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VĀGBHAṬA

Vāgbhaṭa is one of the most influential classical writers of ayurveda. Several works are associated with his name as author, principally the Aṣṭāṅgasaṅgraha and the Aṣṭāṅgahṛdayasaṃhitā. Both works make frequent reference to the earlier classical works, the Carakasaṃhitā and the Suśrutasaṃhitā. Vāgbhaṭa is said, in the closing verses of the Aṣṭāṅgasaṅgraha, to have lived in Sind (today in Pakistan), and to have been the son of Siṃhagupta and pupil of Avalokita. He was a Buddhist, as is shown by his explicit praise for the Buddha by name at the start of the Aṣṭāṅgasaṅgraha, and his praise of the Buddha under the title “Unprecedented Teacher” in the opening verse of the Aṣṭāṅgahṛdayasaṃhitā. As per modern scholarship he was an ethnic Kashmiri. Vagbhata was a disciple of Charaka. Both of his books were originally written in Sanskrit with 3000 sutras. According to Vagbhata, 85% of diseases can be cured without a doctor; only 15% of diseases require a doctor.

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

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President's Message

Dr. Nizaro Siyo

Dear colleagues,

I am extremely happy to address you through this third edition of KDJ for the year. My term as your president is half way through. I am happy to say that I have tried my best to do justice to the office which could happen only due to your constant support and encouragement. I take this opportunity to express my sincere gratitude to all my fellow professionals for their whole hearted cooperation to the activities of IDA Kerala State.

Our profession is in its tough time now. Lots of fresh graduates are passing out. Job opportunity is very less which pressures them to move to unethical practices. We couldn't blame them alone. The government on one side is putting pressures in implementing all sorts of laws which is framed for medical field irrespective of whether the institution is of small or large scale in nature. The officials are playing panchayath raj with these rules. It is where my slogan for the year is really valid. "Together we begin, March ahead, achieve heights".

We at office are behind the authorities for getting things in our advantage. We are constantly placing representations before the office of the required Hon: Ministers for solving various issues. I am happy to inform you that with our effort we have being reinstated to 6B in KSEB tariff, IDA Kerala state society has received income tax exemption. We launched a standardization agency for clinic accreditation which could help us out to some extend in case of implementation of clinical establishment bill. We have started a survey of dentist/ dental clinics in state for presenting the dentist population ratio before the authorities. I appreciate the efforts of Dr. Antony Thomas, Dr. Suresh Kumar, & Dr. Epen Thomas in these matters.

New code of ethics has been published by Dental Council of India. It has been posted in our web site. I request all our members to go through the matter and adhere to it. The point which you feel to be modified/ corrected can be sent to us at the earliest so that we could place it before DCI as a memorandum.

An appreciable move from national government through their party medical cell in the state has happened. They invited us to a seminar intended for collecting informations for the betterment of medical profession in the state. We have been there and could give a well appreciated power point presentation in which the following problems facing by us and what we require for a healthy situation in this state are highlighted.

The points we stressed are:

1. The Dentist : Population ratio of the state and need for reducing the BDS seats.
2. Various adverse effects we & populace may face with Clinical Establishment Bill.
3. Need for a Single Window for all Departmental registrations.
4. Price control, Quality assurance & Certifications of Dental Materials/ equipments.
5. Adverse effects we face with the present laws regarding Radiation Safety & Pollution Control
6. Dental insurance for public and how it will help both dentist and populace.
7. Scope for Dental Tourism in earning foreign exchange
8. Insurance and pension schemes for practitioners.

I thank Dr. Ciju Poulose for being with me in this presentation.

By the end of this year we could complete our legalization process. Routine CDE, CDH & WDC activities are going in its full swing. Journal published with excellent standards regularly. IDA HOPE is sailing smoothly. Web site passing information's timely. IDA Cricket tournament is over. Chilamboli and sports are there in coming months. First batch of Dental Assistant course have passed out. Our meeting has become creative. As a whole things are fine. I would definitely say that it is not my merit, but due the sincere hard work of all the concerned office bearers and cooperation of the members. I express my heart felt thanks each and every one who has contributed for our togetherness.

Jai IDA, Jai Hind

Dr. Nizaro Siyo
President, IDA Kerala State.


Dr. O.V. Sanal

Dear colleagues,

IDA State office clearly knows the challenges facing from the government towards our profession by implementing so many laws. We are very much trying to convince the officials of government to use the laws for the betterment of our profession. Sometimes may be the main issue of this year, the threats to ordinary member for running a clinic in Kerala. Now a days government is very strong for applying laws especially towards our profession. Clinical establishment bill, biomedical waste disposal, conversion of electricity tariff, government order about X-ray machine etc. are the major government related cases we are facing. Anyway in near future all the matters will be settled.

All the activities, branch level as well as state level are going on very smoothly. Branches are conducting their regular meeting and CDE programmes Attingal, Kottarakkara, Central Kerala, Pathanamthitta, Malanadu, Ernad, North Malabar and Coastal Malabar branches sending their reports in correct time. The last list of membership already send to head office. The second state level CDE programme conducted at Kannur on 11th May and it was hosted by IDA North Malabar branch. It was a well attended programme. Congratulation to North Malabar branch. Third state level CDE programme conducted at Pathanamthitta on 27th July and it was hosted by IDA Pathanamthitta branch. Congratulation to IDA Pathanamthitta and our state CDE chairman Dr. Anil G.

World No tobacco day observation was conducted at YMCA hall, Pathanamthitta on 31st May 2014 . As part of the programme a poster competition also conducted for the high school students. Congratulations IDA Pathanamthitta branch and coordinator Dr. Eugene Varghese.

Forth coming programme includes oral hygiene day celebration on 1st August at Payyannur. Chilamboli, our cultural fest will be held on 21st September at Kolanchery and students convention in the month of October at Thiruvalla.

You all know about the next state conference going to held at Kannur on January. Those member who are not yet registered, please do it as early as possible.

Requesting all the IDA members to attend all the activities and make the programme a big success. The new age dentistry is evolving at a remarkable pace, both in applied and fundamental fields. This is has led to new discoveries and research findings being made consistently to aid clinical practioners. IDA offers the opportunity for the dental professionals to scale greater heights.

With warm regards,

Jai IDA

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

Dr. K. Nandakumar

Suggest a radical solution for the faux pas

A child is born and everyone looks at it with curiosity. Parents and grandparents observe intensely on what happens to the child on a day to day basis. Slowly they feed the child with different foods towards the end of the first year. People are aware that according to the prevailing life expectancy, the child will grow and live for seventy years. This does not permit any one to choke the child by feeding with the food required for the next 70 years on a singular day. It is sheer commonsense that food has to be provided regularly according to growth. If the entire food required for years is administered in one day, the child will face a premature death without passing through the fine adulthood. The postgraduate dental education in our country is presumably facing a premature death. This year, there were not many takers for the postgraduate seats. Graduate dentists have lost their enthusiasm to undergo postgraduate training. Many students have felt that it is not worth the try to undergo postgraduate education. After getting the PG degree, the chances of getting the job are remote especially in a teaching institution. Most of the MDS degree holders are not confident in starting their own practice for lack of opportunities and lack of skills. Majority of the colleges do not have adequate patient inflow and hence our postgraduates are not exposed to variety of clinical situations. The people who have applied for the seats and the people who have sanctioned the seats have never expected such a disastrous future. The last three years have witnessed an unprecedented increase in the number of PG seats and expectedly, the graduates have turned away from the once widely sought out PG seats. May be the enhancement in PG seats might have become relevant, if it was done at a slow pace taking twenty five years. We do not have any statistics on what these graduates are doing at present. If they were practicing, there will not be any dental disease persisting in our country. In fact our dental colleges have been reduced to 'bride factories'. For the policy makers, ignorance of statistics might have provided bliss. We should take stock of the present situation and think of radical solutions. First ask the question, do we require these many dentists and specialists? The era of population statistics and the connected gimmicks of demand are over. The journal would like to remind the managements, the story of the goose that laid the golden egg. It is high time that we did serious thinking on the scope of postgraduate education.

Dr. K. Nandakumar
Editor, KDJ

One needs more than Professional Qualifications to be a Professional

* Shiv Khera

16 years ago in Singapore I gave a taxi driver a business card to take me to a particular address. At the last point he circled round the building. His meter read 11$ but he took only 10. I said Henry, your meter reads 11$ how come you are taking only 10. He said Sir, I am a taxi driver, I am supposed to be bringing you straight to the destination. Since I did not know the last spot, I had to circle around the building. Had I brought you straight here, the meter would have read 10$. Why should you be paying for my ignorance? He said Sir, legally, I can claim 11$ but ethically I am entitled to only 10. He further added that Singapore is a tourist destination and many people come here for three or four days. After clearing the immigrations and customs, the first experience is always with the taxi driver and if that is not good, the balance three to four days are not pleasant either. He said Sir I am not a taxi driver, I am the Ambassador of Singapore without a diplomatic passport. In my opinion he probably did not go to school beyond the 8th grade, but to me he was a professional. To me his behavior reflected pride in performance and character. That day I learnt that one needs more than professional qualification to be a professional.

According to NAASCOM 90% of graduates are unemployed. The same sentiment is shared by corporate leaders. Holistic education has two components.

- **One Teaches us how to make living**
- **The other Teaches us how to live.**

One without the other is incomplete. A professional leader is a leader who needs to manage a business needs to wear many hats. He needs to be a team leader / team player, a psychologist, an administrator, a visionary, a great sales person, disciplined, competent, a great communicator, and most importantly is someone who takes ownership.

Team Leader / Team Player

A leader cannot succeed without a good team and there are no readymade teams. Many a times you hear that the leader is good, but his advisors are bad. If we were to look a little deeper into this we would understand this statement as not true. The important question to ask here is who picks his advisors? It's always the leader. We get advisors in life not the kind of people we want but the kind of people we are.

A crooked Entrepreneur will have a crooked Attorney and a crooked accountant as advisors. An honest entrepreneur will have an honest Attorney and an honest accountant as advisor. One may temporarily get wrong advisors, but in the long run it will not last because the comfort levels are missing. Same is true with friends. We get friends of the kind of people we are but not the kind of people we want.

Psychologist

A leader has to be an expert in dealing with all kind of emotions. Humans are creatures of emotions and not logic. And we all go through emotions of love, happiness, anger, fear and so on. A leader keeps his team motivated and their morale high.

Administrator

A good administrator ensures smooth day to day functioning of the operations. Ensuring that systems and reporting are maintained, policies and procedures are followed etc. are a mark of good administrator. A good administrator must monitor processes at every level. They set quality standards and benchmarks, inspect carefully and then expect positive results.

A Visionary

A visionary is a person who has the ability to see the invisible. It is not problem solving, but pre-empting and preventing and if we can see the invisible, we can achieve the impossible

A Great Sales Person

Anyone who sells a product, service or an idea is a Sales Person. Based on this definition, who is not selling? In fact a good leader is a great sales person to sell his ideas all the time.

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Disciplined

Nothing in this world has ever been achieved without discipline. Can an athlete be a athlete without discipline. It is experienced that if we discipline ourselves, other don't have to and if we don't, others will discipline us. A leader recognizes that discipline is a track to run on and that discipline gives freedom.

Competence

What is the difference between skill and competence? Leaders not only have the Skill which is an ability, but also competence that is ability along with willingness and desire to do the job. There are many skillful people who are totally incompetent and therefore are not Leaders.

Great Communicator

IT has increased the speed of communication tremendously. No doubt, but unless we know how to and what to communicate, we will only mis-communicate a lot faster, won't we? Improper communication leads to misunderstanding and losses of millions of dollars per day. A leader is a good communicator that builds bridges and breaks barriers with his team.

Takes Ownership

Every person has a owner mentality or employee mentality. A leader has the mentality of ownership and feeling of belonging. He takes charge, accept responsibility, and consider themselves self employed and the truth is they are self employed because if they don't work for themselves, who are they working for? At the end of the month don't they take their earnings at home? A person with an employee mentality will never accept responsibility and will always blame others making excuses for their non performance. A person who accepts ownership, their decision making and problem solving ability is much higher.

*****

Mr. Shiv Khera is the author of international best seller, "YOU CAN WIN", which has sold over 2.8 million copies in 16 languages. He is also the founder of Qualified Learning Systems, USA and is an internationally renowned speaker and Business Consultant.

Know more about this topic at a three-day Hi-Impact Leadership - Blueprint for Success program. To register, email info@shivkhera.com or call 011-26148804. Visit www.shivkhera.com for more information

An in vivo evaluation on the accuracy of two chronologically different apex locators in estimating working length

* Yadav Chakravarthy, * Satheeshkumar, ** Joseph Paul, *** Sam Philip, *** AfsalAhamed

Abstract

Aim: This in vivo study was conducted to compare the accuracy of two chronologically different apex locators, a Third Generation electronic apex locators (EAL) and Fourth Generation electronic apex locator (EAL) in estimating the working length of tooth.

Method: Thirty adult human teeth indicated for extraction were taken for the study. Endodontic access was prepared, pulp extirpated, canals irrigated and the pulp space dried. Occlusal reference point was established. A third generation EAL (Root ZX), and fourth generation EAL (iPex), was used to measure the working length. After extraction, No. 15 K file with rubber stop was introduced into the canal and advanced until the file tip was visualized at the foramen using 3X magnification. The true canal length was measured for each tooth and the measurements were read to the nearest 0.5 mm. The actual working length was then established by subtracting 0.5 mm from the true canal length.

