resin cement (Calibra Esthetic Resin Cement, Prime & Bond NT Dual Cure Universal Dental Adhesive) (Fig. 7 and 8). During this procedure, the fragment was held firmly using finger pressure for better adaptation. Oral hygiene instructions were given and 0.2% Chlorhexidine mouthrinse was prescribed for two weeks. Patient was reviewed after 3 days. In order to mask the fracture line, a partial composite veneering (3M ESPE Filtek™ Supreme XTE Universal Restorative) was done on the labial surface. Finishing and polishing was done with composite polishing kit (SHOFU Super Snap Rainbow Tech Kit).

Fig 1

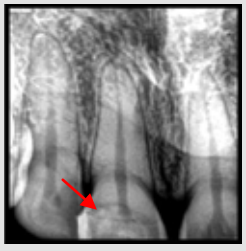

Fig 2

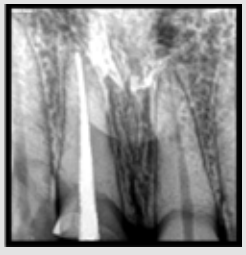

Fig 3

Fig 4

Fig 5

Fig 6

Fig 7

Fig 8

Fig 9

Fig 10

Fig 11

Patient was satisfied with the aesthetic outcome of the treatment. Patient was recalled initially after two weeks, one month, 6 months and 24 months respectively. At 24 months follow up gingival tissue healing was satisfactory, the tooth was symptom-free and there was no discoloration of the fractured tooth portion (Figure 9, 10, 11).

Discussion

Aesthetic and functional rehabilitation is the primary goal after anterior tooth trauma especially in younger patients. In that scenario, reattachment of fractured segment is an acceptable approach with good clinical outcome. As per the current evidence reattachment of the fractured segment often have best clinical outcome if performed in appropriately indicated cases.

There are several factors influencing the treatment modalities of coronal fractures and that include,[7] site of fracture, size of fractured remnant, periodontal status, pulpal involvement, maturity of root formation, biological width invasion and occlusion. And the various advantages for reattachment of fractured fragment include,[8] conservation of tooth structure, simple procedure, less chair time, esthetics, functional rehabilitation, positive psychological response and cost effectiveness.

The use of post increases retention, distributes the stress along the root and with the help of the glass fiber post the fractured crown can be permanently bonded to the root[9]. Connecting the fiber post with the resin cement offers good retention of segment and provides a monoblock effect as it has low modulus of elasticity equal to dentin[10].

Reattachment is a more viable option when fracture line is not extending to the alveolar bone crest and fragment is available in an appropriate condition as in the present case. When the fracture line is beyond the alveolar crest, orthodontic or surgical extrusion might be considered. Patient co-operation and understanding of advantages and disadvantages of various treatment options are also important. The success and failure of reattachment procedure depends on the use of proper bonding protocol for which a dry, clean operative field is a must. In addition, appropriate selection of materials also play a crucial role in the eventual outcome of any reattachment case. Zobra et al had reported a case on tooth reattachment without any additional tooth preparation, using fibre post with a 1 year up followup[11]. In the present case, circumferential bevels were prepared on the margins of both the fractured fragment and the tooth in order to reinforce reattachment and to aid in long term treatment success. The use of cast metal posts can cause wedging forces coronally resulting in fracture of an already weakened root[12]. Studies have reported that dentin-bonded resin post-core restorations have fewer incidences of unrestorable fractures than cemented custom cast posts and cores[13, 14].

In the present case, though the fracture had a subgingival extension, importantly it was not violating the biological width. Still gingivectomy was done to facilitate adequate bonding. Again osseous recontouring was not performed as the fracture line was within the safe zone of biological width. Though mobile, the fractured segment was retained with composite splinting before root canal treatment and post preparation. The objective of this was to prepare the adequate post space corresponding to the post size to facilitate subsequent reattachment of the fractured segment.

Conclusion

Reattachment of original tooth fragment with the improved adhesive protocol and reinforcement technique in appropriately selected cases is a simple, conservative approach to provide immediate natural esthetics and functional rehabilitation.

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Amelogenesis Imperfecta: A full mouth rehabilitation

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Abstract

Amelogenesis Imperfecta is a genetically determined and enamel mineralization defect reported, depicted as "Hereditary brown teeth." It is characterized as a clinical entity and its clinical manifestations, histological appearance, and genetic pattern are characterized by their heterogeneity. Altered dental esthetics, anterior open bite, tooth sensitivity, missing or impacted teeth were related to it. This case report presents diagnosis, treatment planning and prosthetic rehabilitation of a 27-year-old male patient with Amelogenesis Imperfecta. The radiographic and clinical examination of the teeth confirms the diagnosis of rough pattern hypoplastic Amelogenesis imperfect. The patient was rehabilitated with full-mouth metal-ceramic and all metal crowns and bridges. Adaptation of the temporomandibular joints and masticatory muscles to the bridges was carefully observed over 2 years.

KDJ 2015 | Vol. 38 | No. 2 | Pg 99-101

Introduction

Amelogenesis imperfecta is a hereditary disorder, characterized by generalized enamel defects in both primary and permanent dentition[1,2,3]. It is associated with biochemical and morphologic changes in the body[2]. Amelogenesis imperfect may be part of a malformative syndrome, such as tricho-dento-osseous syndrome, amelo-onycho-hypohidrotic syndrome, Morquio syndrome, Kohlschutter syndrome, oculo-dento-osseous dysplasia or epidermolysis bullosa hereditaria, AI with taurodontism syndrome[1,4,5].

AI classified into four broad categories based primarily on phenotype[8,9]:

Class I: disturbance of the translation and secretion of an extracellular matrix (hypoplasia)

Class II: disturbance of the maturation of enamel (hypomaturation),

Class III: disturbance of the matrix mineralization process (hypocalcification)

Class IV: hypomaturation-hypoplasia in combination with taurodontism[9].

Amelogenesis imperfecta is also associated with several dental anomalies, including congenitally missing teeth, dental or skeletal open bite, disturbances in eruption, hypercementosis, pulpal calcification, tooth sensitivity, poor dental aesthetics, taurodontism, decreased vertical dimension and pathologic root & crown resorption[7,8,9]. Gingivitis and gingival hyperplasia may adversely affect the oral health and the prognosis for prosthetic treatment of these patients[7]. This case report describes the rehabilitative procedures for a patient affected by Amelogenensis imperfecta.

Case report

A 27-year-old male patient was referred to Department of Prosthodontics at School Of Dental Sciences, Sharda University with a chief complaint of unpleasant smile and discolouration. Dental and Medical history was obtained. Family history revealed that his older brother was also affected by similar conditions.

Clinical examination revealed thin enamel layer, less cuspal structure in the occlusal surface of the molars which most severely affected. The clinical appearance of proximal and cervical enamel was normal. (Fig 1)

The patient had acceptable oral hygiene; however, mild to moderate gingivitis was present, especially in maxillary segment. Intraoral and Panoramic radiograph were obtained prior to the treatment procedure. Radiograph revealed roots of all teeth to be normal in shape and size. (Fig 2)

The patient's vertical dimension at rest and occlusion were assessed. Inadequate interocclusal space was found. A treatment plan was developed with the aim of restoring aesthetics, masticatory function and reducing tooth sensitivity.

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Proper treatment planning was done to extract the unhealthy teeth and other were restored

After the histological examination, it was diagnosed that the patient suffered from hereditary hypo-maturation-type of Amelogenesis Imperfecta.

The patient was informed of the treatment options, cost, time period for treatment completion, aesthetic results and clinical longevity. The treatment procedure included all-metal and metal-ceramic restorations on maxillary and mandibular teeth.

► Procedure

1. Impressions of maxillary & mandibular arches were made with reversible hydrocolloid material (Zelgan 2002, Dentsply India Pvt. Ltd) and diagnostic casts were obtained.
2. Facebow transfer (Fig 3) was done and maxillary & mandibular cast were mounted on a semi adjustable articulator (Hanau wide vue) using interocclusal records.
3. The diagnostic preparations and wax-up (Fig 4) revealed insufficient interocclusal space for fixed prosthesis. Vertical dimension at occlusion was increased by 3 mm using occlusal splint device for a period of 3 months.
4. Niswonger's technique and Silverman's closest speaking method were used to establish the new Vertical dimension. Diagnostic wax-up on the casts were done to assess the amount of tooth reduction for planned all-metal and metal-ceramic restorations.
5. The teeth were prepared (Fig 5) and temporary restorations (Fig 6) were fabricated to minimize patient discomfort, cemented with Zinc Oxide-non eugenol cement and kept under observation for 3 weeks.
6. Minimal occlusal reduction is indicated for patients scheduled for rehabilitation at an altered vertical dimension at occlusion.

Fig 1. Intraoral views before treatment showing discoloured teeth with rough surfaces and irregular defects.

Fig 2. Panoramic radiography before treatment reveals a very thin enamel layer, normal roots and pulp chambers.

Fig 3. Facebow Transfer

Fig 4. Diagnostic Wax-up

Fig 5. Intraoral view after preparation of the teeth.

Fig 6. Provisional restorations

7. Once the patient was adapted to this position, a custom incisal guide table was fabricated from the acrylic resin (Rapid Repair; Dentsply, Gurgaon, India) to preserve the anterior guidance for the fabrications of definitive restoration.
8. Gingival retraction made to accurately record finish lines in the definitive impressions using a knitted cord (Ultrapack; Ultradent Product, Salt Lake, Utah) wet in aluminium chloride (Visco Stat Clear Ultradent Products Inc.; Salt Lake City, Utah). A final full-arch impression for maxillary and mandibular teeth was made using poly vinyl siloxane impression material and casts were fabricated from type IV gypsum product (Ultrarock; Kalbhai Karson Pvt Ltd, Mumbai, India) and they were mounted on the semi-adjustable articulator using interocclusal records.
9. Wax pattern were fabricated, metal copings obtained were tried in the patient's mouth.
10. Definite restorations with PFM crowns in anterior region exhibiting a vital and natural appearance with appropriate contour and shade were fabricated.
11. The crowns were assessed and accustomed for optimal contours, contacts intraorally and they were luted with GIC type I (GC Fuji I, Made in Japan) luting cement. (Fig 7 & 8)
12. The outcome of the treatment in terms of function and aesthetics satisfied the expectations of patient. The patient was monitored at 3 months interval for 1 year and he has not experienced any complications since then.
13. The patient was extremely pleased with the final results. The 2-year postoperative appointment demonstrated excellent stability of the restorations and no evidence of temporomandibular discomfort.

Discussion

According to Seow, patients with Amelogenesis imperfecta are often aesthetically and functionally affected because of tooth discolouration, hypersensitivity and loss of vertical dimension of occlusion [VDO][10,11]. Restoration of such innate defects is essential, not only due to aesthetic reasons, but also because of psychological impact on young patients. Also, a mutual understanding and communication among the Prosthodontic, Periodontic, Endodontic discipline is very important, to accomplish the improved aesthetic and functional result.

Conclusion

In the presented case report, esthetic and functional rehabilitation of hypo-maturation-type Amelogenensis imperfecta was achieved with the use of all metal and metal-ceramic restorations. The patient's esthetic and functional expectations were achieved and no problem was detected at the 2nd annual clinical visit.

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Fig 7. Post–treatment intraoral view of teeth in maximum intercuspation

Fig 8. Post–treatment intraoral view of teeth

Endodontic management of mandibular premolar with aberrant morphology

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Abstract

Successful outcome of endodontic treatment depends on thorough cleaning and shaping of the root canal system, which requires knowledge about the internal anatomy of the tooth to be treated and the possible variations. Mandibular premolars present an endodontic challenge because of its complex anatomy. This article describes the management of a mandibular second premolar with aberrant morphology.

Key Words: Mandibular premolar, extra root canals, aberrant morphology

KDJ 2015 | Vol. 38 | No. 2 | Pg 102-103

► Introduction

Thorough cleaning and shaping of the root canal system followed by its three-dimensional obturation is essential for the success of endodontic treatment. Incomplete canal instrumentation is a significant cause for endodontic failures[1]. The clinician should harness knowledge of the basic root canal morphology and its possible variations to achieve a favourable treatment outcome. Variations can occur with respect to number and shape of canals in each root, number of roots, and root fusion. Undetected extra roots and canals could lead failure of treatment.