Result: The mean of the working length determined was calculated. Mean of the working length obtained by Root ZX (G1) and that obtained by iPex (G2) was compared with the mean of the actual working length (G3) by Two sample T test. The results revealed no statistically significant difference between the actual working length and the working length obtained by Root ZX and iPex. Even though when compared to actual working length it was evident that Root ZX was more accurate than iPex.

Conclusion: Under the In vivo clinical condition of this study, Working length determined using third generation EAL (Root ZX) was more accurate than fourth generation EAL (iPex). However, there was no statistically significant difference between the experimental groups.

Key words: Electronic apex locator, Root ZX, iPex, actual working length, apical constriction.

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Introduction

The success rate of conventional root canal treatment is predictably high, as long as the basic principles of endodontic treatment are followed. Accurate determination of root canal length is particularly important to the success of root canal treatment. Pulp space preparation and a three dimensional obturation of root canal system can never be accomplished unless an accurate working length of the tooth is established. If the tooth canal length is known to the operator, damage to periapical tissues and various procedural accidents can be avoided[2].

The apical constriction, when viewed under histological cross-sectioning, is the narrowest part of the root canal, and preparation to this mark is thought to result in optimal healing conditions[7]. Various anatomic studies have determined the apical constriction to fall 0.5 to 1.0 mm from the apical opening of the tooth, or major foramen[3]. This measurement is necessary to ensure complete removal of all pulp tissue and necrotic material from within the root canal but also to prevent extrusion of filling material into surrounding bone which can behave as a physiological irritant[2].

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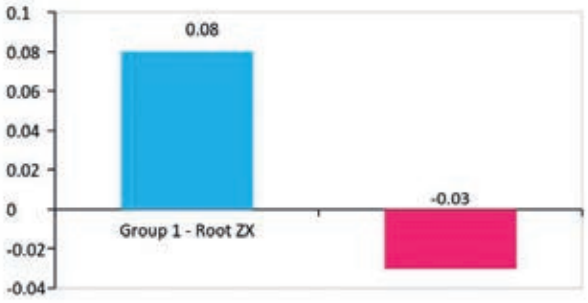
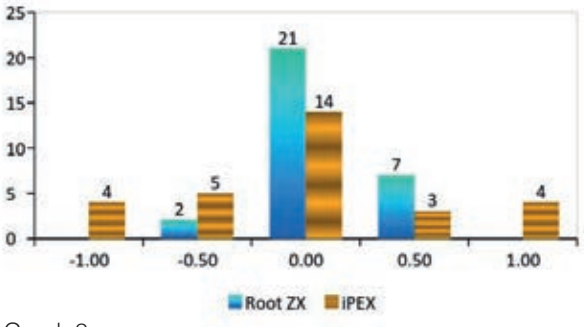
Table-1

	Root ZX	iPex
At apical constriction	21 (70 %)	14(46.7%)
Within ± **0.5mm**	30(100 %)	22(73.3%)
Within ± **1.mm**	-	30(100 %)

Fig 1 Fig 2



Graph 1



Graph 2

Mean deviation of the working length between two groups

Accepted techniques for the determination of the working length include radiographic and electronic method. To achieve the highest degree of accuracy in working length determination, a combination of several methods should be used.

Radiographs have traditionally been the most common method for determining working length. The reliability of radiographs is compromised because they provide a two-dimensional image of a three-dimensional subject, are technique sensitive and are subject to observer interpretation[4].

The electronic method eliminates many of the problems associated with radiographic measurements. Its most important advantage over radiography is that it can measure the length of the root canal to the end of the apical foramen (AF) and not to the radiographic apex[4].

Over the years, chronologically several generations of Electronic apex locators have been developed to refine their accuracy.

The purpose of this study is to compare two chronologically different apex locators a Third Generation EAL [Root ZX, J. Morita Corp, Japan] and a Fourth Generation EAL [iPex, NSK, Tochigi, Japan] in accurately estimating the working length of tooth.

Materials and Method

This study was undertaken to evaluate the accuracy of working length determination using a Third Generation EAL- ROOT ZX (J Morita Corp, Tokyo, Japan) and a Fourth Generation EAL- iPex (NSK, Tochigi, Japan) on single canalled roots.

An informed written consent was obtained from each patient before the study was initiated. A total thirty human adult single rooted teeth indicated for extraction due to pathology or as a part of orthodontic or periodontal reason was taken for the study.

A Standard intra oral periapical radiograph was taken using paralleling technique to confirm completely formed apices. Under local anesthesia, the tooth was isolated with rubber dam, following which a standard straight line access preparation was received. The incisal or occlusal edges was ground lightly to create flat surfaces for reproducible reference points. After location of canal orifices, the coronal and middle portions was flared with Gates Glidden drills sizes 2–3 (Mani, Japan) and the contents of the canals removed with a barbed broach. After that, the canals were irrigated with 0.9% Saline. The pulp chamber was dried gently with air and sterile cotton pellets was used to dry the tooth surface and eliminate excess irrigant, with no attempt at drying the canal. The working length of each tooth was independently determined using Root ZX and iPex according to manufacturer's instructions.

Using Root ZX apex locator, size15 stainless steel K-file (Mani.Inc, Japan) was advanced in the canal, until the locator indicated that the tip of the file is 0.5mm short of apex according to the manufacturer's instructions. The file was then withdrawn until the LCD display showed a flashing bar between "APEX" and "1. The silicone stop on the file was positioned at the reference point. The file was removed from the canal and the length was measured.

With the iPex locator, the file was advanced until the "APEX" signal was seen on the LCD display and then withdrawn until the display showed the 0.5-mm mark. Measurements were considered to be correct if the instrument remained stable for at least 5 seconds.

After careful extraction of the teeth under local anesthesia, they were placed in 5.25% sodium hypochlorite solution to remove any remnants of periodontal tissue from the apical portion of the root surface. The actual length of the tooth was determined using the same reference point and the same file used previously. The file was placed into the canal until the tip was visualized from a tangential angle at the apical exit using 3X magnification (Carl Zeiss, Germany). The stopper was set at the occlusal reference point and the file removed and set aside. The true length was determined for each tooth using a millimeter scale. Measurement was read to the nearest 0.5 mm. The actual working length was established by subtracting 0.5 mm from the true canal length.

The working length readings recorded were tabulated and the values were subjected to statistical analysis.

Results and Analysis

Working length in 30 adult human teeth indicated for extraction were measured using three methods:

1. Group 1 (G1) – Root ZX
2. Group 2 (G2) – iPex
3. Group 3 (G3) – Actual working length

The mean of the working length in all the three groups were calculated

- G1 shows the mean value of 20.63
- G2 shows the mean value of 20.75
- G3 shows the mean value of 20.72

The mean differences between the actual working length measurement and the measurements in the other two groups were also calculated (Graph 1). The mean deviation of working length determined by Root ZX from the actual working length (0.08) was less when compared to that of working length estimated with iPex(- 0.03).

The mean value of G1 and G2 were compared to the actual working length using Two Sample T test, with test value kept as 20.72. The P value was set at 0.05. The P value for G1 and G2 were found to be 0.877 and 0.952 respectively, which is statistically not significant.

The frequency histogram (Table 1 & *Graph 2*) demonstrates that occurrence of deviation from the actual working for G1 and G2. With the Root ZX apex locator 21 of the 30 readings (70%) coincided with the apical constriction. When a strict clinical range of ±0.5 mm was considered acceptable, Root ZX located the apical foramen with a clinical accuracy of 100%. However with the iPex, 14 out of the 30 readings (46.7%) of the readings coincided with the apical constriction, and at a strict clinical range of ±0.5 mm was considered acceptable, iPex located the apical foramen with a clinical accuracy of 22 out of 30 readings (73.3%) and at the range of ±1mm it show 100% accuracy.

Discussion

Pulp space and obturation of the root canal system can't be accomplished properly unless the working length is correct. The electronic apex locator is relatively a recent clinical aid in determining the working length of root canals during endodontic treatment[5].

The common method of determining root canal length for past hundred years has been by radiography. This method unfortunately often leads to inaccuracies, even though various techniques for improved radiographic length determination have been developed. Interpretation of the file's position on the radiograph and the surrounding anatomy is also prone to errors when using radiographs. Furthermore, radiographs only provide a two-dimensional representation of the three-dimensional object.[1]

The use of digital radiography has reduced radiation exposure of patients, increased the speed of delivery and created the ability to enhance images. However, studies have shown that the digital radiographs have no greater resolution than conventional radiographs[1].

In addition to radiography, tactile sensation has been used with questionable success. The drawbacks cited about radiographic length determination, along with the increasing concern about radiation exposure, the introduction and development of electronic apex locator (EAL) has been received for performing endodontic procedures[1].

This study was under taken to evaluate the accuracy of two chronologically different apex locators a Third Generation EAL [Root ZX, J.Morita] and a Fourth Generation EAL [iPex, NSK] in estimating the working length of tooth.

Third generation EAL (Root ZX) works on the principle of ratio method introduced by Chihiro Kobayashi (1992). The ratio method simultaneously measured the impedance of two different frequencies; calculate the quotient of the position of the electrode (file) in the canal. This quotient is hardly affected by the electrical condition inside the canal. The Root ZX needs calibration. The micro-processor of the device corrects the calculated quotient so that the position of the file tip and the meter reading are directly related. This occurrence means that root canal enlargement can easily be performed while the length of the root canal is simultaneously monitored[6].

Fourth generation EALs measure capacitance and resistance simultaneously to determine the location of the file tip in the canal[8]. iPex is claimed to be a fourth-generation apex locator[8].

In this study the position within the ± 0.5mm range from the apical constriction are considered by some authors as the strictest acceptable range. Measurement attained within this tolerance are considered highly accurate[7]. Thus in this study the strictest clinical tolerance of ±0.5mm from apical constriction was applied.

In this study, the mean of the working length determined was calculated. Mean of the working length obtained by third generation EAL (G1) and that obtained by fourth generation EAL (G2) was compared with the mean of the actual working length (G3) by Two sample T test.

The mean deviation of working length determined by third generation EAL from the actual working length (+0.08) was less when compared to that determined by fourth generation EAL (- 0.03). A positive value for mean difference indicated that the tip of measuring instrument was beyond the actual working length and a negative value indicated that instrument was short of the actual working length.

The results of the present study showed that there was no statistically significant difference between the third generation EAL and fourth generation EAL. Even though in this study there was no statistically significant difference in the working length determined using the third generation EAL and the fourth generation EAL. When compared to actual working length it was evident from the histogram, (Table1 and Graph 2) that the third generation EAL was more accurate than the fourth generation EAL in determining the end point correctly.

Conclusion

The Electronic apex locators are a reliable tool for the determination of the working length and many a times an adjunct to intraoral radiography. Electronic apex locator can be trusted when there is a stable electronic sign with reasonably controlled exudates and without any metallic restorations. However, when the sign is unstable particularly with metallic restorations, severely undermined caries, severe exudation or wide open apex- a comparison of the apex locator reading with the radiograph is strongly recommended.

Even though there was no statistically significant difference between the two experimental groups, It was observed that the third generation EAL (Root ZX) showed less deviation than the fourth generation EAL (iPex).

In this study it was concluded that the Third Generation Electronic Apex Locator (Root ZX, J.Morita Corp, Tokyo, Japan) was more accurate in determining the working length compared to the Fourth Generation Electronic Apex Locator (iPex, NSK, Tochigi, Japan).

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Seven models for oral health promotion in Kerala

* Civy V Pulayath

The curative approach towards dental problems in Kerala has left behind the importance of preventive dentistry. As per the pilot survey of all Kerala oral health survey conducted by Indian dental association, 97.4% of all index age group (5,12,15,40,70 years) populations are affected with any one type of major dental public health problem (dental caries, periodontal diseases, malocclusion, fluorosis and oral cancer)

This dental disabilities has not only affected the physical and mental health status but also the social and economic condition (e.g. loss of man hours) with no due importance given in the state health policy and no customised public dental health model proposed till date it is high time to channelize the available resources for a smiling Kerala.

Obstacles in achieving optimal oral health in Kerala

With 10663 dentists registered in the state dental council, 4283 dental clinics across 14 districts in the state and 24 dental colleges, accessibility or availability is no more a problem for dental health care utilisation by the people of Kerala. A cross sectional study by the author revealed the following:

Reason for non- utilization of available facilities by the public includes:

1. Awareness
2. Attitude
3. Affordability
4. Availability of time

Methods of overcoming the obstacles of non- utilisation of dental care by public in Kerala:

Man is a product of heredity and environment. Any attempt in implementing oral health promotion should address change in behavior and life style. The obstacles caused by lack of awareness, care free attitude towards oral health, inability to bear the treatment expenses and busy life schedules can be tackled with the following practical models of oral health promotion.

1. Catch them young

Fluoridated chocolates to students

Starting of school dental clinics with dental nurse

Adding more oral health tips in the School curriculum

Compulsory dental fitness certificate for class promotion

2. Step approach

social: Highlighting social and cultural values

Technical: improvised oral hygiene aids

Economical: Bank loans for expensive treatments

Political: Oral health policy for the state

3. Peer influence model:

Teachers as doctors

Supervision by parents

Community dental health council

4. Rural Dental Health Mission

Asha workers for dental health education

Dental Camps at primary health centre

Free preventive treatments at taluk hospital

5. Mass Media Model

Malayalam health channel

Celebrities message on oral health

Dental write-ups on magazines

Movies with oral health messages

6. Dental PPP Kerala Model

Public private partnership in dental care

Free dental clinic by NGO

Corporate social responsibility fund utilization

Mobile van for free early oral cancer detection

Institution adoption program

7. Model State Dental Insurance

Government insurance program

Can collect minimal amount via health tax

Free and compulsory annual dental check up

Comprehensive dental care project

Incremental care for BPL community

Special care for elderly

If implemented with interdepartmental co ordination and public involvement, it is sure that these models will take the oral health status of Kerala to a more safer place. The only support needed is political determination and professional support.

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Amniotic membrane - implication in periodontal regeneration

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Abstract

Human amniotic membrane (AM), a thin intrauterine placental membrane is highly biocompatible, and possesses anti-inflammatory and anti-scarring properties. It has biologic properties that are able to reduce inflammation, diminish the occurrence of adhesions and scarring, modulate angiogenesis and promote wound healing. It also promotes epithelialisation, maintains a normal epithelial phenotype and has antimicrobial properties. This article deals with the implications of amniotic membrane in periodontal regeneration.

Keywords: Amniotic membrane, allograft, Growth factors; Regeneration

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Introduction

Periodontal diseases leading to deterioration of tooth-supporting structures are a serious concern for clinicians. With manifold developments in our understanding on periodontal regeneration, biologic and materials sciences; complete regeneration still is an unrealistic situation in many clinical situations due to the complexity of the biological events, factors, and cells involved in regenerative process in the periodontium. Spatially directed regeneration of periodontal tissues through manipulation of cell fate pathways is referred to as guided tissue regeneration (GTR). The technique involves the use of a semi permeable membrane underneath the gingiva precluding downward regeneration of gingival epithelium along root surface while maintaining the space for regeneration of periodontal ligament and establishment of connective tissue attachment [1].

' The use of placental tissue for the treatment of wound started more than 100 years ago when by Davis in 1910 first used these fetal membranes as skin substitutes for the treatment of open wounds [2]. Later these membranes were also used for the treatment of burn and repair of conjunctiva defects and as a dressing of chronic ulcers. Amniotic membrane is a composite membrane consisting of pluripotent cellular element embedded in a semi permeable membranous structure [3]. It has been shown that amniotic membrane is an immunotolerant structure [4]. Meanwhile, the existence of pluripotent stem cells possessing the ability of transdifferentiation to other cellular elements of periodontium makes it a suitable candidate for GTR.

Basic Structure of Amnion Membrane

The amniotic sac encloses the developing fetus through gestation and is composed of amnion and chorion tissue. Amnion lines the inner most portion of the amniotic sac and consists of a single layer of epithelium cells, thin reticular fibers (basement membrane), a thick compact layer, and a fibroblast layer. The basement membrane contains collagen types III, IV, and V and cell-adhesion bioactive factors including fibronectin and laminins. The amnion basement membrane closely mimics the basement membrane of human oral mucosa.[5] Amnion layer possesses several types of laminins, with Laminin-5 being the most prevalent. Laminin-5 plays a role in the cellular adhesion of gingival cells and concentrations of this glycoprotein in amniotic allograft may be useful for periodontal grafting procedures.[6] Amnion tissue contains growth factors that may aid in the formation of granulation tissue by stimulating fibroblast growth and neovascularization.

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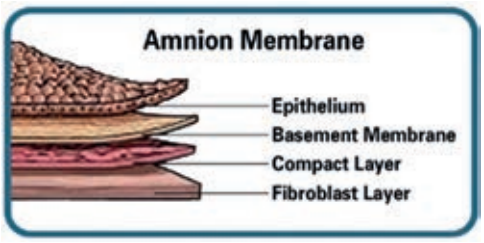

Fig. 1 amniotic membrane-structure

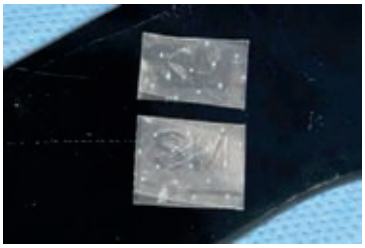

Fig. 2 Amniotic allograft with embossed markings

Clinical photographs

Incision placed

flap elevated

membrane placed

Additionally, the cells found within tissue exhibit characteristics associated with stem cells and may enhance clinical outcomes[7]. The basal lamina contains a large amount of proteoglycans like heparan sulfate that is one of the major proteoglycan in the gingiva. The amniotic epithelium has a specialized arrangement of intracellular cytoskeletal filaments indicating their role in the structural integrity and modulation of cell shape of the healing tissue. The stroma also contains mitogenic factors, antiangiogenic and anti-inflammatory proteins that allow the wound to heal in a much faster and efficient way. The matrix of human AM contains abundant growth factors that promote periodontal regeneration. Various stem cell markers like cytokeratins and vimentin are present in large amount in the amniotic epithelial cells. These markers suggest that the amnion-derived cells are completely differentiated into epithelial or mesenchymal cells but remain as undifferentiated stem cells. These MSCs have the ability to accelerate the inflammatory phase towards the proliferative phase which is critical for treating chronic wounds like periodontitis.[8,9] (Fig. 1)

Mechanism of action

- Immunomodulative and Immune privilege
- Anti-microbial (broad spectrum effect against bacteria, fungi, protozoa and viruses)
- Reduction of pain
- Anti-scarring and anti-Inflammatory
- Increased extracellular matrix deposition
- Speed fibrogenesis and angiogenesis
- Tissue reparative activities with enhanced bone remodeling, osteogenesis and chondrogenesis
- Potent source of mesenchymal stem cells

Preparation of Amniotic Membrane Isolation and Cultivation of Amniotic Cells

All donated tissue should follow a strict guideline for procurement, processing and distribution before they can be used clinically. The AM can be used either alone with only amniotic epithelium (intact AM) or without it (denuded AM). To isolate fetal-derived MSC-like cells from the amniotic membrane the technique of enzymatic digestion is used. Special processing and sterilization is recommended to ensure consistent quality and preservation of the properties of AM. Various methods have been tried to preserve the AM include: hypothermic storage at 4°C, freeze drying through liquid nitrogen at -196°F, γ-sterilization, glycerol preservation and cryopreservation. The media and storage temperature used for the preservation process affects the viability of cells and growth factors in the AM.[10] The far-infrared rays and microwaves are also used for sterilization of amniotic membrane which is known as the Hyper-dry-amnion. "Hyper-dry amnion" can be preserved at room temperature indefinitely until the packet is cut open. It is easily cut

to the desired size and shape just before application. After proper sterilization by any technique, proper screenings to test for infectious diseases form a mandatory step. Before the membrane is applied, the wound should be prepared after thorough removal of granulation tissue. Membrane is applied with rough (chorionic) surface next to the wound. Care is taken to ensure that there is no air bubbles trapped between the membrane and wound. Freeze dried irradiated membrane is also used as described above, but before application it is soaked in sterile saline for 1-2 minutes.[11] (Fig. 2)

Clinical application

The human amniotic membrane (HAM) has been used in the field of oral and maxillofacial surgery from 1969 onwards, because of its immunological preference and its pain-reducing, antimicrobial, mechanical, and side-dependent adhesive or anti-adhesive properties. The ability of processed dehydrated allograft amnion to self-adhere eliminates the need for sutures, making the procedure less technically demanding and significantly decreasing surgical time. This amnion membrane is an excellent micro carrier for culture technique as it involves a development of a three-dimensional space that is suitable for the growth and proliferation of embryonic stem cells (ESCs). AM has structure similar to the basement membrane of gingiva because of which it can be utilized as a feeder layer for stem cells culture and amplification for tissue engineering. The graft of amniotic membrane is a viable and reliable method to cover the exposed periosteum as they serve as a good alternative to mucosal and skin grafts.[12] AM may be used as alternative treatment to manage wounds in the oral cavity like the tongue, buccal mucosa, vestibule, palatal mucosa, and floor of the mouth. AM are known to decrease the neutrophils migration to the site in the ulcer and thus provide a good anti-inflammatory property with reduction in necrosis. AM is even used as a carrier for local delivery of the various drugs like antibiotic netilmycin (NTM) and antiviral drugs like acyclovir (ACV) and trifluridine (TFU). Amnion has been tried as a graft material after vestibuloplasty where it prevents secondary contraction after the surgery and maintains the postoperative vestibular depth. Hyperdry amnion or cryopreserved amniotic membrane tissue is used as a barrier membrane in the treatment of periodontal osseous defect with or without bone graft and even tried in the management of gingival recession with guided tissue regeneration. Biomechanical GTR proposed herein using amniotic membrane, not only maintains the structural and anatomical configuration of regenerated tissues, but also contribute to the enhancement of healing through reduction of post-operative scarring and subsequent loss of function and providing a rich source of stem cells.[13]

Conclusion

The use of this novel biological membrane is rising in various fields of tissue engineering, medicine, regeneration biology and stem cell research. However, further research and long-term clinical trials investigating the full potential of this potential stem reservoir are still warranted to strengthen the fact amniotic membrane is indeed a reservoir for regeneration and repair.

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Autotransplantation as a surgical alternative to malpositioned permanent tooth

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Abstract

Autotransplantation is defined as the transplantation of embedded, impacted, or erupted teeth from one site into extraction sites or surgically prepared sockets in the same person1. Here we delineate a case report were a successful autotransplantation of an ectopically erupted lower right permanent canine was done with a one year follow up. The most significant factor for the success of autotransplantation is the maintenance of vitality of the periodontal ligament fibers of the donor tooth. The advantages of transplantation over implants include that it can be given at any age, osteoinductive capacity of periodontal ligament thus promoting bone formation, normal periodontal ligament space is maintained which serves as shock absorber, normal eruption is attained in harmony with other teeth in dentition. With a thorough knowledge of the surgical procedures involved along with proper case selection should lead to greater success with autotransplantation.

Keywords: autotransplantation, malposed canine, impacted canine, surgical alternative.

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Introduction

Autotransplantation is defined as the transplantation of embedded, impacted, or erupted teeth from one site into extraction sites or surgically prepared sockets in the same person[1].

Autotransplanation of teeth can be of three types[2]:

1. Transplantation of a tooth from one tooth socketto a different tooth socket. Mainly done to replace a missing tooth or to use as an abutment for Fixed Partial Denture, when a suitable donor tooth is available.

2. Repositioning of anectopic tooth surgically within the same tooth socket. This is done as an alternative to orthodontic repositioning.

3. Replantation of a tooth within the same extraction socket after suitable treatment. Mainly done as an alternative to conventional apicoectomy.

Surgical exposure followed by orthodontic treatment is the treatment of choice for ectopically positioned canines[3]. Some of the limitations being unfavorable ectopically positioned tooth, poor socioeconomic status and future periodontal problems. WIDMAN in 1915 has shown autotransplantation as a treatment option for maxillary impacted canines[4]. Later surgically repositioned canines have shown high success rates in various studies[5,6], irrespective of whether root formation is complete or incomplete in patients under 20 years of age[7]. There are numerous anecdotic documentations of autotransplantation of maxillary canines but of mandibular canines are rare. Here we present a case report of an ectopically positioned mandibular canine which was successfully transplanted with a one year follow up.

Case Report

A-19-year old male patient reported to the department of oral & maxillofacial surgery, Mar Baselios Dental College, with complaints of irregularly placed lower front teeth with spacing. On examination, an over retained

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Fig 1 Pre-operative picture

Fig 2 Immediate post-operative picture

lower right deciduous canine was noticed with ectopic eruption of lower right permanent canine placed buccal to the lower right central incisor resulting in lingual tipping of the latter. His medical history was uneventful. Considering the patient's socioeconomic status, Orthodontic treatment was not feasible and the patient was advised extraction of lower right permanent canine with retainment of the lower right deciduous canine. A fixed partial denture was advised in the event of exfoliation of lower right decidous canine. The patient was referred for extraction of same to the department of oral and maxillofacial surgery.

A through case history along with medical history was recorded. Electric pulp stimulation test showed positive vitality in both the deciduous and permanent canine. Sulcus depth measurements were within normal limits. Radiographic investigations included intra oral periapical radiograph (IOPA) of lower right deciduous and permanent canines, mandibular occlusal and panoramic radiograph; showed no abnormalities. A routine blood examination was done. Upper and lower impressions were made and study models where prepared. The patient was given an alternative treatment option of extraction of lower right deciduous canine with autotransplantation of lower right permanent canine to the extraction socket of lower right deciduous canine.

The surgical procedure was done as described by AHLBER et al[8]. The recipient site socket was prepared after extraction of 83 along with fracture of the buccal and lingual cortical plates as it was dimensionally less compared to the donor tooth [lower right permanent canine]. Transplantation of the donor tooth was done at the same appointment thus minimizing extra oral time in the normal saline. The donor tooth was placed in occlusion since root formation was complete. Stabilization was achieved with interdental suturing and interdental wiring to adjacent teeth. Prophylactic antibiotic and analgesic coverage was given [tetracycline, metrogyl andmeftal forte three times daily half an hour after food and ranitidine two times daily half an hour before food] for 5 days. The patient was asked to rinse the mouth thrice daily with chlorhexidine mouthwash. Sutures were removed on the 7th day. A single sitting intentional endodontic therapy was done at 2 weeks of the transplanted canine along with that of the adjacent lower right permanent first premolar and lateral incisor teeth. The adjacent teeth had to beendodontically treated as their periodontal ligament space were breached during preparation of recipient site [extraction socket of lower right deciduous canine]. Glass ionomercement restorations were given to all the three teeth. The interdental wiring was removed at one month. The patient was reviewed at 2 week, 1 month, 6 month and 1 year post operatively.