The mandibular second premolar is typically described as a single rooted tooth with a single root canal system. However variations in its root and canal morphology can deceive even experts in the field. This has conferred it the status of one of the most difficult teeth to tackle endodontically[2]. This paper unveils an interesting case report on the successful management of a mandibular second premolar with a variant radicular morphology.

► Case Report

A sixteen year-old male patient reported to our department with complain of pain in relation to lower right back tooth since two months. He had a history of occasional night pain and pain when taking cold food, which persisted for some time. He gave a history of lower right molar root stump extraction two months back and his medical history was non-contributory.

Clinical examination revealed a larger than usual crown of tooth #29 with a deep carious lesion exposing the pulp and remnants of a dislodged restoration. There was no evidence of mobility, sinus tract or swelling. The periodontal probing depth was normal and the tooth was not tender to percussion. Intraoral periapical radiograph revealed a coronal radiolucency of tooth #29 extending to the pulp chamber and an aberrant root morphology. Three root outlines were evident with an abrupt change in the radiolucency of the pulp space at about 3 mm apical to the cemento-enamel junction (Fig.1).

Based on the clinical and radiographic findings, a diagnosis of symptomatic chronic irreversible pulpitis was made. The patient was informed of the need for endodontic treatment and variation in the tooth morphology.

Local anaesthesia (2% lignocaine with 1: 200000 adrenaline, Kwality Pharmaceuticals Pvt Ltd, India) was administered, tooth was isolated with rubber dam and endodontic access cavity preparation was done under magnification using dental operating microscope (Seiler, USA). Three canal orifices were located- mesiobuccal, mesiolingual and distal. The canals were negotiated with a #10 K file and working lengths were determined using an electronic apex locator (Raypex 5, VDW) and radiographically (Fig. 2). The root canals were prepared using ProTaper Universal files for hand use (DentsplyMaillefer, Switzerland) and copiously irrigated with 5% sodium hypochlorite (Pyrex Exports, India) followed by normal saline. Calcium hydroxide paste was placed as intracanal medicament and the access cavity was temporarily sealed. After two weeks the

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patient was recalled and found to be asymptomatic. Calcium hydroxide was removed with irrigation and instrumentation; the canals were dried and obturated using single cone technique (ProTaper Universal guttapercha points, DentsplyMaillefer, Switzerland) with zinc oxide-eugenol sealer (Fig. 3, 4). The access cavity was restored with IRM (Dentsply Caulk, USA) and the patient was referred to the department of Prosthodontics for further management.

Discussion

Root canal morphology of mandibular second premolar can be extremely complex. The incidence of number of roots and of the number of canals reported in anatomic studies varies greatly in the literature. Various factors have been suggested to contribute to these differences- ethnicity, age, gender and unintentional bias in the selection of patients or teeth[3].

Majority of mandibular second premolars in anatomic studies and cases have been reported to be single rooted (99.6%). Two roots (0.3%) and three roots (0.1%) were extremely rare[3]. Three-rooted teeth have been reported in literature by Fischer et al[4], Rödig et al[5] and Shapira et al[6].

Untreated root canals could lead to treatment failure. It is important that clinicians should have a thorough knowledge of the internal anatomy of the teeth and armamentaria that are helpful in locating and treating the entire root canal system. Multiple pre-treatment radiographs taken at different angulations i.e., 15–20 degrees from either mesial or distal give information about additional roots and canals[3]. Martinez-Lozano et al[7] have suggested a 40-degree mesial angulation of the x-ray beam to identify additional canals. Sudden narrowing of the canal system or abrupt disappearance of radiolucency of pulp space on a parallel radiograph suggests canal system multiplicity[8]. Cone beam computed tomography (CBCT) is an invaluable tool for the diagnosis and treatment planning of teeth with aberrant morphology. Several measures aid in the location of root canal orifices- use of magnification, examination of the pulp chamber with a sharp explorer, troughing grooves with ultrasonic tips, staining the chamber floor with 1% methylene blue, visualizing root canal bleeding points and performing 'champagne bubble test' with sodium hypochlorite. The use of magnification and illumination has been demonstrated to greatly enhance the clinician's ability to visualize and access canals[9, 10].

Conclusion

A thorough understanding of the root canal system and its intricacies is essential. This knowledge combined with careful interpretation of radiographs, clinical inspection of the anatomic details of the floor of pulp chamber and use of proper armamentaria, enhances the predictability and success of endodontic treatment.

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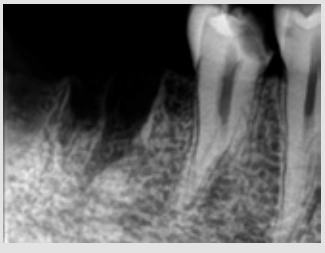

Fig 1: Pre-operative radiograph

Fig 2: Working length radiograph

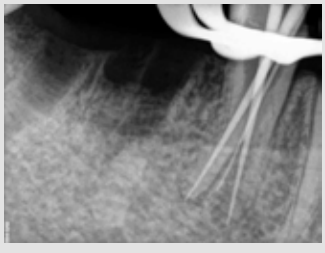

Fig 3: Master cone radiograph

Fig 4: Post-obturation radiograph

A Wolf in the Golden Fleece: Watch Out...

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Abstract

Squamous cell carcinoma (SCC) of the gingiva presents as an ulcer or an area of erosion. In majority of cases they are casually related to the habit of chewing tobacco or pan masala. In about 5% of the cases it may arise from chronic trauma or non-tobacco related oral pre-cancerous lesions. Early carcinoma is painless. We are reporting a case of SCC in a 59 year old lady without any etiologic factors and presented as a painful gingival ulceration.

Key words: Gingival squamous cell carcinoma, radiological features of gingival carcinoma

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Introduction

The commonest intra-oral site for squamous cell carcinoma in South East-Asia is bucco-gingival complex[1]. In over 95% cases it is casually related to tobacco quid kept in the bucco-gingival sulcus. In the remaining, it could be chronic trauma from un-scientifically fabricated dental appliances and spike like remaining roots. When an elderly patient reports without any of these etiologic agents and with a non-healing ulcer, involving the gingiva and alveolar mucosa, one has to keep in mind specific diseases like tuberculous ulcer and SCC in the differential diagnosis.

We had a patient who was treated for periodontitis for 6 months without any response. On biopsy it was diagnosed to be SCC arising from the gingiva. The patient was referred to RCC Trivandrum and was given state of the art treatment. The patient is disease free, even after 2 years.

Case report

A 59-year-old female patient reported to the Department of Periodontics, Azeezia College of Dental Sciences & Research, Kollam with the chief complaint of pain and burning sensation in the left back region of the lower jaw for the previous 6 months. Patient allegedly stated that a toothbrush trauma 7 months back resulted in the lesion.

She had consulted a dentist 2 month back and was diagnosed as having a chronic ulcer. She was put on analgesics and antibiotics. However, no change was observed, except for mild reduction in pain. She had no tobacco, arecanut or alcohol habits. Patient is a known diabetic for the past 15 yrs and is under medication. Patient also had history of myocardial infarction two times.

Extra oral examination revealed facial symmetry and there was no obvious cervical lymphadenopathy.

Intra oral examination revealed moderate gingival inflammation. Clinically the lesion presented as a chronic ulcer on the gingiva and alveolar mucosa on the buccal aspect of 34, 35 and 36, with clinical attachment loss of approximately 5mm (buccally) was seen in relation to 34, 35 and 36. The ulcer measured 10 mm × 4 mm (Fig.1). The ulcer was tender on palpation. There was no bleeding or exudation on palpation. Gingiva in relation to 34, 35, 36 and 37 showed grade II recession with insufficient attached gingiva in relation to 36.

Examination of other mucous membranes surfaces of the oral cavity did not reveal any abnormality. The lesion was provisionally diagnosed as a chronic non-specific ulcer. The differential diagnosis included SCC & tuberculous ulcer.

IOPA radiograph and OPG were taken. IOPA x-ray showed ground glass appearance of the alveolar bone and absence of periodontal space and lamina dura in relation to 35 and 36 (Fig 2). Examination of the x-ray under magnifying lens showed, deranged trabecular pattern with evidence of localized bone resorption. OPG showed a saucer like destruction of the alveolar bone (Fig.3) in the region of 34, 35 and 36.

Routine hematological and biochemical examination showed all values within normal limits except for marginally elevated random blood sugar.

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Scaling and root planning were done. Chlorhexidine mouthwash rinse was given twice daily for 1 week, and Hexi-M gel 3–4 times daily for 1 week was given.

The patient reported after 1 week and the healing was not satisfactory. Hence an excision biopsy was done. A crevicular incision was given (Fig 4) and the tissue excised was sent for histo-pathologic studies. Sutures placed with 3#0 black silk suture (Fig 5).

► Histopthology report

Section shows fibro-collaginous tissue infiltrated by a neoplasm composed of cells in sheets/nests and cords. Cells are squamous with mild-moderate pleomorphism and show vesicular nuclei and occasional mitosis. No lining epithelium is seen. The tissue was diagnosed as Invasive SCC, moderately differentiated.

Patient was referred to Regional cancer centre Trivandrum for further treatment. Wide excision and marginal mandibulectomy was done (Fig 6). Selective neck dissection was done for level one nodes on the left side (Fig 7).

The patient was symptom free and did not receive radiation or chemotherapy

► Discussion

SCC is defined as a malignant epithelial neoplasm exhibiting squamous differentiation characterized by the formation of keratin and/or the presence of intercellular bridges[2]. Squamous-cell carcinoma of the oral cavity has a varied clinical presentation and may mimic a variety of diseases, leading to diagnostic dilemmas. The relatively common clinical presentation in the gingival carcinoma is an ulcer or an area of erosion and not an exophytic growth[2]. Biopsy and histopathological examination are essential for accurate diagnosis.

Squamous cell carcinoma (SCC) is the most common malignant neoplasm (90%) of the oral cavity (Shaefer). The etiologic factors for SCC are consumption of tobacco, alcohol, arachenut and chronic trauma. In our patient these causative factors were not present. Early SCC is painless. The ulcer presented with pain in our patient, therefore squamous cell carcinoma was not considered as the provisional diagnosis during the first visit. The treatment of early SCC of the gingiva is surgical ablation with minimum 1 to 1.5 cm margin.

Early detection of SCC is vital in the prognosis. Disease free survival is directly related to the size of the lesion. Lesions measuring less than 1 cm are amenable to cure and long-term prognosis are commonly seen in early lesion without nodal involvement. The overall survival rate for gingival SCC is about 54%[3,4]. Gingival SCC might appear as localized periodontal disease, making a diagnosis of SCC difficult. Ok-Su Kim et al also reported gingival SCC presenting as

Fig. 1 Intra oral view of the lesion

Fig. 2 IOPA

Fig. 3 Ortho pantamogram

Fig. 4 Excisional biopsy taken

Fig. 5 Sutures placed

Fig. 6 Intra oral view following treatment at RCC

Fig. 7 Extra oral view following Treatment at RCC

localized periodontal disease[5]. Conditions to be considered in the differential diagnosis are epithelial dysplasia, benign mucous membrane pemphigoid, erosive lichen planus, tuberculosis ulcer and gingival SCCs.

The IOPA X-ray showed clear evidence of localized bone loss in the alveolar bone away from the lamina dura which is commonly noticed in SCC of the gingiva[6].

The OPG showed a classical saucer like destruction of alveolar bone typical for invasive gingival carcinoma which were not noticed critically and therefore this case was not provisionally diagnosed as SCC[6].

Both these omission point out the importance of a proper radiographic interpretation.

Conclusion

Very often sinister pathological conditions present as cases that seems to be the simplest of the simple, we take them with little care and do the treatment. But when the patient returns back with the symptoms that persist without any cure, at that time we go for detailed examinations and investigations then we will find how severe the condition was. This should not happen.

An ulcer not healing within a month even after anti-biotic therapy is to be viewed with caution in an elderly patient[7]. Beware of the wolf in the golden fleece.

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Impression in fixed prosthodontics

* Ranjith Kumar P, * Shajahan P A, ** Shreshta Sathish

Abstract

The contemporary restorative dentist has a host of excellent impression materials available for making impression in fixed prosthodontics. Based on quality of impression sent to commercial laboratories, it seems that most of the impressions fall far short of the level of quality made possible by current impression materials.

This article outlines the various impression materials, techniques and explains the importance of critical manipulative variables. Special consideration is paid to addition silicone (Polyvinylsiloxane) impression material, as it is widely accepted and used in clinical practice

KDJ 2015 | Vol. 38 | No. 2 | Pg 107-109

Introduction

Different viscosities are available for elastomeric impression materials. It is supplied from low viscosity to very high viscosity putty material. The main difference are between the different viscosities is the amount of inert filler in the material.

Two important points to remember:

Lower the viscosity, better the finer detail reproduction. Lower the viscosity, greater the polymerization shrinkage during the setting reaction. Thus heavy body material provides main bulk of impression and push the light body material into the gingival sulcus and results in minimal distortion due to the polymerization shrinkage.

Principles of impression material manipulation:

Proper manipulation of impression material is probably more important in determining the accuracy of an impression than which of materials is selected.

Various manipulative variables are

- Provision of a uniform bulk of material.
- Material should adequately adhere to impression tray.
- Adequate mixing.
- Proper disinfectant protocol and pouring.

Correct manipulation of material for good impression!!!

Most materials are provided as base/catalyst systems. When separate tubes of base and catalyst material are provided, hand mixing is required. The base and catalyst materials are of contrasting colours, are generally equal lengths of both materials are extruded on the mixing pad, and vigorously stropped till a homogenous mix is obtained.

Auto mix system are also available which provided optimum mixing of material with fewer inherent voids, extend the essential working time of the material, and reduce waste of the material because they are loaded from the dispenser directly on to the tooth or tray.

Custom Tray Vs Stock Tray

Custom tray can improve the chances of producing an accurate impression because it can offer greater rigidity and allow control of the thickness of impression material. An optimum thickness (2-4mm) of material will provide the best compromise between having enough bulk of material to minimize the permanent deformation caused by removing the material from undercuts, and the need to reduce the volume so as to minimize the effect of shrinkage.

Fabrication of Custom Tray

After making a preliminary cast, spacer wax is covered (you can use modeling wax also) and occlusal stops are prepared by removing the wax from non critical areas, i.e. non functional cusps of unprepared teeth, edentulous areas or the palate with a hand instrument. This guides the clinician in correct seating of the tray. The metal foil is adapted to facilitate removal of wax from the tray and to prevent incorporation of a wax residue on the internal surface of the tray, then self cure acrylic is mixed in appropriate polymer monomer ratio and adapted in dough stage over metal foil.

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Tray should be made one day before patient appointment for tooth preparation to ensure stability. Retention of the impression in the tray as it is removed is essential!!!

Tray should be perforated with holes of atleast 2-3mm diameter, to allow material to escape and lock onto the outer surface of the tray. This improves retention of impression material with tray.

Tray adhesive need to be painted on atleast 7-l0 minutes before the tray is used. If sufficient time is allowed for the solvents to evaporate, the adhesive will act as lubricant.

Disinfection:

The clinician must disinfect impression before pouring the cast or sending the impressions to the dental lab.

1st step: Rinse the impression with tap water.

2nd step: Spraying the impression with disinfectant agent or immersion of impression in chemical agent.

Pouring of impression:

Condensation silicon should be poured within 30 minutes and Polyether should be poured within 1 hour for maximum accuracy.

Polyvinylsiloxane or addition silicone is most stable and do not give off or absorb water, permits pouring of the impression at the convenience of the operator.

Impression techniques

- Putty Wash or Reline or Two stage
- Simultaneous or Multiple mix or Squash technique or one stage
- Monophase or single impression procedure using custom tray
- Dual Arch or Triple Tray technique

Putty Wash impression technique:

Either can use stock tray (Putty impression is made in a stock tray and a PVS putty) or we can make custom tray. Impression is made by relieving putty impression.

Either of the two methods you can employ:

1st Method: Preoperative putty impression is made with cellophane sheet as spacer placed over the teeth to prevent putty from entering gingival embrasures. Then after tooth preparation, impression is washed or relined with low viscosity PVS impression material.

2nd Method: Preoperative putty impression is made and then putty should be generously cut back in the depths of the sulci (and palate in the upper arch), and several buccal and lingual sulces cut to provide escape channels for the wash(low viscosity or light body). The interdental collects should be removed, and the modified putty impression replaced to check that it can be easily relocated. Then wash impression made using light body.

Note: Entire impression, rather than just the prepared area should be "washed". The tray should not be compressed too much and pressure should be just enough to hold the tray in position till the impression material sets completely.

Simultaneous or Multiple Mix

Impression technique:

Stock tray is loaded with putty material and low viscosity (light body) is injected around the prepared area. The tray containing the putty is squashed over the putty material and syringe material setting simultaneously.

It's difficult to control the thickness of impression material in this technique.

Two methods of applying light body onto the prepared teeth are.

Fig 1 Light Body is injected onto the prepared tooth

Fig 2 Putty Wash Impression

Fig 3 Triple Trays

1st Using paper pad: Take out base paste and catalyst paste, as per manufactuer's instruction, on a paper pad with markings. Mix in such a manner so that the 2 colours blend into a homogneous mix. Follow the mixing time according to brand you are using.

2nd Using Cartidge: Light body is available in cartridge form. Material from the cartridge can be easily extruded onto the prepared teeth in the mouth.

Monophase or single impression procedure using custom tray:

In this technique custom tray is prepared as mentioned earlier and coated with tray adhesive. Equal lengths of base and reactor pastes of medium viscosity(regular body)material are taken on the mixing pad and manipulated according to manufacturer's instructions. The mix is transferred onto the tray and impression is made. The impression is removed after due setting time and is checked for details.

Dual Arch Impression

Also known as closed bite, triple tray or double arch impression. The aim of impression is to achieve the simultaneous recording of the prepared tooth, the opposing arch and their intercuspal relationship.

This technique has many advantages over conventional methods, less material is needed, it is quicker and bite registration recorded simultaneously with impression.

Both plastic and more rigid metal trays are available for posterior quadrants and anterior segments.

Indicated only for one or two units bounded by intact and opposed teeth.

Important Considerations

Stable, reproducible and obvious intercuspal position.

It should be used only with patients that have existing anterior guidance. If patient does not have existing anterior guidance, nonworking interferences may be introduced in the finished prosthesis.

Tray should not contact axial tooth surfaces, or adjacent tissues in closure.

Check that the patient can close repeatedly into intercuspal position with tray in place, i.e. not contacting teeth on opposite side.

Check correct closure of opposing dentition using reference teeth noted previously.

The impression is shallow, and this make it difficult to pour and mounting can be problematic without specific cast relators.

Mounting done on disposable plastic articulator (economical and readily available)

► Conclusion:

Clinician have an excellent array of impression materials and techniques to employ in fabrication of tooth supported restoration. Obtaining maximum accuracy of impression is critical to the provision of precise restorative dentistry.

Considering all the parameters mentioned in this article for various impression techniques, will result in restoration which is far more accurately and require less adjustment. Not only will chairside time be saved, but patients will feel, more confident, your technician will be happier to make your restoration and more importantly your job satisfaction will increase.

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The science and principles of shade selection in dentistry

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Abstract

Shade selection is a crucial clinical step during prosthetic treatment. Closely matching natural teeth with an artificial restoration is one of the most challenging procedures in restorative dentistry. The process of shade selection itself is based on scientific, artistic and physiological principles, which should be properly understood to avoid any shade mismatches and consequent remakes. A thorough knowledge of the applied principles of color and various factors influencing color realization is essential for achieving successful shade selections in routine dental practice.

Key words: Color matching, color science, shade guide,

KDJ 2015 | Vol. 38 | No. 2 | Pg 110-113

► Introduction

In modern dentistry, great emphasis is being placed on esthetic restorations by patients and dentists alike. For these tooth-colored restorations, an accurate and acceptable shade selection on the chair-side and its accurate formulation in the laboratory still remains a demanding task even for the experienced clinicians and laboratory technicians.

Albert Munsell described color as a three dimensional phenomenon. He described the three dimensions as hue, value (brightness), and chroma (saturation).

Hue

Hue is the quality that distinguishes one family of colors from another. Hue is specified as the dominant range of wavelengths in the visible spectrum that yields the perceived color, even though the exact wavelength of the perceived color may not be present. Hue is a physiologic and psychological interpretation of a sum of wavelengths. In dental terms, hue is represented by the letter A, B, C, or D on the commonly used Vita Classic Shade Guide.

Value

Value or brightness is the amount of light that is returned from an object. Munsell described value as a white to black gray scale. Bright objects have lower amounts of gray and low value objects have larger amounts of gray and will appear darker. The brightness of a crown is increased usually in two ways, by using lighter porcelain (lowering chroma) or by increasing the reflectivity of the surface. Lowering value means diminished light returns from the object illuminated, thus, more light either is being absorbed, scattered elsewhere, or transmitted through. Some hues have a more extensive value range than others, retaining their identity as they become darker.

Chroma

Chroma is the saturation, intensity, or strength of the hue. As chroma is increased, the value is decreased. Chroma and value are inversely related. Chroma is represented by numbers on the Vita Shade Guide.

► Other optical properties

Translucency

In dental ceramics, we try to imitate the appearance of the tooth as a sum of all its visual dimensions. Human teeth are characterized by varying degrees of translucency, which can be defined as the gradient between transparent and opaque. Generally, increasing the translucency of a crown lowers its value because less light returns to the eye. With increased translucency, light is able to pass the surface and is scattered within the body of porcelain. The translucency of enamel varies with the angle of incidence, surface luster, wavelength, and level of dehydration. With a translucent enamel layer, the ceramist achieves color depth and the illusion of a vital natural tooth.

Fluorescence

Ultraviolet (UV) light can have a dramatic effect on the level of vitality exhibited by restorations. With the characteristic of fluorescence, they look brighter and more alive. Fluorescence is the absorption of light by a material and the spontaneous emission of light in a longer wavelength. In a natural tooth, it primarily occurs in the dentin because of the higher amount of organic material present. Ambient near-UV light is absorbed and fluoresced back as light primarily in the blue end of the

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spectrum, but it will occur at all wavelengths. The more the dentin fluoresces, the lower the chroma. Fluorescent powders are added to crowns to increase the quantity of light returned back to the viewer, block out discolorations, and decrease chroma.

Opalescence

Opalescence is the phenomenon in which a material appears to be one color when light is reflected from it and another color when light is transmitted through it. A natural opal is an aqueous disilicate that breaks transilluminated light down into its component spectrum by refraction. Opals act like prisms and refract (bend) different wavelengths to varying degrees. The shorter wavelengths bend more and require a higher critical angle to escape an optically dense material than the reds and yellows. The hydroxyapatite (HA) crystals of enamel also act as prisms. Wavelengths of light have different degrees of translucency through teeth and dental materials. When illuminated, opals and enamel will transilluminate the reds and scatter the blues within its body; thus, enamel appears bluish even though it is colorless. The opalescent effects of enamel brighten the tooth and give it optical depth and vitality.

Glossary of Prosthodontic Terms defines shade selection as the determination of the color and other attributes of appearance of an artificial tooth or set of teeth for a given individual. The scientific and artistic aspects of the shade selection process have been placed into four main categories: Physical and optical properties of the tooth being viewed; Nature of light to which the tooth is exposed; Assessment of tooth shade by an observer; Relationship of the tooth to its surrounding colored structures.