At 1 year post op on examination there was no Pain or Mobility. Periodontal pocket depth was within normal limits at 6 sites around the tooth.There was no bleeding on probing.Radiographic examination showed no periapical pathology but ankylosis was present. Also there was to an extent self-correction of the spacing in the lower teeth. Thus autotransplantation of 43 was successfully carried out to the extraction socket of 83.

Discussion

Use of Autotransplantation as an effective clinical procedure has decreased lately with the advent of

Fig 3a One year post-operative picture

Fig 3b One year post-operative x-ray

osseointegrateddental implants showing higher predictability in success rates and aesthetics. Some of the advantages of transplantation over implants include it can be given at any age, osteoinductive capacity of periodontal ligament thus promoting bone formation, normal periodontal ligament space is maintained which serves as shock absorber, normal eruption is attained in harmony with other teeth in dentition.

With a thorough knowledge of the surgical procedures involved along with proper case selection should lead to greater success with autotransplantation which is in coordination with the success rates reported in many studies like 98% by Andreasen[9], 84% by Lundberg and Isaksson[10], 82% by Kugelberg[11] and 82% by Josefsson[12].

The most significant factor for the success of autotransplantation is the maintenance of vitality of the periodontal ligament fibers of the donor tooth. Surgeons experience also affects as this is a technique sensitive procedure. Ideal tooth for transplantation include tooth with root formation between 1/2 to 2/3, but tooth with complete root formation has been successfully transplanted.

The most significant factor for failure of autotransplantation is chronic root resorption others being inflammatory resoption, replacement resorption, marginal periodontitis, apical periodontitis, caries and trauma[13].

Autotransplantation must be considered as the method of choice for over retained deciduous tooth in cases where a suitable impacted permanent successor is available.

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Efficacy of various NSAIDs in acute Odontogenic pain

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Abstract

Objective : To compare the efficacy of commonly used NSAIDS in relieving acute odontogenic pain

Materials and method: 80 patients aged between 20 to 50 years with acute odontogenic pain with initial score more than 8 in visual analogue scale were included in the study. After taking a detailed case history, patients contraindicated for non steroidal anti inflammatory drugs (NSAIDs) were excluded. 80 patients were divided into four groups of 20 patients each. Adult dosage of Aceclofenac, Diclofenac sodium, Ibuprofen and Paracetamol were given .Visual analogue scale reading were taken one hour after oral administration of drug and efficacy in relieving pain was noted.

Discussion: Systemic oral medication is a part of routine dentistry. NSAIDs are commonly used in dental practice for relieving acute dental pain. Dental practitioners should be familiar with their indications, contra-indications and side-effects. This Study is undertaken to understand the efficacy of various NSAIDs which are commonly used in practice.

Conclusion: In this study Diclofenac and Ibuprofen were found to gave statistically significant relief in acute dental pain. Paracetamol was the least effective compared to the other NSAIDs.

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Introduction

Pain management in dentistry is a challenge. Oral analgesics are used pre & postoperatively to alleviate pain. The purpose of the study is to compare the efficacy of commonly used NSAIDS in acute odontogenic pain. Diclofenac Sodium, Acelofenac, Ibuprofen and Paracetamol were compared for their pain relief.

Management of acute pain is an important skill for a Dental practitioner. Appropriate NSAIDs have to be given for getting good pain relief.

Various analgesics are used in clinical dentistry for pain relief. Though Opioids have higher analgesic activity, they have undesired side effects associated with their use. NSAIDs have shown to be equally effective in relieving pain[1]. This study compares the efficacy of Diclofenac Sodium, Aceclofenac, Ibuprofen and Paracetamol in their effectiveness in abscess and non abscess cases with pain.

Materials and methods

80 patients aged between 20 to 50 years (Table-1) with acute odontogenic pain, with initial score more than 8 in visual analogue scale were included in the study. After taking a detailed case history, patients contraindicated for non steroidal anti inflammatory drugs (NSAIDs) were excluded. After taking an informed consent, 80 patients were randomly divided into four groups. Each group comprised of 20 subjects. Each subjects were administered one NSAID each. Patients with abscess and non abscess were identified and included randomly in each group (Table-2). Aceclofenac 100mg, Diclofenac sodium 50mg, Ibuprofen 600mg and Paracetamol 650 mg from standard drug manufacturers were orally administered to each group respectively .Visual analogue scale reading before and one hour after oral administration of drug were recorded for pain relief. Scores were tabulated & statistically analyzed.

Results

In the study group, the mean age of male was 39.36 years and in females, it was 36.92 years. (Table-I)

Out of the 80 patients, 45 had acute pain associated with abscess and 35 patients had acute pain without abscess. 26.25 % of male subjects were having abscess.

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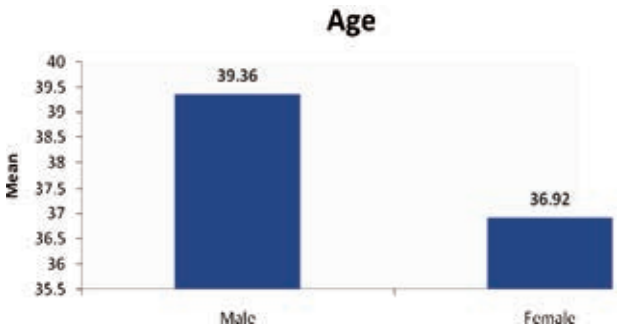

Table – I Age & Sex Distribution

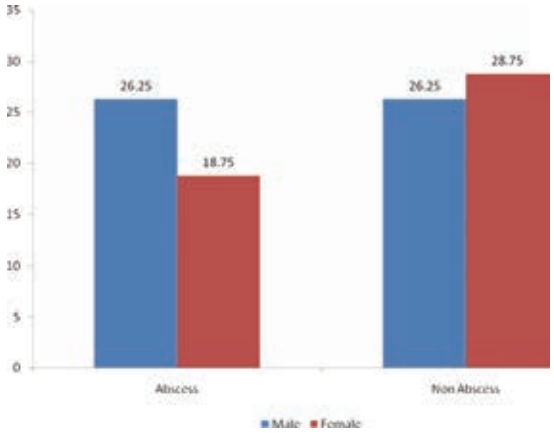

Table – II Distribution of Abscess and non abscess

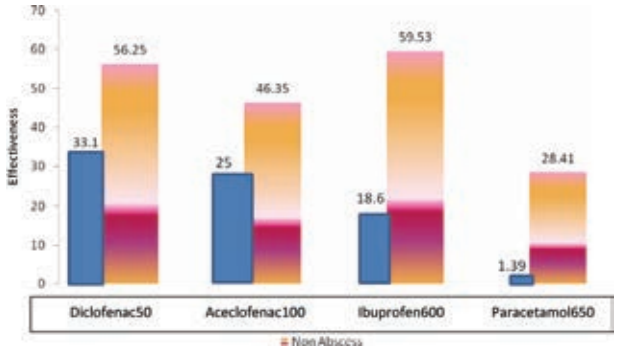

Table – III Effectiveness in abscess & non abscess cases

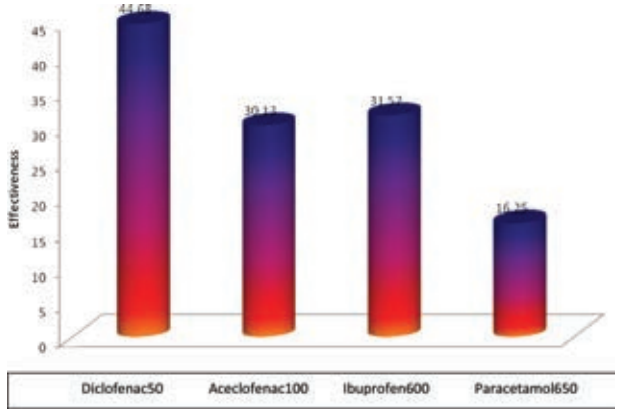

Table – IV Overall effectiveness

18.75% of female subjects were having abscess. (Table- II).

In case of abscess, Diclofeance gave 33.1% pain relief one hour after administration of drug. Aceclofenac gave 25.1 percent pain relief followed by Ibubrofen which gave 18.6% relief. Paracetamol gave only 1.39% pain relief in case of abscess. Ibuprofen gave excellent pain relief (59.53% relief) in non abscess cases compared to Diclofenac which gave 56.25% relief and Aceclofenac which gave 46.35%, whereas Paracetamol gave only 28.41% pain relief. None of the subjects reported any adverse effects. (Table- III).

Diclofenac was found to give 44.68% pain relief overall. Aceclofenac gave 30.13% pain relief. Ibuprofen gave 31.57% pain relief and Paracetamol gave only 16.25 % pain relief (Table- IV)

Discussion

Prostaglandins are produced within the body's cells by the enzyme cyclooxygenase (COX). There are two COX enzymes, COX-1 and COX-2. Both enzymes produce prostaglandins that promote inflammation, pain, and fever. Nonsteroidal antiinflammatory drugs (NSAIDs) block the COX enzymes and reduce prostaglandins throughout the body. As a consequence, ongoing inflammation, pain, and fever are reduced.

Ibuprofen is a 2-proprionic acid derivative discovered by the research arm of the British Boots Group in the 1960s. It is a potent anti-inflammatory. It works through a reversible and balanced COX-1/ COX-2 inhibition. Ibuprofen is less active as a prostaglandin (PG) synthesis inhibitor. It has more direct effect on peripheral nerve endings.[2]

Diclofenac is a Aryl-acetic acid derivative. Is somewhat cox2 selective. It reduces superoxide formation at inflammatory site. Plasma half life is 2 hours. Concentration in synovial fluid is maintained longer, thus efficient in joint pain. Epigastric pain, nausea, headache, rashes are common adverse effects.

Aceclofenac is a Glycolic acid ester of Diclofenac. It is somewhat COX2 selective. It is a cytokine inhibitor. It is more or less effective as Diclofenac and has more tolerance.

Paracetamol is a amino phenol derivative. Central analgesic action of Paracetamol is like aspirin. It raises pain threshold and it is a weak anti-inflammatory and

a good antipyretic. In a study conducted by Hyllested, Paracetamol was found to be effective in combination with other NSAIDs[4]. Bakshi etal demonstrated Diclofenac and Paracetamol were superior to placebo in their study[5]. Nagendra etal compared Aceclofenac and Diclofenac in their study in post operative pain which demonstrated both are more or less equally efficient. Aceclofenac had more tolerence.[6]

There is a controversy about the relative efficacy of NSAIDs when compared with each other. In the past, some authors have stated that there is little difference in the analgesic efficacy between the different types of NSAIDs. Recent evidence has shown that individual NSAIDs do differ in their analgesic efficacy.[3] In this study Diclofenac was found to be effective in relieving acute pain with abscess. Ibuprofen was found effective in acute pain with less suppuration..

This study has demonstrated that the NSAIDs studied, have variation in their analgesic efficacy. The study has its own limitation as the pain relief studied is subjective and the sample size is limited. The study has not considered combination drugs and Opiods for pain relief. Though Paracetamol was the least effective in terms of pain relief, It has better safety profile. Combination drug therapy which was not included in this study may prove it to be more useful in clinical pain management.

Conclusion

Alleviating pain is of utmost importance when treating dental patients. The major cause of pain is thought to be the release of inflammatory mediators that activate sensory nociceptors surrounding the tooth. Uses of appropriate NSAIDs help to reduce inflammation, thereby reducing pain. The conclusion of this study is that diclofenac & aceclofenac can be used in case of severe inflammation. Ibuprofen can be used in case of mild to moderate inflammation without much suppuration. Paracetamol may be considered where other NSAIDs are contraindicated.

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A causal link between CVD and periodontitis

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Abstract

Periodontitis and cardio vascular diseases being chronic inflammatory in nature shares common risk factors that begins an inflammatory response. Various studies have been conducted to analyze a causal relationship. This article intends to assess the strength of evidences relating the two diseases on the basis of hills criteria.

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Introduction

Periodontitis is a chronic inflammatory disease that is said to be initiated by the oral microbial flora which is highly sensitive to the potential insults that confronts the human host throughout their life time. Oral cavity manifests complications of various systemic diseases like CVD, diabetes, obesity. This review attempts to assess the strength of evidences relating to periodontal diseases and few systemic disorders such as diabetes, CVD, obesity, PLBW based on the causal inference criteria proposed by Bradford Hill.[2]

Causal inference criteria

Austin Bradford Hill (1897-1991), presented a way of determining the causal link between a specific factor and a disease .*Hills Criteria of Causation* outlines the minimal conditions needed to establish a causal relationship between two items. These criteria include strength of association, temporality, consistency, specificity, dose-response relationship and biologic plausibility.