Physical and optical properties of the tooth being viewed

The most important physical property related to a tooth's shade is its moisture content. If any tooth is allowed to dry out, its color tends to appear lighter and less saturated. This drying out occurs towards the end of a dental procedure, especially under rubber dam isolation and while making addition silicone impressions. It then takes almost 20–30 minutes for the tooth color to return to its baseline values. Hence it has been recommended to make shade selections at the start of a dental procedure rather than at its end. The optical properties of a tooth result from an interaction between its internal structure (pulp, dentinal tubules and hydroxyapatite crystals) and external features (tooth size, shape and surface texture)

Nature of light to which the tooth is exposed

The light source being used is one of the most important and frequently one of the most neglected aspect during shade selection. The colour of an object can change depending on the light, e.g. tungsten light may cast a yellow colour compared to daylight. The property of light source to influence colour of objects is called "colour rendition". There are three main illuminants within any dental practice: natural, incandescent and fluorescent. Natural sunlight is itself variable with light appearing blue at noon when the sun has fewer atmospheres to penetrate and red/orange during the morning and evening. Incandescent lighting is predominantly red/yellow and lacking in blue while fluorescent lighting is high in blue tones and low in red. There are special lights (Figure 2) that are colour corrected to emit light with a more uniform distribution of

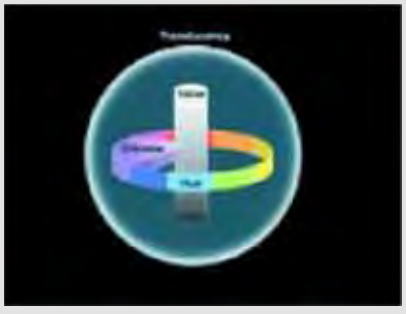

Fig 1: Dimensions of Colour

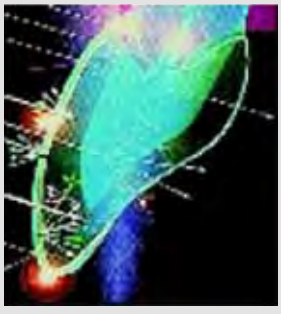

Fig 2: Science of Colour

Fig 3: Vita Classical Shade Guide

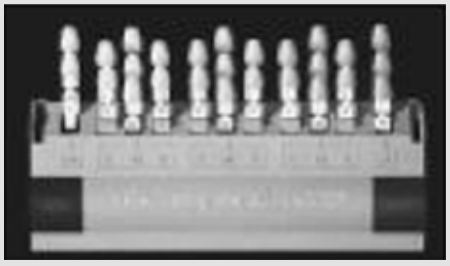

Fig 4: Vita 3D Shade Guide

Fig 5: Vita Easy Shade

Fig 6: Shade Vision

Fig 7: Shade Scan

colour that can be utilised. Initial shade selection should be initially made with these lights then the shade should be matched under different lights to avoid metamerism (the phenomenon that occurs when shades appear to match under one lighting condition and not another).

Assessment of tooth shade by an observer

Tooth shade assessment involves determination of the target tooth color in the clinic or in the laboratory. This process is based on human vision physiology and its influencing factors. The difficulty of shade selection is that clinicians must be able to interpret a multi-layered structure of varying thickness, opacities and optical surface Characteristics. Tooth shade can be determined either visually with the help of ceramic shade guides or instrumentally with the help of electronic devices (colorimeters, spectrophotometers) and computerized techniques (digital image analysis). Both methods carry their own merits and demerits. Although the instrumental method provides objective, quantifiable, reproducible and more rapidly obtainable shade selections, but it has limited acceptability in clinics due to increased equipment cost, operational difficulties and lack of standardization. On the other hand, the visual method is subjective and inaccuracies are known to arise due to a variety of reasons. However, it still remains the most commonly used method in clinical dentistry because it is quick and cost effective, and with proper training and setup a high degree of accuracy is possible.

Relationship of the tooth to its surrounding colored structures and surfaces

Tooth color perceived by an observer is influenced by other colored structures surrounding the tooth such as adjacent teeth, gingiva, lips, face skin, clothing of the patient and operatory walls. Gums and lips form the soft tissues immediately adjacent to the teeth and can influence the apparent color through the phenomenon of contrast. Anterior teeth usually have slightly different colors according to their position within the arch e.g. maxillary central incisors are the lightest teeth whereas the canines are relatively redder, yellower and more saturated with color. Likewise, maxillary anterior teeth are slightly yellower as compared to mandibular anterior teeth.

Types of shade guides

The most popular shade guides are:
Vita Classic
Vita System 3D-Master
Chromascop
Custom or specific chroma and value guides

The Vita System 3D-Master consists of 11 fired porcelain tooth shaped samples built up with cervical, dentinal and incisal powders and composed of feldspar nepheline and high temperature ceramic pigments. The 11 sets consist of 26 samples ranging from lightest to darkest value, from lowest to highest intensity and from yellow to red. Vita Value, Chroma and Hue correspond similarly to Munsell value, hue and chroma representing the three dimensions of colour. The tabs are grouped into 5 categories, sequentially numbered with increasing value (1-5). All tabs within the value group have the same brightness. In each of the groups the chroma increases from top to bottom. All the groups except 1 and 5 have 3 letters: L, M, R, which allows the hue to be chosen. L (light) is yellow, M (medium) is yellow-red, and R is a red hue. Documenting of this shade is with a number/letter/number system. The first number indicates the value group (1-5), letter is the hue (L, M, R) and the chroma (1-3). E.g. 3M2 is the 3rd value group, M hue sub-group, and 2 chroma level.

Guidelines for Shade Taking

- When matching teeth, the shape, surface geography, and the value are the most important characteristics.
- Create a neutral colored environment. When looking at a bright red, the cones in our eyes will saturate and fatigue quickly giving an afterimage of the complimentary color blue-green. Your color assessment of the teeth will be too blue.
- The color of the walls in the operatories and lab can alter color perception. In a blue room you see more orange than is actually present since the complement of blue is orange. The ideal background color is neutral gray. Neutral gray has no complimentary color and is restful to the cones. This is more critical with aged teeth that have a glossy surface that reflects the shade of any color placed in close proximity.
- Hold the shade tab incisal edge to the incisal edges of the teeth. This effectively isolates the shade tabs from the teeth so they don't reflect onto each other reducing afterimages.
- Due to the variability of daylight, blinds should be used, and a color corrected light source of the proper intensity should be used. Use a gray bib to cover the patient's clothes and remove or cover any lipstick.
- Viewing teeth under diffuse illumination will minimize the distortion of the reflected light. Reflection from the specular surfaces of a tooth reveals more of the color of the illuminating light than the color of the tooth.
- Value is the most important dimension of shade rendering. Use the value guide first.
- All shade guide selection should be done BEFORE you turn on the dental unit light. This light is too bright and causes eye fatigue due to glare. The rods in our eyes are sensitive to lightness / darkness or gray scale. Rods are very sensitive even with small amounts of light. The cones only become activated with higher light levels. When the

cones are functioning, then hue and chroma can confuse value discrimination. Low light levels are the best for value evaluation. If the light is too strong, the high reflectivity of the buccal surface will read high incorrect values. Another reason to do shade selection before treatment is due to dehydration. The value increases and the chroma and translucency decrease as the teeth dry out during treatment.

- First impressions are the best due to eye fatigue. Don't stare at the teeth for more than 5 seconds to prevent hue accommodation.
- Choose basic shade at the middle of the tooth - using the Vita System 3D-Master technique of value, chroma then hue. Use blue card to avoid chromatic adaptation. Viewing tabs through half-closed eyes can decrease ability to discriminate colour but increases the ability to match value. Look at the other parts of the teeth, dividing the teeth into 9 sections from apical to incisal, and mesial to distal.
- Shade map in a 3-D drawing all that is seen. Use multiple views (eg, 90-degree straight buccal, straight incisal/occlusal). Break the labial face of the crown into zones.
- If the teeth have prominent surface anatomy, this must be replicated because the surface determines the amount and direction of light reflected to you from that angle. The pre-op models will help duplicate these contours.
- Different light wavelengths reflect off a rough surface in different ways. Shades should be evaluated looking at the tooth at different angles. This reevaluation at different angles is called vectoring. Due to the curved translucent surfaces found on teeth, the anisotrophic properties of enamel, and the complex layering of the tooth structure, vectoring will allow the operator to identify colorations within the layers of the tooth and to visualize the translucent areas. Sometimes the value of the gingival and incisal thirds of a tooth is seen as lower than it actually is due to the natural curvature of the tooth.
- Most humans have eye dominance and one eye will preferentially perceive shade. It is wise to hold the shade guide on both sides of the tooth at each vector.
- Describe surface texture and luster as heavy, moderate, and light therefore giving nine different combinations of surface characteristics. Because these surface features determine the character of light reflection and affect the amount of light that enters the tooth (opacity), the surface texture of a crown must be designed to simulate the light transmission and reflectance pattern of adjacent teeth.
- Photograph teeth and tabs using different lighting conditions to minimize metamerism, e.g. flash (5500K) and natural daylight (6500K).
- Photograph teeth at a 1:1 ratio for detailed characterisations.
- Send digitised images and shade map to ceramist.

Stump shade selection

With the increasing use of all-ceramic restorations, it is important to communicate the prepared tooth or "stump" shade to the ceramist so that they can build the restoration with the right opacity/translucency. It may be necessary as in to use a more opaque ceramic to block out discolouration, e.g. an alumina- or zirconia based restoration may be a better choice than a glass-based ceramic like Empress.

Instrumental assessment

In selecting shades, different devices are to assist in selection of shades, e.g. Shade Vision, Shade Pilot, Vita Easyshade. This may eliminate clinician subjectivity.

There are 3 basic types of devices used:

1. Spectrophotometry e.g. Vita EasyShade.
2. Colourimeter e.g. ShadeVision.
3. Digital camera and RGB devices e.g. ShadeScan.

► Conclusion

Knowing how light interplays with the surface and internal layers of teeth is beneficial in the creation of an artificial replacement of tooth structure. Faithfully matching the optical properties of each layer increases the likelihood of a good match and decreases the problem of metamerism Both clinician and technician need to understand the nomenclature of visual effects. Clinicians should create the optimal environmental circumstances in the shade matching process so that all that there is to see can be seen without distortion. When matching teeth, the shape, surface geography, value, translucency, chroma, and hue are all important characteristics.

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Effect of low intensity pulsed ultrasound on periodontal tissues

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Abstract

Low intensity pulsed ultrasound (LIPUS) is an acoustic radiation of noninvasive nature delivered at a lower intensity than traditional ultrasound. LIPUS has descriptive effect on periodontal tissues, it repairs root resorption by promoting cementoblastic differentiation, accelerates periodontal wound healing after flap surgery and promotes bone repair and regeneration. It demonstrates anabolic effect on different periodontal cells include gingival fibroblasts, cementoblasts, periodontal ligament cells and bone cells. LIPUS enables regeneration of periodontal tissue by stimulating periodontal cells to enhance differentiation, thereby helps in regeneration. This review emphasis the effect of LIPUS on periodontal tissues and its application for periodontal regeneration.

Key words: Low intensity pulsed ultrasound, Regeneration, periodontal tissue.

KDJ 2015 | Vol. 38 | No. 2 | Pg 114-117

► Introduction

Periodontal disease is a major public health issue. Regenerating periodontium which is lost as a result of periodontal disease implies reconstruction of lost tissues. Tissue engineering in periodontology applies the principles of engineering and life sciences towards the development of biological techniques that can restore lost alveolar bone, periodontal ligament and root cementum.

The cells of the periodontium when appropriately triggered, have the capacity to restore connective tissue including mineralized tissue. Periodontal ligament cells possess potential to restore the hard and soft periodontal tissues into their original architecture[1]. The cells of the periodontal ligament promote alveolar bone and cementum formation and may produce periodontal ligament fibers[2]. The bone when subjected to mechanical stimuli have shown phases of bone remodelling suggestive of its regenerative potential[3]. Cementoblasts and osteoblasts perform similar molecular properties and the ability to promote mineralization[4].

Low intensity pulsed ultrasound (LIPUS) plays an important role in the metabolism of periodontal cells and tissues. The cells which are sensitive to LIPUS exposure includes bone cells, cementoblasts and osteoblasts like cells. Bone regeneration by LIPUS stimulation is a classical therapeutic modality and its efficiency has been widely reported over the year.

Low intensity pulsed ultrasound:

LIPUS is an acoustic radiation, into the living tissues that can be transmitted as pressure waves resulting in biochemical events at the cellular level.[5] It is clearly an ultrasound energy, but delivered at a much lower intensity (Wcm^{-2}) than traditional ultrasound energy, with the common application being at $30mWcm^{-2}$ ($0.03Wcm^{-2}$). Ultrasound pulse delivered by LIPUS machine is at 20% (1:4) and at 1000Hz (1kHz) therefore there are 1000 cycles per second, each cycle is thus 1/1000 of a second (i.e. a millisecond). In that millisecond, there will be 20% ultrasound and 80% not ultrasound. The ultrasound on cycle will be 0.2 milliseconds (200μs or 200 microseconds) followed by a gap of 0.8 milliseconds (800μs). LIPUS is applied directly on the defect and it is a form of mechanical energy of noninvasive in nature that demonstrated anabolic effects on different cells including gingival fibroblasts[6], cementoblasts[7], periodontal ligament and bone cells invitro[8]. In vivo studies demonstrated that LIPUS accelerates tooth eruption and dental tissue formation in rabbits[9], to enhance periodontal wound healing after flap surgery in dogs[10] and to increase cementum and dentin formation in human patients as a defensive mechanism to repair resorption induced by orthodontic treatment[11]. LIPUS has ability to enhance mandibular growth in growing baboons[12], enhance bone growth into titanium porous implants[13], accelerates healing by reparative cementum formation in resorption site[11], enhances healing after bone fractures[14] and in mandibular osteodistraction[15].

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Biological mechanism of lipus:

Invitro studies show LIPUS stimulates bone and other cells, indicating that ultrasound exerts direct anabolic effects such as production of growth factors and other signalling molecules, osteogenic differentiation and extra cellular matrix production[16]. The LIPUS cause anabolic biophysical effects by mechanical stress and / or fluid micro-streaming impacting on the cellular plasma membrane , focal adhesion and cytoskeletal structures to trigger intracellular signal transduction and subsequent gene transcription[17].

Flow chart showing biological mechanisms of lipus on periodontal cells

LIPUS

↓

Cause anabolic biophysical effects

↓

Mechanical stress and/ or fluid micro-streaming

↓

Impacts Cellular plasma membrane and cytoskeletal structures

↓

Trigger intracellular signal transduction

↓

Subsequent gene transcription

↓

Production of growth factors and other signalling molecules

↓

Osteogenic differentiation and extracellular matrix production.

Effect of lipus on periodontal ligament cells

In response to orthodontic forces and mechanical stress caused by occlusal forces, remodelling of the periodontal ligament and alveolar bone occurs. These indicate that responses of the periodontal ligament to mechanical stress are involved in its cell proliferation and differentiation. At the perivascular area in the middle portion of the periodontal ligament, precursor cells of cementoblasts are present and shows greater differentiation toward the surface of the root[18]. Periodontal ligament cells can express bone associated molecules and proteins such as alkaline phosphatase(ALP), osteopontin (OPN) and osteocalcin[19,20]. ALP was measured in reference to total DNA concentrations of the cells. This provides information about cell activity and is an indicator of mineralization. The results of both ALP/DNA and qPCR (quantitative polymerase chain reaction) indicate that LIPUS increases the mineralization potential of periodontal ligament cells when cultured in basic medium[21].

LIPUS is effective in releasing fibroblast growth factors from a macrophage-like cell line.[22] LIPUS enables regeneration of periodontal tissue destroyed by periodontal disease and acceleration of the repair of root resorption by promoting cementoblastic differentiation of human immature cementoblasts from the periodontal ligament thereby promoting the formation of substrate and ALP activity[23].

Effect of lipus on gingival fibroblast

Gingival fibroblast synthesize collagen and plays a major role in the development, maintenance and repair of gingival connective tissue. Daily LIPUS treatment protocol of 20 minutes for a period of 4 weeks has a benefit effect on gingival epithelium cells, accelerating periodontal wound healing after flap surgery[24]. In other studies using gingival epithelial cells, LIPUS accelerates soft-tissue healing by increasing the expression of connective tissue growth factor (CCN2/CTGF), an important gene for wound healing and angiogenesis in periodontal tissues[25]. ALP is considered an early marker for osteoblast[26] and cementoblast[27] differentiation. LIPUS stimulation (5 min/day) enhanced the differentiation of human gingival fibroblast, as evidenced by the significant increase of ALP activity and OPN expression. OPN is an extracellular matrix protein that is expressed in the early stages of mineralized tissue development. LIPUS stimulation of odontoblast-like cells resulted in the significant increase of OPN expression[28].

Effect of lipus on bone cells

The bone which is stimulated mechanically is of a great importance for maintaining the bone mass and structural stability of the skeleton. When bone is mechanically loaded, movement of fluid within the spaces surrounding bone

cells generates fluid shear stress that stimulates osteoclasts and osteoblasts, resulting in enhanced anabolic activity for bone remodeling with appropriate bone resorption and the subsequent new bone formation. The mechanisms such as mechanotransduction process, by which osteoclasts or osteoblasts convert the external stimulation from fluid shear stress into biochemical changes, remain unclear[29].

The physical pulses from the LIPUS mechanically stimulate the bone cells to be active, causing the cells to absorb as much calcium as they can in order to activate protein kinase A, which may leads to the differentiation of osteoblasts[30]. LIPUS can promote bone repair and regeneration, accelerate bone fracture healing, and enhance osteogenesis at the distraction site[31]. In vitro studies shown that LIPUS stimulation can enhance expression of bone formation-related genes such as collagen type I and X, aggrecan, transforming growth factor beta 32, runt related gene-2, osteocalcin[33], insulin-like growth factor-I, bone sialoprotein[34] and alkaline phosphatase[35]. In addition, LIPUS promote protein synthesis and calcium uptake in various osteoblastic cell lines[36]. Moreover, LIPUS stimulation enhances COX-2 gene expression and subsequently enhances endogenous prostaglandin E2 (PGE2) synthesis in various osteoblastic cell lineages, playing an important role in bone remodeling[37].

Effect of lipus on cementoblast

Cementum is the calcified, avascular mesenchymal tissue that forms the outer covering of the anatomic root that assists in anchoring teeth to surrounding alveolar bone, maintaining the structural stability and physiological function of the dentition[38]. The adverse outcome of orthodontic treatment is root resorption. The cementum layer covering the root surface plays an important role in preventing resorption during tooth movement. In addition, the damaged areas of the root are also repaired in part by cementoblasts lining the root surface.

Cementum metabolism is controlled by mechanical stimulus. In vivo studies show that mechanical loading enhances the expression of phenotypic makers such as osteocalcin and bone sialoprotein in cementoblast[39]. Regarding ultrasound stimulation, LIPUS prevented root resorption during experimental tooth movement in humans[40]. The expression of several genes which are related to mineral metabolism in mouse cementoblasts is up-regulated by LIPUS[41]. LIPUS simulation also significantly up-regulates COX-2 mRNA expression and enhanced PGE2 production inducing cementoblastic differentiation and matrix mineralization through EP2/EP4 prostaglandin receptors pathway[42].

The inhibitory effect of LIPUS is also reported, a 21-day LIPUS application on root resorption using an experimental model of tooth replantation involving luxation and immediate replacement of maxillary first molars in rats[43]. The results evidenced that the LIPUS treated sample showed decrease in areas of root resorption lacunae. LIPUS treated sample do not show immune expression of tumor necrosis factor alpha (TNF-α)as was evident as in the control sample. In addition, it was shown in vitro that LIPUS may contribute to the reduction of the trauma-induced inflammatory reaction through impairment of the TNF-α signaling pathway, suggesting that LIPUS shows potential as a therapeutic tool to optimize the regenerative potential of periodontal tissues on replanted teeth[43].

► Discussion

LIPUS enables regeneration of periodontal tissue destroyed by periodontal disease and it noninvasively stimulates periodontal ligament cells, cementoblasts, osteoblasts and fibroblasts to enhance differentiation thereby helps in regeneration.

Precursor cells of cementoblast which is present at the perivascular area in the middle portion of the periodontal ligament shows cementoblastic differentiation when exposed to LIPUS and enables repair of root resorption. Gingival fibroblast plays an important role in the development, maintenance and repair of gingival connective tissue, LIPUS stimulation enhances the differentiation of human gingival fibroblast with significant increase of ALP activity and OPN expression. When bone is mechanically stimulated, bone remodelling occurs. LIPUS stimulation leads to bone remodelling by enhancing COX-2 gene expression and subsequently enhances PGE_2 synthesis in various osteoblastic cell lineages. LIPUS stimulation combined with distraction enhanced mandibular incisor growth and eruption. LIPUS enhance cementoblastic differentiation by upregulating COX-2 mRNA expression and PGE_2 production. The effectiveness of LIPUS for bone regeneration is accepted universally. Watanuki et al. (2009) described the use of LIPUS as a tool to optimize gene transfection. In addition, LIPUS presents low toxicity, low immunogenicity, highly targeted selectively and repeated applicability. Still, more studies are required to use LIPUS in routine periodontal practice.

► Conclusion

The availability of LIPUS in dental profession is incipient, despite it is widely used in orthopaedic surgery and rehabilitation. The effect of LIPUS on periodontal cell metabolism enables periodontal regeneration, suggesting that LIPUS can be a promising therapeutic tool for the regeneration of periodontal tissue.

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Association News

Trivandrum Branch

Dentist day was celebrated on March 6th elaborately hosted by IDA TVM branch. Two programmes was arranged first one was a seminar dental college students and a public function. Both the programmes was inaugurated by Dr Aleas Thomas IDA National President. The meetings was presided by Dr KC Thomas president IDA Kerala State president. Felicitations was done by Dr OV Sanal, Dr Achuthan Nair, Dr SangeethCherian. The speakers for the day was Dr Antony Thomas and Dr Santhosh Thomas.

Morning session was carried out at Noorul Islam College Of Dental Science Neyyatinkara Trivandrum. Seminar was under the topic of Dental Ethics. Students from Sree Sankara dental college and Sree Mookambika Institute of dental science also participated. A E-poster competition was also held at the NIMS campus.

Afternoon session was a public function at the government secretariat premises for their employees. Seminar topic was on dental treatments and dental health. An active participation and majority of the employees turned up for the programme. Dr Santhosh Thomas gave an electrifying speech to the public.

Routine clinical club meeting was conducted on march 9 th Monday at IDA office Innu Apartments. A rejuvenating talk on dental extractions was done by Dr Aju Ommen Jacob. A good crowd of our members attended the function.



Tellicherry Branch

Installation of New Office bearer 2015: Installation of Office bearers of IDA Tellicherry Branch was held on 8th February 2015 at Lions Hall, Thalassery, program started at 7 pm. Dr. K.C Thomas, IDA State President was the Chief Guest. Dr. O.V Sanal and Dr. Anil G were the guests of the honor. Dr. Preetha, past president welcomed the gathering. Dr. K.C Thomas installed Dr. Ali KPM as the president of IDA Tellicherry Branch. Other office bearers were also installed. Felicitations were given by Dr. Prathima Sumal, Dr. Anil Kumar, Dr. Prathap Pavithran. Mementos and gifts were presented. Dr. Sujith, the secretary delivered vote of thanks. Installation was followed by entertainment programmes, music night etc.

1st executive meeting was held at Jaycee House, Thalassery on 19th February. 16 executive members were present.

1. Decided to celebrate the Dentist Day by conducting Dental Care.
2. Decided to conduct family tour
3. Decided to conduct CDE in the month of May

2nd executed meeting was held on 22nd March at Jaycee House, Thalassery as instructed by IDA Kerala State. State President Dr K.C Thomas, Hon'ble Secretary Dr. O.V Sanal legal cell convener Dr. Shaji attended the meeting. Separate meeting were held between IDA Tellicherry branch and DERACT and came to conclusion that 10 cents of land will be given to IDA Tellicherry branch for lease free of cost. IDA Tellicerry branch can erect building but cannot handover the land. We are waiting for the final draft from the State Office.

The issue between IDA Tellicherry branch and DERACT was amicably settled by the intervention of the State Leaders.

CDH Activity: 1. Conducted Dental Camp Devidan home (old age home) at Kolayad on March 1st. Examined about 75 patients. Distributed medicines and pastes. Dr. Ali KPM, Dr. Sujith, Dr. Preetha Rajiv, Dr. Jithesh, Dr. Shahana K.C, Dr. Arun Dominic, Dr. Suved Sathiyan attended.

2. Conducted Dental Camp at Jaycee Special School on 5th of March. Dr. Ali KPM, Dr. Shahana, Dr. Sujith participated. Classes on oral hygiene and brushing techniques were given. Distributed tooth paste.

3. Conducted dental camp at Najas High School, Panoor on 5th of March. Examined nearly 500 students. Conducted classes on oral health and oral hygiene maintenance. Dr. Jamsheer, Dr Fathima, Dr. Hannath and Dr. Marwa participated.

4. Conducted dental camp at Safiya Autism Centre, Mahe on 6th of March. Examined 55 students. Took class on oral hygiene. Dr. Jamsheer and Dr. Fathima conducted the camp.

FAMILY TOUR 1. Conducted family tour to Ooty from 3rd to 5th of April. 14 IDA members with family participated. Visited botanical garden, sims park, Coonor, Ooty Lake. Had a wonderful time with family members and kids.


Malappuram Branch

DENTIST'S DAY CELEBRATION Dentist's Day celebration were held at community hall, Valanchery on 6/03/15. The programme was inaugurated by Dr Govindan, President Doctors club Valanchery. Dr. PT Muhamed Sameer, President elect, IDA Kerala State was the chief guest and key note speaker was Mr K M Abdul Gafoor, Member, Jilla panchayath. Mr T P Abdul Gafoor, President, Valanchery Grama Panchayath . Mr T P Moideen Kutty, Member, Valanchery Grama panchayath, MIDA honoured Dr. PT Muhamed Sameer, president elect,IDA Kerala by adorning ponnada. Also a Short Telefilm – 'Burning India to ashes' were played .