I) Strength of association: This is defined by the size of the association as measured by appropriate statistical tests. The stronger the association, the more likely it is that the relation of "A" to "B" is causal. However, the absence of a strong association does not rule out a causal effect.

II) Consistency: The association is consistent when results are replicated in studies in different settings using different methods. That is, if a relationship is causal, we would expect to find it consistently in different studies and among different populations. This is why numerous experiments have to be done before meaningful statements can be made about the causal relationship between two or more factors.

III) Temporality: Exposure always precedes the outcome. If factor "A" is believed to cause a disease, then it is clear that factor "A" must necessarily always precede the occurrence of the disease.

IV) Specificity: This is established when a single putative cause produces a specific effect. Specificity provides additional support for causality, but absence of it does not negate a causal relationship.

V) dose-response relationship: An increasing amount of exposure increases the risk. If a dose-response relationship is present, it is strong evidence for a causal relationship. However, as with *specificity* (see below), the absence of a dose-response relationship does not rule out a causal relationship. A threshold may exist above which a relationship may develop. At the same time, if a specific factor is the cause of a disease, the incidence of the disease should decline when exposure to the factor is reduced or eliminated.

VI) Biologic plausibility: The association agrees with currently accepted understanding of pathological processes. In other words, there needs to be some theoretical basis for positing an association between a vector and disease, or one social phenomenon and another.

Cardiovascular diseases and periodontitis

Periodontitis and CVD share common risk factors that can trigger an inflammatory response as seen in figure 1. While assessing the strength of evidences relating Periodontitis and CVD, coherence and plausibility has been merged into the criteria of

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Table 1: *Overall strength of evidence for CVD and Periodontitis.*

Hill's criteria	*CHD*	*PAD*	*ischemic stroke*
Specificity	-	-	-
strenght of assosiation	+	+	++
dose-response relation	+	-	+
Time sequence	+	+	++
Biological plausibility	++	++	++
Consistency	-	+	++

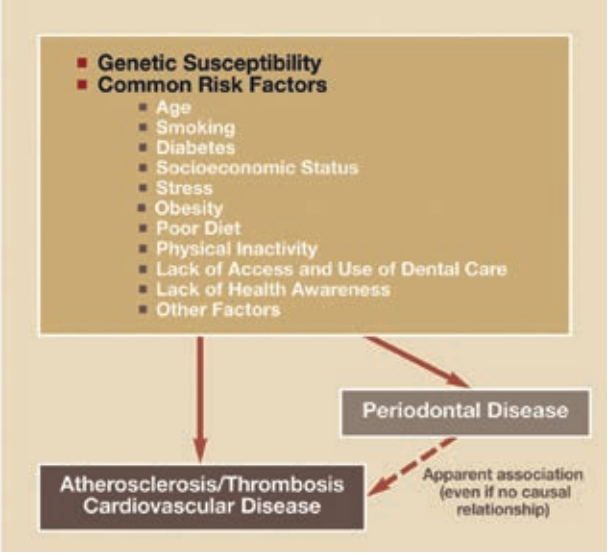

Fig 1: Noncausal common risk factors (confounders) pathway

biological plausibility as the difference between the two are subtle. [12] Specificity is one of the criteria postulated by Hill, but many do not regard it as relevant when applied to complex redundant immunomodulatory pathways. It can be called upon as a criterion when a single putative cause produces a specific effect. This is not true for CVD or many other diseases, because multiple pathways can lead to the same outcome. Specificity provides additional support for causality, but absence of specificity (multiple causes) as in CVD does not negate a causal relationship.

Also, the criterion of experiment was not assessed because there is no direct evidence to date from clinical trials for the clinical outcomes and it is not possible to allocate people randomly to periodontal disease (only to periodontal treatment). Only one small pilot randomized control trial assessed the impact of periodontal treatment on adverse events, such as cardiovascular and noncardiovascular, and it was not possible to gauge the impact on cardiovascular outcomes.[4] The criterion of analogy has been excluded

Table 2: *Meta analysis studies relating periodontal disease and CVD*

TABLE 4:
Results from Meta-analyses of Studies Relating Periodontal Disease and CVD

STUDY	STUDIES INCLUDED IN THE META-ANALYSES	OUTCOME	RELATIVE RISK (96% CI)
Danesh, 1998[27]	5 prospective	CHD	1.24 (1.10-1.38)
Muller, 2002[28]	4 prospective	CHD	1.12 (0.95-1.33)
	3 prospective	Stroke	1.73 (0.89-3.34)
Janket, 2003[29]	8 prospective	CHD/Stroke	1.19* (1.08-1.32)
	4 prospective	CHD/Stroke (≥65 y)	1.44* (1.20-1.73)
	2 prospective	Stroke	2.85* (1.78-4.56)
Khader, 2004[30]	6 prospective + 2	CHD	1.15* (1.06-1.25)
	4 prospective + 2	Stroke	1.13* (1.01-1.27)

*Statistically significant.
CI = Confidence interval.

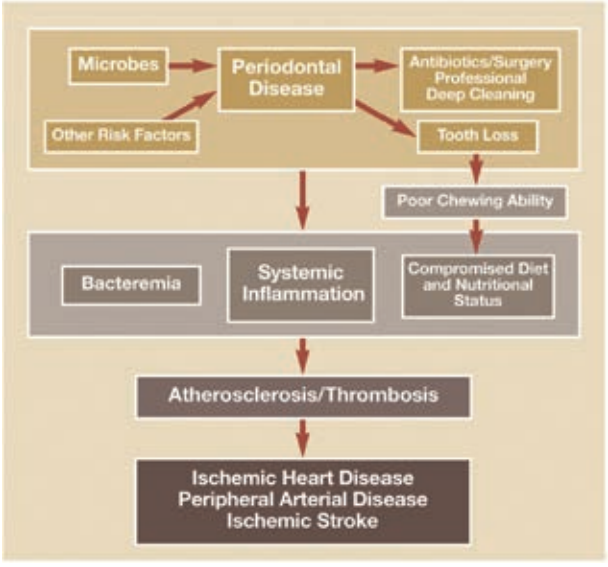

Fig 2: *Potential biologic pathway relating oral and atherosclerotic diseases*

because as Rothman and Greenland argued, "scientists… can find analogies everywhere" and "The absence of such analogies only reflects lack of imagination or experience."[22]

Strength of association

Destefano and co workers conducted one of the earliest prospective studies to assess the strength of association between Periodontitis and IHD and found that there was a significant relative risk of 1.25 for IHD, compared to those with periodontal disease to those without.[8]

Hujoel et al reanalyzed the data and found no relationship between HID and periodontal diseases.[13] Only two studies have considered the relationship between PAD and periodontal disease and both showed significantly elevated risk of PAD among

participants with periodontal disease.[14,19] For stroke, four of the six studies consistently showed significantly elevated relative risks .The significant relative risks ranged from 1.2 to 2.1 for IHD, 1.4 to 2.3 for PAD, and 1.3 to 2.8 for stroke.

Dose-response relationship-

Of the few studies evaluated by Beck and colleagues and Geerts and colleagues (case-control study) assessed dose response, relating increasing levels of periodontal disease with IHD risk.[3,9] A study by Beck et al assessed dose-response relationship for stroke but did not find any linear association.

Temporality

In several studies, the exposure clearly preceded the outcome. From the longitudinal studies to date, three of the 11 IHD studies, both PAD studies showed a temporal relationship .[23] Because periodontal disease precedes the outcome (atherosclerotic disease) in the longitudinal studies, these studies provide much better support for causal inference concerning the relationship between periodontal disease and CVD compared with case-control and cross-sectional studies.[1,] However, given that both periodontal disease and atherosclerotic disease are chronic conditions, it is challenging to conclude, even from longitudinal studies, whether the periodontal disease truly preceded the early stages of atherosclerosis. Conversely, it seems unlikely that atherosclerotic disease could cause periodontal disease. Hence, there does seem to be evidence, strongest for stroke but also for IHD and PAD, suggesting that the time-sequence criterion has been met.

Consistency

In terms of consistency IHD did not show much significance because of which more studies are required to be conducted for IHD to corroborate the relationship. However the relationship was found to be more consistent for stroke and PAD.

Biologic plausibility

There are many potentially biologically plausible explanations for the relationship between periodontal disease and CVD as shown in figure 2. Chronic infection may initiate atherosclerosis or interact with other risk factors to amplify the vessel inflammatory response.[18]

This response may be manifested by alteration of endothelial function or acceleration of plaque formation. Acute infection may destabilize plaques or exert inflammatory and thrombotic effects on atherosclerotic plaques.[10]

Infection may also contribute to elevation of acute phase proteins, which may in turn modulate atherogenesis.[6] Many studies demonstrate an association between periodontal disease and acute phase proteins such as Creactive protein and fibrinogen.[21]

Studies have also demonstrated the presence of oral pathogens in arterial plaque. In the study by Haraszthy and colleagues,[11] surgical specimens obtained during carotid endarterectomy, 44% of the 50 atheromas were positive for at least one of the target periodontal pathogens. In the study by Beck and coworkers, of IMT, participants with antibodies to specific periodontal pathogens had a great likelihood of having increased IMT.[5] Of particular relevance to the theory that periodontal-disease– induced inflammation alters endothelial function, is the recent report demonstrating improvement in endothelial function in patients after treatment of periodontal disease.[46]

Overall strength of evidence

The overall strength of evidence for causal criteria for the relation between periodontal disease and CVD is that specificity is not important and is not established here, the magnitude and consistency of the association is stronger for stroke, there is some initial evidence for dose response, consistency is low for CHD, time sequence has been established with more evidence for stroke and there is definitely biologic plausibility. Overall strength of evidence according to the causal criteria for CVD is depicted in table 1

Conclusion

Various meta analysis studies have been conducted relating periodontal disease and CVD as depicted in table 2. [7,15,16,17 ,20]

And it was found that the association between the periodontal disease and CVD appears stronger for both PAD and stroke than for CHD. According to the "strength of association" criteria, the overall body of evidence relating periodontal disease to CHD and PAD is weak, but stronger for stroke.

However limitation of these studies must be kept in mind before deriving at a definitive conclusion. More prospective studies must be conducted to assess varied population. At the present time, there is insufficient, but suggestive, evidence for a possible causal relation between periodontal disease and CVD, with slightly stronger evidence for stroke. If future studies show consistent associations, periodontal disease may be elucidated as an independent and potentially modifiable causal risk factor for CVD.

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Gingival Epithesis

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Abstract

Maxillofacial prosthesis is the branch of prosthodontics concerned with the restoration and or replacement of the stomatognathic and craniofacial structures with prosthesis that may or may not be removed on a regular or elective basis. These defects are either congenital or acquired due to trauma, pathological or after surgical intervention. Rehabilitation of maxillofacial defects can be efficiently accomplished by surgery, prosthetic substitute or a combination of both. Restoration should be fabricated so that it improves the appearance, function and quality of life of the patient.

This article describes the fabrication of an acrylic gingival epithesis for a patient with sunken cheeks due to long term absence of her posterior teeth. This gingival prosthesis gave fullness to her lips and cheeks. Patient was readily adapted to the prosthesis and it improved her appearance as well as her psychological morale.

Keywords: Maxillofacial prosthesis, Gingival epithesis , Esthetics.

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Introduction

The intention of fabricating a prosthesis and bringing a patient to normal social life is based on the fact that "Every human has the divine right to look human". In the early days reconstruction of head and neck defects were largely neglected by medical and dental profession. A solution was obtained with the formation of American Academy of Maxillofacial Prosthesis. The American Dental Council has now recognized maxillofacial prosthetics as a speciality . The reconstruction of lost tissues requires adequate knowledge of the materials and clinical skills.[1] Prosthetic restorations were fabricated by dental surgeons in association with plastic surgeons. History shows that Chinese were the first to fabricate restorations with waxes and resins. The facial restorations were made by physicians which were assisted by sculpters and painters. Pioneers like Ambroise Pare and Pierre Fauchard had contributed for the scope of maxillofacial prosthodontics by using obturators and other artificial appliances for restoration of congenital as well as acquired defects.

Advantages of maxillofacial prosthesis.[1]

1. Restoration of cosmetic appearance of the patient.
2. Restoration and maintenance of the health of tissues.
3. Improvement of lost physiological function.
4. Therapeutic effect.
5. No need for surgical exposure.
6. Less expensive.

Definition of Epithesis -In medical field, epithesis means a splint or other apparatus placed on a deformed area without making change to existing normal structures. With the advancements in the field of maxillofacial prosthetics, dentist are not only limited to extraction and replacement of lost teeth, but are able to replace lost parts of stomatognathic and craniofacial system functionally and cosmetically.

Case report

A 29 years old female patient presented with the chief complaint of sunken cheeks to the department of prosthodontics (Fig. 1). She was psychologically affected as her husband was ill-treating due to her unaesthetic facial looks [2,3,4]. She was wearing a removable partial denture to replace 16, 24 and 26 (Fig. 2). Radiographic examination involving panoramic view was done to rule out periodontal problems. After careful evaluation of the case, it was decided to give a separate gingival epithesis extending from

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Fig. 1 Before rehabilitation with gingival epithesis

Fig. 2 Removable partial denture to replace 16, 24 and 26

Fig. 3 Maxillary Cast for the prosthesis

upper right buccal sulcus to left buccal sulcus as there was enough undercuts.