CDH Activities 2nd CDH camp was conducted with awareness programmes were conducted at GMLP School, Melatoor in association with Rotary Club, Manchery on 1/2/2015. More than 50 patients were benefitted.

Third CDH camp was conducted with awareness programmes were conducted at Taj auditorium Valanchery in association with Le Malabarian Club, Valanchery on 13/3/2015. More than 40 patients were benefitted.

Fourth CDH camp was held at Kattipparuthi GMLP School along with IMA Valanchery in arogyamythri adoption programme on 10/3/15. More than 100 students were benefitted.

CDE ACTIVITIES

INTER BRANCH CDE 1st inter branch one day CDE was held on 29/3/15 at Hotel Rydes Inn Kottakkal, on topic Implantology revisited. International renowned speaker Dr Ronnen Bordovski was the keynote speaker. Dr Ajay Haridas, Dr Rajgopal Menon Prasad were also the invited speakers. More than 62 members from various branches of all over kerala were participated.

Day Celebrations / Observation 1. Dentist's Day celebration were held at community hall, Valanchery on 6/03/15. The programme was inaugurated by Dr Govindan, President Doctors club Valanchery. Dr. PT Muhamed Sameer, President elect, IDA Kerala State was the chief guest.

Executive committee meetings: 2nd Executive committee meeting held on 3/2/15 from 8pm. onwards at Hotel Hi-Ton, Perinthalmanna. 19 members attended.

3rd Executive committee meeting held on 3/2/15 from 8pm. onwards at Hotel Surya regency, Malappuram, 21 members attended.

Family Tour Programme The family tour of Malappuram was conducted on 29/4/15 to Silver Storm water theme park and Aathirapilli water falls. More than 12 families were participated.

Attingal Branch

EXECUTIVE COMMITTEE MEETING The 2nd branch executive committee meeting was held at Attingal club, on March 3rd Monday at Attingal by 7pm. President Dr Arun Roy welcomed the members. He appealed all members to cooperate in all future programmes. President also discussed about the future programmes of next two months. Meeting discussed about the arrangements made to conduct the inter branch CDE on prosthodontics by Dr K. Chandrasekharan Nair on 8th march. Meeting then decided to conduct a General body meeting on 26th march along with WDC meeting and a talk on any general topic. The meeting also decided to conduct an oral cancer detection camp in a coastal area.

CDE The 1st inter branch CDE with 6 KDC Credit points was conducted at Park centre, Trivandrum on 8th march. The topic was on Removable Partial Dentures and CPD by Dr Chandrasekaran Nair. 129 members attended the CDE.

CDH An Oral Cancer detection camp was organized at Mariyanadu Mary Matha Church on 26th April for the coastal peoples of that village. The aim of the camp was to give awareness of oral cancer lesions to the community.

WDC First WDC meeting was held at Halais Conference Hall on 26th march Sunday at 4.00 pm. The branch Chairperson of WDC, Dr Rakhi Chandran presided the meeting and discussed about the future plans.

GENERAL BODY MEETING First general body meeting of the branch was held at Halais Conference hall, Kazhakuttam on 26th march Sunday at 7 pm. The meeting discussed about the various activities of the branch till date. Accounts was presented by Treasurer Dr Ashok Gopan and it was passed. All the convenors presented their reports respectively. The meeting was followed by a talk on PERSONALITY DEVELOPMENT by renowned JC Trainer Mr. Sanjeev Sukumaran.

Coastal Malabar Branch

CDH WEEK On behalf of centenary celebration of Indian Dentistry, IDA COASTAL MALABAR BRANCH took part in programme "dream-2015" as proposed by IDA Kerala State by conducting 6 CDH activities in 6 different places from March 1st to March 6th.

The 6 CDH activities are as follows

1. 01.03.2015- Fifth CDH activity of IDA CMB Inaugural CDH activity of the CDH week and the fifth CDH activity of IDA Coastal Malabar Branch for the year 2015 was conducted in a old age home (Y's Nivas), Cherupuzha on 01.03.2015 from 08.00am to 10.30pm. Dental checkup and treatment was done for inmates of old age home. Dental checkup was done for 20 inmates.

2. 02.03.2015- Sixth CDH activity of IDA CMB The second CDH activity of CDH WEEK was conducted in a Anganavady at Cherupuzha on 02.03.2015 from 09.30am to 12.30pm. Dental checkup was done for 25 students,10 parents and 5 teachers.

3. 03.03.2015- Seventh CDH activity of IDA CMB The third CDH activity of CDH WEEK was conducted in a Anganavady at Kollada on 03.03.2015 from 10.00am to 1.00pm. Dental checkup was done for 30 students,18 parents and 5 teachers.

4. 04.03.2015-Eighth CDH activity of IDA CMB The forth CDH activity of CDH WEEK was conducted in a Anganavady at Machiyil on 04.03.2015 from 09.30am to 12.30pm. Dental checkup was done for 20 students,15 parents and 4 teachers.

5. 05.03.2015-Ninth CDH activity of IDA CMB The fifth CDH activity of CDH WEEK was conducted in a Anganvady at Koduvally on 05.03.2015 from 10.00am to 01.00pm. Dental check up was done for 23 students, 8 parents, and 3 teachers. Dental awareness class was taken by Dr.Sajan Joseph. Dr.Sajan Joseph,Dr.Muhammed Mishab and Dr.Sooraj Babu took part in this CDH activity.

6. 06.03.2015- Tenth CDH activity of IDA CMB The sixth CDH activity of CDH WEEK was held in a Anganavady at Cheruthazham on 06.03.2015 from 09.00am to 12.30pm. This CDH activity was organised for Anganavady workers. Around 45 Anganavady workers took part in this programme. Dental awareness class was taken by Dr.Pratap Pavithran. Dr.Pratap Pavithran and Dr.Mohammed Aslam took part in this CDH activity.

DENTIST'S DAY CELEBERATION-06.03.2015 Dentist's Day celebration for the year 2015 was held at Hotel J.K Residency, Cheruvathur on 6th March 2015,Friday from 07.00pm onwards. Secretary Dr.Rahul Nandakumar collored the President and the programme was called to order by President Dr.Pratap Pavithran. Inauguration of Dentist's Day celebration was done by Charter President, Dr.K.T Suresh and Dr.Vimala Suresh. Honouring of our past presidents(13 Presidents) was done at this event. The new members(17 members) of our branch were recognised by awarding membership certificate. Installation of Women's Dental Council was done by the Guest of Honour, Dr.Shoma Anil, Secretary, Women's Dental Council. Dr.Suja Vinod was elected as the Chairperson of Women's Dental Council,Dr.Reshmi Jayakrishnan as the vice-chairperson and the Dr.Smitha Ashil as the Secretary. Releasing of the first issue of our magazine "THE MIRROR" was done at this event by Dr.Subramanya Bhat and handing over the first copy to Dr.Santhoshkumar.P . Clinical experience classes were taken by our senior members Dr.K T Suresh, Dr.Subramanya Bhat and Dr.Santhosh.Kumar.P. Vote of thanks was offered by Dr.Ashil.Mohandas,Treasurer, IDA Coastal Malabar Branch .

INTERNATIONAL WOMEN'S DAY-08.03.2015 IDA Coastal Malabar Branch in association with Payyannur Municipality Kudumbasree CDS organised"OBSERVATION OF INTERNATIONAL WOMEN'S DAY" on Sunday March 8th 2015,at 09.30am at Swami Anandatheertha Smaraka Mandapam Hall, Sree Narayana Vidyalaya, Near Govt.Hospital, Payyannur.Smt.K.V Lalitha, Chairperson, Payyannur Municipality was the chief guest of the programme. Dental health education class was taken by Dr.Santhosh Sreedhar. Dental checkup camp was organised. Dr.Vimala Suresh was honoured on this day.

ORAL HEALTH DAY- 20.03.2015 IDA Coastal Malabar Branch celebrated ORAL HEALTH DAY on 20.03.2015 by conducting a CDH activity in St. Sebastian Hospital, Cherupuzha. Dental awareness classes were taken for 25 pregnant ladies. Dr.Sajan Joseph and Dr.Sweatha Sooraj took part in this CDH activity.

SECOND EXECUTIVE COMMITTEE MEETING - 30.03.2015 Second Executive Committee meeting of IDA Coastal Malabar Branch was held on 30.03.2015 at hotel J.K Residency, Cheruvathur at 08.00PM. Secretary Dr.Rahul Nandakumar collored the President and the meeting was called to order. Secretary Presented the minutes of the first executive committee and was passed by the executive members. We discussed the CDE and CDH activities for the next quarter. State level CDH activity was finalised for the Anti Tobacco Day on May 31st and a committee was formed for the same. Second CDE programme was finalised to be conducted on April 12th 2015 at Hotel, KBC Green Park,Edat,Payyannur from 09.30am to 02.00pm.

SECOND CDE PROGRAMME- 12.04.2015 Second CDE Programme for the year 2015 of IDA Coastal Malabar Branch was held at Hotel KBC Green Park,Edat,Payyannur on 12.04.2015 from 09.30am to 02.00pm. The faculty of the programme was Dr.Anupam Kumar (Professor, Department of Pedodontics, Government Dental College, Calicut). The topic was "PAEDIATRIC DENTISTRY FOR THE GENERAL DENTAL PRACTITIONER".The programme was a half day programme and it was a well attended one. 49 members attended the CDE programme. On the same day vishu kit was given to 6 cancer patients. This programme was organised by our Women's Dental Council in association with Pain and Palliative Association.

Quilon Branch

1. The second GB meeting of IDA Quilon branch was held on 6th March 2015 on Dentist day at Lions hall Kollam.
   As a part of dentist day celebration an inaugural function of school dental health programme was done by jilla panchayath president Mr. Jayamohan at St. Antonys School Vaddi at 2pm on march 6th.
   A. Highlighted the event by delivering a talk on oral cancer for public awareness by Dr Sudheesh Manoharen MDS.
   B. Same day along with GB meeting honouring of senior dentist with practise over 25 years
2. 11nd CDE programme by Dr. Devi Sree Naveen MDS periodontist topic- periodontal disease- a clinical diagnose
3. 2nd ECM was held on 6-4-15 at hotel Ritz Kollam, future project like oral cancer detection along with Quilon jilla panchayath funded by the government and asap were discussed.
4. March 8th women's day programme on womens day at Mahila Mandhir Karicode at 10am an orientation class along with counciling to the inmates of Mahilamandhir by Adv. Sowmya.
5. Oral health week from march 1st to March 6th, our members conducted health education classes in various schools in different locations at Kollam district.
6. 3rd GB meeting was held on 27-4-15 at hotel ritz.
   3rd CDE programme was held on 27-4-15 at lions hall Kollam
   Topic..**Cast partial denture** Speaker..Dr. Smitha Sara Manoj MDS



Kunnamkulam Branch

The past President of our Branch Dr. Gigu I. Cheeran expired on 26th February 2015. A condolence meeting was held on 28th February at Chungath Tower, Kunnamkulam.

The second executive meeting of IDA Kunnamkulam was held on 23rd March 2015 at Hotel Samudra, Chavakkad. Decisions regarding the programmes the be held in the coming months was planned.

CDE Activities Third CDE of our Branch was held on 23rd March 2015 at Hotel Samudra, Chavakkad. Faculty Dr. Biniraj presented on 'DIAGNOSIS AND PRACTICE MANAGEMENT IN PERIODONTICS'. Programme was started by welcoming the gathering by the President. The talk was very informative and we had the maximum number of participation.

CDH Activities On Request from BPHC Marenchery Medical Officer, a dental screening camp was conducted on 24th March 2015 at SPECTRUM School for the disabled by Dr. Mohammed Faris and parent Education talk was given by Dr. Sunil Mohammed.

The swimming camp for IDA Kunnnamkulam Family Members st.arted on April 15th 2015 at Commate Circle, Kunnamkulam

Wayanad Branch

Second executive committee was held at IMA hall Manandhavady and 16 members attended the meeting.

DENTIST DAY CELEBRATIONS We have celebrated dentist day on March 6th 2015 at Mundery Residential Tribal School, Kalpetta as part of dentist day celebration. Our branch honoured senior dental surgeon, Dr.M.Damodaran. We have honoured four pain and palliative workers from different part of Wayanad district on march 6th.

CDH Activity.

1. We have conducted oral screening camp for 100 tribal students at Mundery Residential Tribal School. Oral hygiene instructions were given and oral hygiene materials distributed. District zilla panchayath president Mr. N.K.Rasheed inaugurated the function.
2. Dr Sam, Dr Arun Sebastian and Dr Shanavas P conducted an oral screening camp at Eminent Public School Kavumandham.
3. Dr Ranjith C.K and a team of doctors conducted Oral screening camp at Thonichal public School.

WORLD WOMEN'S DAY CELEBRATION. IDA Weaned celebrated world women's day at hotel Pankaj, Kalpetta on 8th March 2015,and honoured Dr.V.J.Mary, senior lady dental surgeon.

CDE IDA Wayanad branch conducted CDE programme on Minor oral surgical procedures, management of complications by Dr. Adrash S Indra, Professor, Department of OMFS, Coorge Institute of Dental Science, Virajpet. The programme was very informative and attended by large number of branch members. Kerala Dental Council allotted 6 credit points to the participants.

Dr Shanavas P presented a paper on assessment of periodontal health status and its association with smoking habits in Paniya Tribes of India at 16th world conference on tobacco held in Abudabi, UAE.

Malabar Branch

CDE No.1 First CDE of IDA Malabar was held on 01/03/2015 at IDA hall. The topic of CDE was Laser in General Dentistry. The CDE programme was inaugurated by Dr.Nizaro Siyo (Past President IDA Kerala State) at 9.30 AM in the Presence of Dr.Saju NS President IDA Malabar Branch. One Hundred and Ten Members attended the CDE including many senior and Junior Members. Faculty of CDE was Dr.Simple Varghese MDS, M.Sc Laser Dentistry(University of Genoa,Italy) Dept of Periodontics Al Azhar Dental College. The programme includes one hour lecture, one hour symposium including slide show and case discussions & a panel discussion for one hour followed by lunch. The panel for Discussion includes Dr.Harish Kumar MDS HOD Dept. Of Periodontics KMCT Dental College, Dr. Manoj KP MDS HOD Dept. Of OMFS KMCT Dental College, Dr.Manoj A Senior Gen Practitioner. The certificates of CDE programme was distributed to members by Dr. B Madhavankutty CDE Convenor IDA Malabar branch. Vote of Thanks were delivered by Dr.Sudheer KT IDA Malabar branch

CELEBRATION OF DENTIST DAY Dentist day celebration was held on March 6th at Shanthi Bhavan. Shanthi Bhavan is situated in Cheruvannur nearly 9 KM away from Kozhikode City. The programme started at 9.30 am and was inaugurated by Dr.Saju NS President IDA Malabar branch. Oral health orientation programme and check up camp was conducted at Shanthi Bhavan. The programme was really colourful with various entertainments such as live Music and songs. The lunch was arranged and served by members of IDA Malabar branch to the inmates and had lunch with inmates. A musical instrument (Thabala) was donated by Dr.Joseph CC Senior member IDA Malabar branch to the inmates. Dr.Sudheer KT (Sec IDA Malabar branch) distributed dresses to inmates of Shanthi Bhavan.

CELEBRATION OF WOMEN'S DAY International Women's Day was celebrated on 8th March at Sukritham Gardens. Sukritham Gardens is a home for financially backward girl children which is situated near Kakoor which is 15 KM away from the Kozhikode city. There were around 35 inmates in between 5 to 17 years of age. Members of Team IDA Malabar branch along with their families at 6.pm at Sukritham Gardens. The programme was inaugurated by Dr.Nizaro Siyo IPP IDA Kerala State in the presence of Dr.Saju NS President IDA Malabar branch followed by a personality development class taken by Dr.Binu Purushothaman HOD Orthodontics Dept. KMCT Dental College. The interaction session was very colourful with various entertainments such as dance by the inmates and also by the children of members of IDA Malabar branch. Dinner to the inmates was arranged by IDA Malabar branch. At the end Dr.Sudheer KT Sec IDA Malabar branch handed over a cheque of Rs.!0,000/- to Mr.Mahadevan the care taker of Sukritham Gardens.

CRICKET TOURNAMENT A 20-20 Cricket Tournament was held on 15/03/2015 at Calicut Medical College ground. IDA Malabar branch became Runners up and Govt. Dental College Calicut became the Champions. Many Senior and Junior members participated and match was conducted on real spirit.

CDH ACTIVITIES

CDH No.4 Dental Screening and awareness camp was held in Apex International School at ollavana Kozhikode on 05/03/2015 and 09/03/2015. 1070 students participated the camp. On behalf of IDA Dr.Mehul R Mahesh and Dr.Tom Jose participated the camp.

CDH No.5 Dental awareness and screening camp was conducted on 22/03/2015 at Edakkad. IDA Malabar branch along with East Canoli Canal Residential Association organised the camp. 120 members participated the camp.

IDA CAMPAIGN AGAINST ILLEGAL DENTAL CAMPS IDA Malabar Branch published an advertisement in all leading newspapers including Malayala Manorama, Mathrubhumi, Times of India and Deccan Chronicle to aware the public about the illegal Dental camps. IDA Malabar branch asked the public not to duped with illegal dental camps by private dental clinics and dental corporates.

Central Kerala - Kottayam Branch

MARCH 2015

EXECUTIVE MEETING 3rd executive meeting was held on March 19th @ Kottayam club, 20 members attended the meeting.

COC MEETING 1st COC meeting was held on 19th March 2015, @ Kottayam club.

APRIL 2015

CDE MANAGEMENT OF EMERGENCIES IN DENTAL PRACTICE &MEDICALLY COMPROMISED PATIENTS, held on 19th April 2015 by Dr. EAPEN THOMAS MDS, Oral &Maxillofacial Surgeon @ Hotel Arcadia 113 members attended the programme.

INAUGURATION Inauguration of website for IDA Kerala State Students Conference done by Dr. Mathew Vayalil on 19th April 2015. Name of students conference, MIRABOLANTE' hosted by Pushpagiri Dental College.

CDH Awareness camp conducted at St. Mary's Orthodox church, Kumpazha.

EXECUTIVE MEETINGS. 4TH executive meeting was held on 28th April 2015 @ Kottayam club, 25 members attended the meeting

COC MEETING. 2ND 49th KSDC COC meeting held on 28th April 15 @ Kottayam club.

Mavelikkara Branch

On 26-03-2015, a combined CDE programme, Dentist's Day Celebration and General Body meet was held at Hotel Kalai, Kayamkulam.

As part of Dentists Day celebration, senior members of the branch who have 30 plus years of service were recognised for their outstanding contributions to the society and for being a source of inspiration to young dentists. Dr. Daniel Varghese, Dr. Saramma Oommen, Dr. Juny Jacob, Dr. Pradeep Kumar P.J. and Dr. Vijayalakshmi collected the Certificates of appreciation.

As a change in the format of continuing dental education, an interesting and useful discussion headed by eminent prosthodontists Dr. Pradeep John George and Dr. Nirmal George Saibu on Removable partial dentures- semi-rigid versus cast partials. The debate was interactive and members had the opportunity to discuss and delve deeper into the pros and cons of the two.

On 19th April, IDA Mavelikara conducted a shuttle badminton tournament for it's members and family, at YMCA indoor court, Mavelikara. Dr. Riyaz and Dr. Sooraj emerged winners while Dr. Pradeep John and Dr. Sajith were runners-up in the well-contested doubles line-up.

On the same day evening, a CDE programme was organized at Hotel Travancore Regency, Mavelikara, in association with GC India. Dr. Joy Kurian, M.D.S., conducted an interesting class on "Problem solving in Restorative Dentistry- A new Innovative Approach". This was followed by a demonstration of single-sitting direct bridge that the patient can receive in 20 minutes.



North Malabar Branch

Executive Committee Meeting:

1. First executive committee meeting was held on 02 – 02– 2015 at I.D.A. Hall, Podikkundu, Kannur.
2. Second executive committee meeting was held on 05 – 03– 2015 at I.D.A. Hall, Podikkundu, Kannur.
3. Third executive committee meeting was held on 23 – 04– 2015 at I.D.A. Hall,Podikkundu, Kannur.

Emergency executive committee meeting:

1. Emergency executive committee meeting was held on 10 – 02– 2015 at I.D.A. Hall,Podikkundu, Kannur.

C.D.E programmes:

1. Topic: Management of Open Apex Venue: I.D.A. Hall, Podikundu, Date: 01-03-2015 Faculty: Dr.C.V.Pradeep
2. Topic: Income Tax Applicable to Dental Professionals Venue: I.D.A. Hall Podikundu Date: 24-03-2015 Faculty: Mr. P. J. Jacob C.A. & Mr. K.Babu C.A.
3. Topic: Non Surgical Vs Surgical Endodontics. Venue: I.D.A. Hall, Podikundu Date: 17 – 04 - 2015 Faculty: Dr.Sanjeev Kunhappan M.D.S [Govt. Dental College, Raipur]

C.D.H Programmes:

1. A dental check up and awareness class where conducted on 06- 02– 2015 at SIRSYED College, Thaliparamba, Kannur. Dr.Subair K. took the awareness class. Around 150 students were examined.
2. A dental check up camp and dental awareness class where conducted on 24-02–2015 at DINUL ISLAM SABHA School, Kannur city. Dr.Faizal C.P took the awareness class Around 300 students were examined.

STATE PROGRAMMES:

AQUIRE- 2015 I.D.A North Malabar Branch hosted the first Kerala state programme, AQUIRE – 2015 at Kannur on 8 – 02- 2015. Dr. C.V. PRADEEP [MEMBER OF KERALA DENTAL COUNCIL] inaugurated the programme. International Trainer JCI Mr. M.A.S Menon took the orientation class.

International women's day celebration: Women's wing of I.D.A North Malabar Branch conducted international women's day celebration conducted on 08 – 03 – 2015. Morning a dental check up camp and awareness class were conducted for the inmates of BALIGA SADAN at Chalad, Kannur. Around 50 patients were examined. Dr.Anil Kumar P.K. took the awareness class. Evening womens day celebration was conducted at BROAD BEAN Hotel, Kannur. Dr. Faizal C.P president, IDA North Malabar Branch welcomed the gathering. Mrs. Roshni Khalid, Municipal Chair Person inaugurated the function. On this occasion the women's wing honoured the senior most women Dental Surgeon of this area Dr. Vimala Suresh. Dr. Sumitha Vishwanath, past President W.D.C. I.D.A N.M.B installed the new president Dr.Shoma Anil. Dr.Shoma Anil installed the new team of office bearers. Dr.O.V.Sanal offered felicitations. Dr.Mahesh Raj, Sec.I.D.A N.M.B Proposed vote of thanks. The function was followed by variety entertainment programmes and dinner.


Kasargod Branch

We had a meeting on Feb 27; at IMA hall, Kasargod.. The CDE topic was

"Partial and full mouth rehabilitation using implant supported prosthesis", by Dr Ajeya (periodontist) Kannur Dental college, Anjarakandy...

Meeting was well attended followed by dinner..

Meeting was sponsored by Denzone Dental Lab

Chalakkudy Branch

We conducted a screening camp in association with lions club on 4th March at Kodakara. We screen almost 250 students from various schools

Our DENTIST DAY celebration was on March 6th at AMMA old age home Mothirakanny. We did screening and treatment for almost 75 inmates. Pastes and medicines were distributed. We contributed and donated some money also

First general body meeting of our branch was on 21st March hotel Meadows Chalakudy. 15 new members were newly added to our branch. A class on energy conservation was also there by Dr K Soman

Our first CDE programme was on 26th of April. Hotel Clay house Muringoor was the venue. Dr George Thomas principal and HOD department of oral and maxillofacial surgery (got dental college Kottayam was the faculty. It was a full day class. 54 participants were there. We got KDC approved 6 credit points also

Our first executive meeting was on 13th February

A screening camp was organised and conducted in association with lions club at Kodakara. We did screening for 250 students from various schools.

Dentist day was celebrated by our branch on March 6th at AMMA old age home Mothirakanny. We did screening and treatment for about 75 inmates. Pastes and medicines were distributed.