Armamentarium

1) 3M ESPE Alginate Impression Material
2) Type 111 Dental stone (Gold stone)
3) Modeling wax
4) Heat cure denture base (Orthoplast)

Procedure

Primary impression was made with irreversible hydrocolloid impression material (alginate) and casts were made (Fig. 3). Wax pattern extending from right buccal sulcus to left buccal sulcus was prepared (Fig.4). An orthodontic wire of 20 Gauge was used to reinforce the prosthesis. Wax up model was shown to the patient and try in was done so that an evaluation of final treatment can be done by the patient. Pattern was invested and dewaxed. Intrinsic stains were incorporated in heat cure acrylic resin during packing (Fig. 5). Acrylization was done by normal compression molding technique. The prosthesis was finished according to the gingival contour. (Fig. 6). The prosthesis was stabilized and well retained by extending into labial and buccal undercuts (Fig. 7). As it was removable it was easy to maintain oral hygiene. It was well tolerated by the patient and satisfactory result was achieved without restricting her daily activities. (Fig. 8)

Discussion

Other options for sunken cheeks were silicon cheek implants which are well tolerated by the body. But some of the disadvantages are lack of esthetic judgment due to improper size and shape, numbness due to nerve injury and bleeding during or after the surgery.

Other indications of gingival epithesis.[5,6,7]

1. An effective method for correcting gingival recession.
2. It can be used in areas were tissues are lost due to trauma or traumatic extraction.
3. After periodontal surgery it can be used to simulate interdental papilla where the papilla is lost. It is retained by extension into proximal undercuts.
4. For covering the cervical areas when there is alveolar bone resorption and the patient is having problems with esthetics.
5. Esthetic correction of long clinical crowns and black triangles between teeth by imitating the lost gingival tissues.
6. As a prosthesis for gingival augumentation of implant supported prosthesis.
7. To aid in remineralizing early caries lesion in patients who have undergone radiotherapy for head and neck cancer.
8. Radiation protection plate for shielding the dental areas against radiation.

Contraindications[6,7,8]

- Poor oral hygiene.
- High caries index.
- Poor periodontal health.
- Known allergy to acrylic resin.
- Heavy smokers.

Summary and conclusion

Gingival epithesis have been used to replace lost tissues when all other methods such as surgery or regenerative procedures are considered unpredictable or impossible.[9,10] Surgical treatment can be done when small volumes of tissues are to be replaced. With this

Fig. 4 Wax pattern extending from right buccal sulcus to left buccal sulcus.

Fig. 5 Intrinsic stains incorporated in heat cure acrylic resin during packing

Fig. 6 Finished prosthesis

Fig. 7 Well retained prosthesis extending into labial and buccal undercuts

Fig. 8 After rehabilitation with gingival epithesis

method large volumes of tissues can be replaced to facilitate rehabilitation of the patient and it gave her a psychologic uplift.

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Non invasive management of oral submucous fibrosis by intralesional injection of steroid and enzyme

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Abstract

Oral submucous fibrosis (OSF) is a chronic, insidious disease caused by areca nut use, and is associated with both significant morbidity and an increased risk for malignancy. Its medical treatment is not yet fully standardized, although the optimal doses of its medical treatment is in the form of steroid combined with hyaluronidase.

Keywords: Oral submucous fibrosis, triamcinolone acetonide, hyaluronidase

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Introduction

Oral submucous fibrosis is a potentially malignant disorder that is more common in the Indian subcontinent but now it has a worldwide distribution. OSMF is a premalignant condition that has received considerable attention in the recent past because of its chronic debilitating and resistant nature. It is now strongly believed that there is a definite relation with the habit of areca nut chewing[1].

The majority of patients present with an intolerance to spicy food, rigidity of lip, tongue and palate leading to varying degrees of limitation of opening of the mouth and tongue movement. The hallmark of the disease is sub mucosal fibrosis that affects most parts of the oral cavity, pharynx and upper third of the esophagus. Conservative management has shown significant improvement in mouth opening and providing symptomatic relief to the patients[2].

Case report

A 40 year old male patient came to our dental op with complaints of burning sensation while consuming spicy food, and also complaints of difficulty in mouth opening since one year. No relevant medical and surgical history. On extra oral examination, restricted mouth opening was noticed up to 18mm, (Fig: 1) no clicking sounds or deviation while opening the mouth.

On intra oral examination there was generalized blanching of both buccal mucosae, labial mucosae and palate. Depapilation of the tongue (Fig: 2), restricted tongue movements and fibrotic bands were palpable on both buccal mucosae which extending from facial pillar to buccal mucosa in relation to premolar region bilaterally. Considering the above mentioned findings a provisional diagnosis of Grade II Oral Submucous Fibrosis was made.

Most important aspect of medical treatment is cessation of habit of eating betel quid, arecanut, other local irritants, spicy and hot food, alcohol and smoking. The most common mode of medical treatment had been the use of steroids in its various forms. Use of Collagenase, hyaluronidase (1500IU) along with steroid is an another therapy. In this case we planned to give intra lesional injection of triamcinalone 10mg/ml with hyaluronidase 1500IU, along with local anaesthesia biweekly for two months. Pre treatment assessment was evaluated as mouth opening upto 18mm, burning sensation (vas score- 8). During the every week of treatment the post treatment evaluation was assessed.

Results and Discussion

The second week of the treatment onwards significant improvement was noted, at the end of the treatment the mouth opening was increased upto 28mm, (Fig: 3) vas score was 2 and palpable fibrotic bands were reduced.

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Fig. 1 Pre treatment photograph

Fig. 2 Depappillation of the tongue.

Fig. 3 Post treatment photograph

Oral Submucous Fibrosis (OSMF) is a well recognized potentially malignant disease of the oral cavity with multifactorial etiology[3]. Multiple pharmacological interventions for OSMF have been reported to be effective in terms of symptomatic relief and improvement of mouth opening. It includes Topical and Intralesional Steroids, Placental Extracts, IFN-γ and Topical Hyaluronidase. However, their efficacy has not been completely established[4].

In patients with moderate OSMF, weekly submucosal intralesional injections of steroids may help to prevent further damage. Steroid ointment applied topically helps in cases with ulcers and painful oral mucosa. Its therapeutic effects were mainly anti-inflammatory and appeared to have a direct healing action[5]. Steroids are well known to act as immunosuppressive agents for prevention or suppression of the fibroproductive inflammation found in OSMF lesions, thus ameliorating this fibro-collagenous condition[6].

The use of topical hyaluronidase has been shown to improve symptoms more quickly than steroids alone. Hyaluronidase can also be added to intralesional steroid preparations. The combination of steroids and topical hyaluronidase shows better long-term results than either agent used alone[7]. Hyaluronidase degrades the hyaluronic acid matrix, actively promoting lysis of the fibrinous coagulum as well as activating specific plasmatic mechanisms. Therefore, relief of trismus may be expected through softening and diminishing of fibrous tissue.

Dexamethasone – Adult dose 4mg IV/IM. It decreases the inflammation by suppressing migration of polymorphonuclear leukocytes and reducing the capillary permeability[8, 9] suggest that counselling for cessation of habit completely followed by weekly intra lesional injection of hyaluronidase with jaw dialting exercises for the patient with chief complaint of restricted mouth opening and weekly intralesional injection of betamethasone for the patient complaining of burning sensation with minimal limitation of mouth opening.

Conclusion

The problem with this treatment was injections at weekly interval. Triamcinolone acetonide is a better corticosteroid for intra lesion injection as it has better local potency, longer duration of action and lesser systemic absorption. The drug treatment that is currently available for OSF is clearly inadequate. Submucosal injections of triamcinolone; dexamethasone, hyaluronidase, placental extracts and chitin were effective in OSF in few studies.

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Endodontic biofilms: When good treatment fails!

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Abstract

The persistence of microorganisms in the root canal system is the most widely accepted cause of failure of Endodontic treatment and is accompanied by the continuing presence of periradicular lesions. The root canal environment facilitates formation and persistence of bacteria as a biofilm. This structurally and dynamically organized complex biologic system is more resistant to antimicrobial and mechanical therapeutic measures. Recent innovations in the field of irrigation physics, plasma technology, lasers and photodynamic therapy have significantly empowered the clinician to battle biofilms. This review aims to provide a better understanding of the nature of Endodontic biofilm and the newer strategies in dealing with this challenge.

Keywords : Endodontic biofilm, Plasma dental probe, SAEW

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Introduction

It is very discouraging for an Endodontist to see his well treated root canal patients report back with pain and re-infection. The presence of micro-organisms in the root canal is one of the leading causes for endodontic treatment failure[1] .Noxious products from the root canal can cause periradicular disease. The ideal goal of root canal treatment is to remove all micro-organisms and debri from the root canals and provide an environment that allows natural periapical healing. The presence of micro-organisms as a biofilm makes the attainment of this goal difficult. Electron microscopic examination of a retreated tooth with persistent apical periodontitis by Gary.B.Carr showed the presence of a biofilm which was very resistant against any treatment and eventually led to root resection.[2]

According to Cohen, Biofilm is a sessile multicellular microbial community characterized by cells that are firmly attached to a surface and enmeshed in a self produced matrix of extracellular polymeric substance (EPS), usually polysaccharide[3]. The special characteristics of biofilm structure and dynamics make it extremely resistant to conventional treatment procedures and medications. The phenotype of biofilm bacteria is different from free floating (planktonic) bacteria owing to their extracellular polymeric substance which protects the bacteria from environmental threats. The internal structure of biofilm displays organized compartmentalization which permits trapping of nutrients and metabolites. The communication between the biofilm bacteria and exchange of genetic material between them is very distinct from planktonic bacterial communication and genetic exchange.

Types of Endodontic biofilms

The first identification of biofilm structure in root canal dentine was carried out by PNR Nair in 1987 using transmission electron microscopy[4]. Endodontic biofilms are broadly categorized onto four types by Cohen.

1. Intracanal biofilm
2. Extra radicular biofilm
3. Periapical biofilm
4. Foreign body centered biofilm

1. **Intracanal biofilms** are microbial biofilms found on the root canal dentine of infected teeth. The main organisms involved were loose collections of cocci, rods, filaments and spirochetes with extracellular matrix material of bacterial orgin. It also included a complex structure of the micro-organisms as seen in dental plaque.

2. **Extra-radicular biofilms** are found on the external root surface adjacent to the apex. The most common bacteria involved in the formation of extra radicular biofilm include

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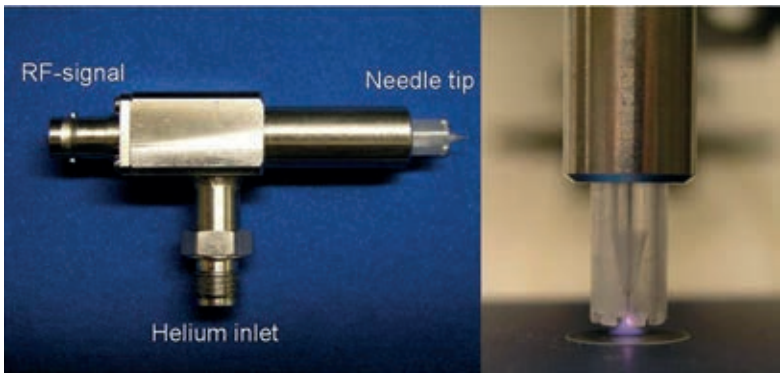

(Reference: Sladek et al,2006)

(Reference: Bonsor et al,BDJ,337-341,2006)

Fusobacteriumnucleatum, Porphyromonasgingivalis and Tannelleraforsythensis as detected using polymerase chain reaction based 16s rRNA gene assay[5].

3**. Periapical biofilms** are seen in the periapical region of endodontically infected teeth. The common micro-organisms associated with the periapical biofilms include Actinomyces species and Propionibacteriumpropionicum and these biofilms can even be formed in the absence of root canal infections and can cause periapical lesions

4. **Foreign body centered biofilm or biomaterial centered biofilm** is seen when the bacteria adhere to artificial biomaterials and forms a biofilm. The most common biomaterial involved in this type of biofilm is guttapercha used in root canal obturation with serum playing a crucial role in the biofilm formation. The micro organisms commonly isolated include coagulase negative staphylococcus, Staph. aureus, Streptococci, Enterococci, Pseudomonas aeruginosa and fungi[3].

Biofilms in Endodontic infections

Bacteria organized as biofilm community in the apical part of the root canal are the most common cause of primary or post treatment apical periodontitis[6]. The most effective method for biofilm removal in conventional root canal treatment is by mechanical debridement but the presence of canal irregularities prevents eradication of root canal biofilm due to inaccesibility of these areas to treatment measures.

The most commonly isolated micro-organism from root canal treatment failure cases is Enterococccusfaecalis (E.faecalis), a gram positive facultative anaerobic cocci.E.faecalis possesses certain unique characteristics which make them especially resistant to conventional treatment.E.faecalis is capable of withstanding nutritional deprivation and utilize serum as a nutritional source. It binds to dentinal tubules, produces collagen binding protein and serine proteases which alter the host response and supresses action of lymphocytes. It also possesses lytic enzymes and resist the activity of antimicrobial agents due to biofilm formation[7].

The other micro organisms isolated from infected root canal are coagulase negative staphylococcus, streptococci, porphyromonasgingivalis and actinomycesspecies. The presence of these micro-organisms in a biofilm gives them exceptional resistance to both antimicrobial agents and host defence mechanisms. The major clinical consideration is that the presence of such resistant microbial biofilms is often not detected by the clinician who obturates the root canal system in the presence of infection. Theoretically, a microbiologic sample should be taken in a treatment refractory case and when the samples yield negative cultures the root canal should be obturated. This is not often practical in the clinical setup allowing the micro-organisms to thrive and cause re-infection.

Eradication of Biofilm

The dense structure of the biofilm within the extracellular polymeric substance restricts the penetration of any antimicrobial agent into them. Microbial biofilms are being found to be resistant to chemotherapeutic drugs like amoxicillin, doxycycline and metronidazole[8].

Sodium hypochlorite is an effective endodontic irrigant to destroy Enterococcus faecalis. According to a study done by R.Ordinola-Zapata 1% sodium hypochlorite effectively removed upto 90% of the total biofilm volume and killed more micro-organisms in comparison to other irrigating solutions[9]. The antimicrobial action of 2% chlorhexidine, 10% citric acid and 17% EDTA was not statistically significant[9]. The other techniques used for biofilm eradication include use of medicated intra canal dressings and

obturation but these have not been able to successfully eradicate the endodontic biofilm invivo. Surgery have been used as a last resort in many therapy resistant clinical cases. Fortunately, many new techniques have been developed recently which show good promise in eliminating the biofilm bacteria. Even though some of these new techniques are currently under investigation. The techniques which proved themselves capable of eliminating the biofilm efficiently have been elaborated below.

The newer techniques of biofilm eradication include

1. Ultrasonic irrigation
2. Ozone
3. Plasma dental probe
4. Strong acid electrolytic water
5. Er:Yag laser
6. Antibacterial nanoparticles
7. Photoactivated disinfection.

1. Ultrasonic irrigation

Root canal irrigation is an indispensable part of endodontic treatment. Use of chemically active irrigants increases the efficiency of irrigation in removing bacteria and debri. The limitations in conventional irrigation include the complexity of the root canal anatomy, ultrastructure of dentin and resistance offered by the biofilm structure to its removal. The bubble dynamics produced by sonic and ultrasonic agitation are not sufficient to detach the biofilm inside the root canal. Using microbubbles along with ultrasonic irrigation could potentially increase the bubble dynamics and also the antibacterial effect. Studies on the synergistic effect of microbubble emulsion and sonic or ultrasonic agitation on endodontic biofilm in vitro by Anil Kishen et al showed the increased potential of this irrigating solution to remove biofilm bacteria[10].

2. Ozone

High concentration gaseous and aqueous ozone is strain, dose and time dependently active against the biofilm micro-organisms. The mechanism of action is probably damage caused by the release of oxidative oxygen species.

3. Plasma dental probe

Plasma dental probe is an effective way of root canal disinfection. Plasma which is the fourth state of matter is a collection of neutral species and charged particles. A non thermal, atmospheric pressure plasma generates reactive chemical species (oxygen species) which interact with micro-organisms leading to their destruction with the gas remaining at room temperature[11]. Older plasma jets could only remove the biofilms in the first millimetre of the root canal where the plasma came in direct contact with the canal, thus limiting the overall reduction of biofilm bacterial load. New plasma dental probes with a needle fine plasma plume has made possible plasma penetration of the entire length of the root canal. Studies done using this new plasma dental probe showed significant reduction in the bacterial load but had limitations in the form of its ex-vivo experimental set-up and less efficacy compared to 6 % NaoCl warranting the need for further research[12].

4.Strong acid electrolytic water

Strong acid electrolytic water (SAEW), also called Oxidative potential water (OPW), Electrochemically activated water (ECA) or Electrolysed oxidising water (EOW) has been used extensively for household and agricultural disinfection due to its safety and antibacterial effect. Strong acid electrolytic water (SAEW) is generated by electrical decomposition of sodium chloride in the anodicchamber of an electrochemical cell with a pH value ranging from 2.3 to 2.7. The sodium chloride solution reacts at the anode surface, producing mainly chlorine and oxygen, but also other reactive oxidants which are released into the bulk fluid in the cell. Strong acid electrolytic water exhibits excellent antimicrobial activity against both bacteria and viruses, including Escherichia coli, Enterococcus species, Candida albicans, herpes simplex virus type 2 (HSV 2) and human immunodeficiency virus (HIV) and is effective in several clinical applications in both medicine and dentistry. SAEW has showed substantial efficiency as an endodontic irrigant and with antibacterial effect against root canal isolates. In a study done by X.Chen et al using strong acid electrolytic water as a root canal irrigant against *Enterococcusfaecalis biofilm,* SAEW was able to eradicate *E.faecalis* both on coverslips and root canals of extracted human teeth[13]. The antimicrobial effect was substantially enhanced by ultrasonic vibration of the strong acid electrolytic water[13].

5. Er:Yag laser

The Er:Yag laser have been extensively used for removal of apical biofilms because of its ability to ablate hard tissue with very minimal thermal effects. Er:YAG laser was found to be effective against Enterococcus faecalis, Porphyromonas gingivalis and Fusobacteriumnucleatum biofilms on hydroxyapatite disks in a study done by Noiri Y et al[14]. Even after apical surgery, sometimes the periapical lesion remains due to incomplete removal of the infected cementum and surrounding tissues. Er:YAG laser can effectively eliminate this problem[15].

6.Antibacterial nanoparticles

Antibacterial nanoparticles like silver and gold nanoparticles are being currently investigated for their

effectiveness in the removal of microbial biofilms for root canal disinfection[16]. The use of silver nano particles as a gel formulation medicament was effective in disrupting *Enterococcus faecalis* biofilm on root canal dentin as per a study done by Anil Kishen et al[17]. The antimicrobial mechanism of silver nanoparticles is by inactivation of bacterial vital enzymes, causing the DNA to lose its replicating ability and eventually leading to cell death[18]. Metallic silver in the form of 3.8% Silver diamine fluoride ($Ag[NH_3]_2F$ as an endodontic irrigant has also been successful in eliminating *Enterocoocusfaecalis* biofilm in root canals where discoloration of dentin by silver is not a major concern[19].

7. Photoactivated disinfection

Photo activated disinfection (PAD) is the latest method for microbial biofilm eradication. PAD targets micro-organisms only, with no damage to any surrounding structures. It involves the use of a Photosensitizer dye that is activated by light in the presence of oxygen. During the preliminary phase the photosensitizer binds to the bacterial membrane and enters into the cytoplasm. When exposed to light of a particular wavelength, the photosensitizer gets activated with the liberation of reactive oxygen species and other free radicals. These products lead to damage to vital microbial cell functions and eventually cell death[20]. Modified photoactivated disinfection has shown superiority over conventional photo activated disinfection in eliminating biofilm bacteria. The modification is done by modifying photosensitization and irradiation medium and by introducing a dual stage approach in photo activated disinfection[21].

Conclusion

There are times when things go wrong even after doing everything right in treating a tooth endodontically. The invisible culprit in most of such treatment failures is the presence of persistent bacteria in the root canal space and its proximity.

The growth of micro-organisms as a biofilm is the most common cause of endodontic treatment failure. The most commonly isolated organisms from such biofilms include coagulase negative staphylococcus, Staph.aureus, Streptococci, Enterococci, Pseudomonas aeruginosa and sometimes even fungi. The application of biofilm model in endodontic infections help us to understand not only the pathogenesis but helps us to evolve newer methods of disinfection. These newer methods show tremendous promise in eliminating the biofilms and thereby preventing treatment failure. The need for proper understanding of the biofilm structure and its dynamics cannot be under emphazised.

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Emergency in a Dental Clinic
How to be Prepared

Ideally the following equipments and drugs should be present in a dental clinic:

- Pulse Oximeter
- Portable defibrillator (incorporating ECG print-out
- Portable oxygen delivery system
- Ambu bag (self-inflating with valve and mask)
- Oro-pharyngeal airways (sizes 1, 2 and 3)
- Cricothyroid puncture needles
- High volume aspiration with suction catheters and Yankauer sucker
- Disposable syringes (2, 5, 10 and 20 ml sizes)
- Needles (19, 21 and 23 gauge) and butterflies
- Tourniquet, sphygmomanometer and stethoscope
- Venous access cannulae ('venflons' 16 and 22 gauge)
- IV infusion sets/ Microdrip sets
- 'BM sticks' (for rapid assessment of blood sugar levels)

Emergency drugs

- Oxygen
- Adrenaline injection (1:1000 or lmg/1 ml)
- Hydrocortisone injection
- Anti-histamine injection (e.g. chlorpheniramine tablets 4 mg, injection 10 mg/ml) Avil 2 ml
- Diazepam (5 mg/ml)
- Glucose (10% solution) for injection, and powder for oral use
- Glucagon injection (ideally) 1 mg
- Atropine injection (100 fig/mi)
- Aminophylline amp
- Deriphylline inj
- Colloid solution for infusion (e.g. Haemaccel 500 ml).
- Gelfoam, Hemolock
- Tab sorbitrate 20 Mg for sublingual use
- Tab. Nifedipine (sublingual)
- Ringer's Lactate- 5% Dextrose- Normal saline

Fainting

Dentistry predisposes to fainting (syncope or vaso-vagal episode) due to fear, pain, unusual sights and smells, anxiety, fatigue and fasting. It is the commonest cause of loss of consciousness in dental practice. It is common in young men. Treat patients supine whenever possible.

Symptoms and signs

• Light-headed feeling (often with nausea) • warm, sweaty feeling • Pallor * skin cool and moist to touch • bradycardia (with a thready, low volume pulse) • loss of consciousness and collapse with resultant rapid, full pulse.

Differential diagnosis

• Hypoglycaemia • steroid insufficiency • drug reaction • Cerebrovascular accident • myocardial infarction • heart block or other causes of bradycardia • early epileptic seizure.

Management

- Place patient in a semi recumbent postion
- Increase ventilation (ask pt. to take deep breaths)
- Determine bradycardia by taking pulse at major vessel.
- Loosen clothing and open windows.
- Establish verbal encouragement of patient and administer glucose orally.
- If patient continues to go to drowsy state make him smell/inhale aromatic salt (spirit of Ammonia)
- Delay dental treatment unless urgent.

If recovery is slow or delayed — reconsider diagnosis.

- Check blood sugar and, if low, administer IV glucose.
- If bradycardia persists, give atropine IV incremental doses of 100 micro mili|g.

Maintain airway and administer oxygen. If hypotensive, consider steroid insufficiency administer IV hydrocortisone. Seek urgent medical attention. ■

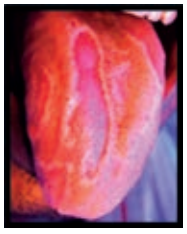
* Rahul R., ** Deepa M.S.

Quiz

1. **Syndrome/Syndromes associated with oral lichen planus**
   a. Grinspan syndrome
   b. Graham Little syndrome
   c. Vulvovaginal syndrome
   d. All

2. **The characteristic findings of multinucleated giant cells, Lipschutz bodies, cowdry Type A And Tzanck cells are seen in**
   a. Herpes Simplex Viral Infections
   b. Herpangina
   c. Pemphigus Disease
   d. Hand Foot Mouth disease

3. **Identify the tongue lesion**
   a. Geographic tongue
   b. Scrotal tongue
   c. Median rhomboid glossitis
   d. Macroglossia



4. **Acute multiple oral ulcers are seen in all except**
   a. Herpes Virus
   b. ErythemaMultiforme
   c. Pemphigus
   d. Contact Allergic Stomatitis

5. **Mikulicz ulcer is**
   a. Minor aphthous ulcer
   b. Major aphthous Ulcer
   c. Herpetiform Aphthous ulcer
   d. None

6. **Cobble stone appearance of the buccal mucosa and histopathological finding of non caseating granuloma is typical of**
   a. Gardner's Syndrome
   b. Ulcerative colitis
   c. Crohn's Disease
   d. Celiac disease

7. **O'Duffy criteria is for diagnosing**
   a. Behcet's syndrome
   b. Reiter's syndrome
   c. Stevens-Johnson syndrome
   d. Ramsay-Hunt Syndrome

8. **Honiton lace is seen in**
   a. Lichen Planus
   b. Pemphigus
   c. Erythema Multiforme
   d. Psoriasis

9. **Nikolsky's sign is seen in**
   a. Pemphigus and Paraneoplastic Pemphigus
   b. Pemphigus and Epidermolysis bullosa
   c. Pemphigus and Mucous membrane Pemphigus
   d. All

10. **An analogous accessory cusp seen occasionally on the mesiobuccal cusp of a mandibular permanent/deciduous molar is termed**
    a. Talon cusp
    b. Protostylid
    c. Cusp of Carabelli
    d. Dens Evaginatus

11. **Dentinogenesis Imperfecta is associated with mutation of the gene DSPP .DSPP is**
    a. Dentin sialophosphoprotein
    b. Dentin sialopolypeptide
    c. Dentin sialo pyroprotein
    d. Dentin sialopentaprotein

12. **In migrainous neuralgic /Cluster headache the pain is described as**
    a. Paroxysmal and intense; absence of trigger zone
    b. Paroxysmal and intense and presence of trigger zone
    c. Constant pain without trigger zone
    d. constant pain and presence of trigger zones.