Eranad Branch

Installation: On January 3rd 2015, Installation ceremony & New year celebrations were held at City Palace Residency, Wandoor. Dr.K.C.Thomas, President-Elect, IDA Kerala state was the Chief guest & installed Dr.Biju.J.Nair as president. Mr.K.C.Babu, Circle Inspector Wandoor was the Guest of Honour & inaugurated the branch activities for the year 2015 by lightening the lamp. **CDH.** IDA Eranad branch joined Pain & Palliative care society, Perinthalmanna in observing 'World palliative care day' on January 15th 2015 at Municipality Hitech Shopping Complex, Perinthalmanna. Dr.Sameer Secretary IDA Eranad branch participated in Exhibition & awareness program to general public. Awareness program & street play by the students of EMS Nursing & Physiotherapy college were also held.

Republic day was observed on January 26th 2015, at Angavadi, Santhinagar, Wandoor. National Flag was hoisted by Mrs.Praseetha, Chairman, Standing Committee (Health) Wandoor Panchayath. Dr.Biju.J.Nair President IDA Eranad branch was guest of Honour. IDA Eranad branch distributed sweets to all, Dr.Biju distributed pleasantries to children of Anganwadi.

On February 4th 2015 IDA Eranad observed 'World Cancer Day' with Lecture by Dr.Ashique, Dermatologist Al-Shifa Hospital on Cancer-principles for Diagnosis & Management at KFC Restaurant Wandoor 8pm to 9.30pm & followed by 2nd Executive committee meeting.

On February 15th 2015, School dental health & oral care awareness program was held at C.K.A Govt L.P School Vaniyambalam. Mrs.Praseetha, Chairman, Standing Committee (Health) Wandoor Panchayath inaugurated the camp. Around 300 students were screened. Dr.Francis, Dr.Anand, Dr.Biju, Dr.Joe, Dr.Mohsin, Dr.Mithun & Dr.Nisar attended the camp.

On March 8th Dentist's day & International women's day was observed at Peevees Archade, Nilambur with honoring of Senior dentist Dr.Philip & Launching of 'Amma-Oral hygiene awareness program in expecting mothers ' by Dr.Anjana, chairperson,Women's Dental council, IDA Kerala State. CDE on 'Early orthodontic interventions' by Dr.Anjana, MDS was held on the same day from 9am to 1pm. After CDE Family get-together program followed with variety entertainment programs including lightening music, Dance by Dr.Ashique of D 4 DANCE fame, skit by President Dr.Biju's son Master Sai Ganesh & his friends from Nirmalagiri School, Nilambur was mind opening & joyful. The whole program was sandwiched with Mouth watering Malabari feast. 34 members along with their families attended the program.

On April 19th, an Oral hygiene awareness program for senior citizens was held at Hotel Sabrina Perinthalmanna by Dr.Sameer Secretary IDA Eranad for Senior citizen's club Perinthalmanna 11am-1pm

CDE. On February 4th 2015 IDA Eranad observed 'World Cancer Day' with Lecture by Dr.Ashique, Dermatologist Al-Shifa Hospital on Cancer-principles for Diagnosis & Management at KFC Restaurant Wandoor 8pm to 9.30pm

On March 8th along with Dentist's day & International women's day CDE on 'Early orthodontic interventions' by Dr.Anjana, MDS was held at Peevees Archade, Nilambur from 9am to 1pm. 34 members attended the CDE.

On March 29th, CDE on 'Advanced Endodontics by Dr.Pavan Kumar, MDS was held Hiton Hotel, Perinthalmanna 45 members attended the program.

Executive committee meetings:

On 30th December 2015 1st executive committee was held at Hotel Sarafiya Huts, Wandoor at 8.30pm. 7 members attended. On February 4th 2015, IDA Eranad observed 'World Cancer Day' followed by 2nd Executive committee meeting at KFC Restaurant Wandoor 9.30 to 10pm. 10 members attended the program. On April 9th, 3rd executive committee was held at KFC Restaurant.

Kochi Branch

MARCH 2015

On Dentist day (6-03-2015) IDA Kochi Branch Conducted Dental Awareness Programe and Dental check up at Govt: Girls High School, Ernakulam. Headmistress Marykutty Chacko presided the function. Ida Kochi branch President Dr. Siby T Chenannkara, Secretary Dr. Balu Soman, Dr.Bonnie, Dr. Anila and Dr. kaushik were present. Dr. Siby T Chenannkara gave talk on Importance of oral Hygiene. We did Dental check up for 250 students. Also we conducted a smiling competition for students of 1st, 2nd and 3rd standard. Prizes were given for the winners.

On 8-03-2015 IDA Kochi Branch along with Rotary Club Palarivattom,done a Dental check up at Pallithode, Thuravoor. Around 300 people were present. Dr. Siby T Chenannkara, Dr. Balu Soman, Dr. Bonnie, Dr. Anila, Dr. Afzal, Dr. Sajil participated in the camp On 15-03-2015 IDA Kochi Branch had intra branch Cricket tournament at Bharath Matha College Ground, Trikkakara. Presidents 11 V/s Secretary's 11. On 26-03-2015 IDA Kochi Branch had its 3rd monthly meeting and scientific session on "Stem Cells" with specific focus on "Dental pulp Extraction, processing and storage" by Dr. Thomas Manjooran and Dr Subhadra Dravida at Hotel Park Central, Kaloor.

APRIL 2015

On 06-04-2015 IDA kochi Branch conducted a CDE programe with 6 credit points by Dr. Shiva Sankar about "ALL ABOUT ALL CERAMICS" at Hotel Gokulam Park Inn Kaloor Ernakulam. 30 members were present for the said CDE. On 30-04-2015 IDA Kochi Branch had 4th monthly meeting and scientific session on "EVERYDAY IMPLANTOLOGY INCORPORATING IMPLANTS IN ROUTINE PRACTICE "by DR Kiran Kelkar at IMA House Kochi. IDA National President Dr. Aliyas Thomas was the chief guest for the monthly meeting. Dr. Aliyas Thomas released 1st issue of bulletin of IDA Kochi. On same day IDA Kochi released minimum fee for Dental services.



Tripunittura Branch

INAUGURATION OF THE BRANCH

At a glittering ceremony on 28th February , presided by state president Dr K C THOMAS AT Hotel Mermaid Inn Vytilla , the branch was officially inaugurated by IDA National President Dr ALIAS THOMAS .The founder resident was collared by the state president Dr K C Thomas.Hon State secretary handed over the constitution to Dr Kunal viswam and Dr Saji k (Hon Treasurer) and all the office bearers took charge in the presence of Dr Anil g (vice president state), CDH Chairman Dr Subash K Madhavan and senior members and office bearers of neighboring branches.

Spread the smile, the new campaign initiated by IDA Tripunithura was inaugurated by Dr O V Sanal. This program aims adopting inhabitants of orphanages and old age homes and institutions of differently abled children and to meet the oral health needs of them without any fees by IDA Tripunithura members. As a part of this program Sri Poornathreysa Balasramam has already been adopted by the branch.

As a part of school dental education & awareness program, BRUSH AFTER EVERY MEAL was launched by CDH chairman Dr Subash K Madhavan. This program aims spreading awareness about oral hygiene and brushing after every meal in school children. Dr Anil G was presented with the list of CDE Programs by CDE chairman Dr Prabath singh. Miracle Mix –Tripunithura Dental Times was launched by Dr M K James by handing over to Dr Siby chennakkara. Dr Chetana , editor was present on the stage.

We were truly honored by the presence of founder president of IDA Kerala Dr M K James, senior s Dr NV Thomas, Dr George kottam, Dr shehnoy and President of Kochi IDA Dr Siby Chennakkara, Hon Secretary Dr Balu Soman ,WDCA president Dr Anjana.

BRANCH ACTIVITIES

CDH PROGRAMES On 19/01/2015 IDA Tripunithura along with JCI conducted our first school Dental Health Program at Thalacode L P School. The program was inaugurated by Dr Jayan B (branch president) Felicitation was done by Dr Kunal viswam (hon secretary) ,vote of thanks by Dr James Thomas (CDH Chairman). Awareness class conducted by Dr Civi C Pulayath.

CDE PROGRAME First cde programe was conducted at N M Royal county Tripunithura on 22/3/2015 On SINGLE VISIT ENDODONTICS ,programe was conducted by Dr Madhu Hariharan.kerala dental council approved the program with 3 credit points.58 members participated for the programe.

CDE Report

Dr Deebu J Mathew
Convenor CDE

Colleagues,

Season's Greetings!!!

Trusting that everyone is aware of the fact that credit points are a necessity for renewal of Dental council registration at the end of the present term. I would like to emphasise on the point that only a maximum of 25 points can be accumulated each year and a minimum of 20 per year. Please keep in mind that certain topics like Basic life support(BLS), dental jurisprudence and sterilization are mandatory. IDA Kerala state will ensure that these topics are presented in all regions so as to ensure that all IDA members have sufficient points by the year ending.

It is my earnest wish to begin clinical certified courses for the members of our association at affordable prices, given the fact that various agencies and dental manufacturers are at present the major players. To begin with we plan to present clinical courses in 1. Lasers in dentistry, 2. Dental Implantology, 3. Endodontics, 4. Orthodontics.

If you have any suggestions or queries please do feel free to mail me.

We would also like to hold training sessions for those who are interested in becoming CDE faculty as well as those who are faculties at present. This will enable the association to develop a panel of speakers and I request all those dentists who are interested to contact the CDE office and register. Thanking you

Dr Deebu J Mathew
CDE Convenor, IDA Kerala
Mail me at: cdekerala@gmail.com

CDH Report

Dr. Subhash Madhavan
Chairman CDH

IDA "dream" week – 2015

(Dental Relief and Awareness Mission)

CDH of IDA Kerala state had the pleasure of conducting the official inauguration of the State wide Dental Awareness Week Project on 1st of March 2015 at Attapadi. After a prayer State CDH Chairman Dr. Subash Madhavan welcome the gathering and also emphasized the important of the project. Ida Kerala State President Dr. K.C. Thomas presided the Function and Adv: Shamsudheen MLA was given the privilege of inaugurating the event.

After lighting the traditional lamp the Chief Guest Dr. Alias Thomas (IDA National President) spoke about the social commitment of Ida towards the Society. State Secretary Dr. O.V. Sanal stated that today was just a beginning for more events to follow. Ida Kerala State President Elect Dr. Muhammed Sameer .P.T, State 1st Vice President Dr. Anil.G, State CDE Chairman Dr. Deebu Jacob were also present to grace this auspious event.

Ida Valluvanad President Dr. Sreekanth proposed the vote of thanks. After the Inaugural function the meeting was adjourned for dental awareness class by Dr. Joji George for the tribals and the local residents in the area.

Ida "dream" for tribals – 2015

(Dental Relief And Awareness Mission)

On the 1st of March this year 2015, we the members of IDA Kerala state had the pleasure of donating a dental clinic to the tribal population of Attapadi. The clinic established by the IDA Kerala State was mission accomplished by associating with the Vivekanandha Medical Mission Hospital Agali.

Dr. Alias Thomas, IDA National president graced the function by inaugurating the dental clinic. Ida Kerala State President Dr. K.C. Thomas, State Secretary Dr. O.V. Sanal, President Elect Dr. Mohammed Shameer P.T, 1st Vise President Dr. Anil.G, State CDH Chairman Dr. Subash Madhavan, State CDE Chairman Dr. Deepu Jacob, Ida Valluvanad President Dr. Sreekanth.S were all a part of this Fabulous team that propelled this great humanitarian dream.

In this Occasion State CDH Chairman Dr.Subash Madhavan mention that the State has decided to adopt ten tribal colonies and provide free dental care. The maintenance required for the smooth running of this dream project will be done by all the doctors of IDA Valluvanad.

WDC Report

Women's Day Celebrations The International Women's Day Celebrations were held in a grand manner.

- A CDE was conducted on EARLY ORTHODONTIC INTERVENTION at Hotel Peevees Arcade Nilambur. Dr Anjana.G Chairperson was the faculty.
- A Poster on Oral Health Awareness in expecting mothers was launched on the same day by Dr Anjana.
- An Oral health awareness class and a check up camp was conducted for the inmates of Mookambika Balasadan,Kannur. We appreciate the efforts taken by IDA Ernad and IDA North Malabar for hosting both the programmes.

  We also appreciate IDA Malabar and IDA Coastal Malabar for conducting the Women's Day Celebrations in an excellent manner.
- An initiative was taken by WDC Kerala State and IDA Kochi along with COGS (Cochin Obstetrics and Gynecological Society) to make anticipatory guidance and prenatal dental care mandate for all pregnant women.