Answers 1.d 2.a 3.a 4.c 5.a 6.c 7.a 8.a 9.d 10.b 11.a 12.a

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Dr.Joji George
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"CHARITY DENTAL TREATMENT YEAR – 2014"
REPORT OF ACTIVITIES No.1

WORLD DENTIST'S DAY: World Dentist's Day, 6th March 2014, observed by IDA Kerala State was hosted by IDA Attingal branch. This event was held at PMS College of Dental Sciences, Vattapara, Thiruvananthapuram. A mobile oral cancer detection camp was flagged off by the chairman of PMS Dental college, Dr. P.S. Thaha. An oral health seminar by Prof. Dr. Babu Mathew (Retd. Prof. of Community Oncology, RCC, TVM) was held for the public and dental students of the college. IDA Kerala State President, Dr. Nizaro Siyo, State Secretary, Dr. O.V.Sanal, President Elect, Dr. Thomas K.C & CDH Chairman, Dr. Joji George had participated on behalf of the state office. A health awareness skit was presented by the students of PMS Dental college. Dentist's Day celebrations were held in the evening at Hotel Aqua Rock, Mannanthala, Trivandrum. Entertainment programmes included musical night with orchestra and banquet. State officials and members from neighbouring branches, Kollam, Trivandrum, Kottarakara & Karunagapally had attended the program. Dr.Biju.A.Nair was the co-ordinator.

REQUEST TO IDA HEAD OFFICE: Request for the commemoration of 125th birth anniversary of Dr. R. Ahmed, the father of modern Indian dentistry and 100th year of modern Indian dentistry next year; that is 2015 was handed over to the honorary secretary general Dr.Ashok Dhoble on 25th May 2014 at Moovattupuzha Rotary Hall by the CDH Chairman. He assured a grand commemorative celebration on Dr.R.Ahmed's quasiquasi centennary.

WORLD NO TOBACCO DAY: Observation of world no tobacco day 2014 of IDA Kerala State was hosted by IDA Pathanamthitta branch on 31st May 2014 at YMCA hall, Pathanamthitta. Adv. Adoor Prakash, the Honourable minister for Coir and Revenue was the chief guest. Dr. Nizaro Siyo, President, IDA Kerala State presided over the function. Along with the IDA Pathanamthitta Branch Member, the display by skaters, holding Antitobacco slogan scribed placards made the campaign colorful and adorable.

He urged the crowd to continue depromotions tobacco usage to save the next generation from harmful diseases. He also appreciated the efforts taken by the association in this respect. Sri. Robin Peter, Pathanamthitta District Panchayat Member had felicitated the meeting and lead the swearing of antitobacco pledge. CDH chairman of IDA Kerala State, Dr. Joji George led a Class on Anti tobacco awareness. Dr.Biju.A.Nair, President, IDA Pathanamthitta, Dr. Manoj.M. Kumar, Secretary, IDA Pathanamthitta, Dr. Eugene Varghese Joseph, State Programme Co-ordinator and Dr. Johnykutty Jacob, Executive Member, Kerala Dental Council, Dr. V. Rajesh (State Executive Committee Member) Spoke on the Occasion.

After the meeting a poster competition was held for high school students on the topic- tobacco a universal menace. About 45 students participated and the winners were given cash awards and certificates. Prizes for the poster competition were distributed at the same venue. Dr. Eugene Varghese Jospeh was the programme co-ordinator.




CDE Report

Dr Anil G.
CDE Convenor, IDA Kerala State

Very thankful to all IDA members for elected me 2nd time as CDE chairman. Like the previous year, other than State CDE's, 4 state level CDE's also conducting.

State CDE's held,
1st CDE held at Central Kerala, Kottayam.
2nd CDE held at North Malabar, Kannur.
3rd CDE held at Pathanamthitta.

Other than that, Inter branch CDE's conducted by Local branch & local branch CDE's also conducted.

IDA State CDE, total 5 are there. In that principal sponsors are Colgate, Palmolive & Dentcare Dental lab. Other than that 4 inter branch CDE's sponsored by Biocon Laboratories, Banglore. It will be held at IDA Atttingal Branch in august.

KOTTARAKARA BRANCH

Monthly meeting and branch level CDE programme on - "Management of Medically compromised patients-The Challenges " by Dr Rajeev; MD Gen medicine was conducted on 15.6.2014 at IMA Hall, Punalur. The programme was well attended with 30 participants. The programme was followed by a discussion followed by High tea.

Welcome address by Dr Ajaikumar, Branch President, Introduction of Chief Guest by Dr Baiju P Sam and vote of thanks by Dr Sunjith Sudhakar, Hon Secretary. Participating certificates were presented to all attendees.

Dr. Anjana G.
WDC Chairperson

Dr. Shoma Anil
Secretary, WDC

Womens Dental Council

The first executive committee was held on 15th June 2014 at IDA Hall, Podikkundu, Kannur. It was decided that the next programme of WDC will be hosted by IDA Ernad.

The first CDE programme was held at Kannur on 15 June on the topic TOTAL ENDODONTICS. The programme was inaugurated by Dr K.C Thomas President elect of IDA Kerala State. The faculties of the programme were Dr Anjana. G Chair person of WDC Kerala state and also the HOD Dept of Pedodontics, Royal Dental College, Challissery and Dr Nimisha Mohan, Reader, Dept of Conservative Dentistry and Endodontics, Pariyaram Dental College. Dr Anjana spoke on the topic PULP THERAPY IN PRIMARY TEETH and Dr Nimisha spoke on TIPS FOR A BETTER ENDODONTIC TREATMENT. The programme was hosted by IDA North Malabar. And the efforts taken by Dr Anil Thunoli, Dr Mahesh Raj,Dr Sumitha Vishwanath and Dr Sreelekha Arun deserves special appreciation for the successful conduction of the programme.

TRIVANDRUM BRANCH

Our strength is a regular once in a month clinical club meeting which is conducted at IDA Trivandrum office. At present we had convened five meetings all were well attended by our members. Invited renowned speakers from Trivandrum enlightened us in various topics in dentistry and allied specialities.

We had a grant CDE programme conducted at Hotel Classic Avenue on Restorative dentistry by Dr.Kandaswamy on 27/04/2014, a very renowned speaker in Conservative and Endodontics. Response from the members was very inspiring.

Trivandrum branch conducted Final session of IDA cricket League match successfully at Central stadium IDA Malabar were the winners while Trivandrum Branch was the runner up. Trophies were distributed by chief guest Mr.Prathapan Nair DYSP Attingal.

State Level Doctors day celebration on July 1st

The Indian Dental Association Kerala State celebrated Doctor's Day on 1st july 20014 at Trans Towers, Vazhuthacaud. The function was hosted by the Trivandrum Chapter of IDA. The function was chaired by IDA Kerala Sate President Dr Nizaro Siyo and the Chief Guest of the evening was Dr Elangovan IAS , Principal Secretary to Government, Health and Family Welfare., Guests of Honour were Dr Ipe Varghese Registrar KHUS and Dr Jyothindra Kumar JDME. IPP Dr Antony Thomas ,President Elect Dr Thomas K C, Hon.Secretary Dr Sanal O V ,State CDH convener Dr Convenor Dr Anil G were in attendance.

The occasion was a platform for the launch two important programmes of the Association. The Standardisation and Accreditation Programme of IDA Kerala State (IDAACS) - The first of its kind in India - and the Dental Establishment Survey of Kerala (DESK) was launched during the event.

The Principal Secretary for Health, Dr Elangovan complimented the Association for launching these programmes which will go a long way in improving the dental care rendered to the public. He spoke at length on the efforts of the government to encourage such programmes and promised all help in the associations initiative towards better public health.

More than 20 senior dentists who have contributed much to dental health care and the association were honoured at the meeting.

MAVELIKARA BRANCH

The activities of IDA Mavelikara started with the installation ceremony held at hotel Indraprastha Mannar on 12th January 2014. The chief guest of the event was Mathew T Thomas MLA and the guest of honour was Dr Johnykutty, member, Kerala Dental council.

Dr Anil G. was in the charge of installation and inducted Dr Ninan Joseph as the new president and Dr Samith as the new secretary. The event was well organized and 50 members and their family attended the event

The first executive meeting of Ida Mavelikara was held at Hotel Travancore Regency on 15th January 2014.

The second executive meeting was held on 25th February at Hotel Murali, Haripad. A clinical club on pedodontics was also held on that day. The topic was 'fill well and feel well' taken by Dr Annop Samuel MDS.

The first CDE of the branch was held at hotel Wyte portico, Adoor on 30th march 2014. It was an inter branch cde programme. Dr Anand Raj MDS and Dr Nino John MDS were the speakers. 45 members from the branch and 8 members from the neighbouring branches attended the programme.

The third executive meeting of the branch was held at Travancore Regency, Mavelikara on April 1st 2014.

The fourth executive meeting of the branch was held at hotel Travancore Regency on 16th April 2014.

On April 25 IDA Mavelikara conducted a dental awareness programme at Govt LP school, Eruva, Kayamkulam. About 80 Primary school children attended the programme. Dr Prakash, Dr Samith, Dr Sajeev and Dr Varun participated.

Ida Mavelikara organized a family get together called summersplits at Green valley resorts Adoor on 11 may 2014. It was a mega event with lot of fun in and off the pool. About 25 members with their family attended and enjoyed the day.

Womens wing organized a workshop on paper jewellery making on that day itself. Dr Seethi Beegam was the incharge of the event and well organized it.

The second cde programme of Mavelikara was conducted at Green valley resorts on 11 May 2014. The topic was on orthodontics and named as *The final phase*. Dr Lalu MDS conducted the class.

COASTAL MALABAR BRANCH

2nd EXECUTIVE COMMITTEE MEETING ON 23/4/14

2nd Executive meeting held at Topform hotel on 23rd April at 8pm Secretary Dr.Rajesh present reports of activites. President Dr. Ahamed Shafi chaired the meeting and discussed various agendas about hosting North Zone Cricket Tournament at Payyanur, CDE programes, IDA Hope memberships, IDA family tour.

NORTHZONE CRICKET TOURNAMENT

North Zone Interbranch Cricket Tournament was held at Payyanur on May 4th at payyanur Boys High School Groun. Dr.Ahamad Shafi President IDA coastal Malabar inagurated the tournament. IDA malabar, IDA Malapuram, IDA Eranad, IDA North Malabar & IDA Costal Malabar Branch. were participated. Dr.O.V.Sanal Secretary IDA Kerala state was the chief guest and he introduced the players.

Winners are IDA MALABAR Branch ; runner up goes to IDA ERANAD Branch. Prizes were distributed for winners,runner up, best batsmen, best bowler etc in the closing ceremony.

PROFESSIONAL ENRICHMENT PROGRAMME

IDA Costal Malabar branch in association with Indian Society of Periodontology (ISP) Conducted CDE programme as a part of Professional Enrichment Programme which was held on 5/6/2014 at KBC GREEN Park, Edat. CDE programe started with formal inauguration. The chief guest was DR.Santhosh sreedhar (Past President ISP). Wellcome speach by CDEconvinor Dr.Renjith Raveendran. After the inaguration the faculty Dr. M.M. Dayakar (vice. president, ISP & Prof & HOD. Dept. of Periodontis, KVG. Dental College, Sullia) took lecture on Changing Trends in Perodental Practice.

3rd EXICUTIVE COMMETE MEETING

3rd EC meeting was held at KBC Greenpark, Edat at 7;30pm. President Dr.Ahamedshafi wellcomed EC members, Secretary Presented the reports of activities.

Letter from head office regarding election for the Post of Vice Presidents. The executive committee meeting unanimously decided to propose Dr.Santhosh Sreedhar to contest for the Post of vice President.

MEGA DENTAL CAMP

IDA Costal Malabar branch conducted a Mega Dental treatment camp in association with Century Dental College, Poinachi. The camp was organized by THANAL, Padinchatamkovil, Nileswar. Trikaripur MLA Mr.Kunhi Raman inagurated the camp, Dr. Ganapathy Bhat was hounered during the camp.

CDE PROGRAMME

4th CDE of IDA Coastal Malabar was held at Nalanda Resort on 29/7/2014 at 9.30am. It was a fullday programme with live demonstration. President Dr.Ahamed shafi welcomed participent. Dr. Mona Kakar well known endodontist was the faculty. She took lecture on Predictable Aesthetic Restoration.

After the the lecture in the post lunch sesssion she demonstrated restoration of class III filiiling and polishing techniqes.

CENTRAL KERALA KOTTAYAM BRANCH

MARCH 2014

CDE: Central kerala hosted the First State CDE programme on March 16th. Dr. Mathew Vayalil KDC president was the chief guest and Dr. Anil G state CDE chairman was the guest of Honor. Dr. Ashwin M Jawdekar spoke on Practice Management. 82 participants attended the programme.

CDH Activity : Free Dental Treatment camp was conducted on March 6th at Mundakapadam Agathimandiram at manganam kottayam. More than hundred patients availed treatments. Fillings, extractions and scaling were done during the camp.

Journal : Second issue of the branch Journal SMILE was issued during the State CDE programme on March 16th. Dr. George Varghese, principal GDC Kottayam released the journal and handed over the copy to Dr. Anil G, state CDE chairman.

Dentist Day Celebration: Dentist day was celebrated at Mundakapadam Agathimandiram at Manganam on March 6th. Free dental treatment was conducted and food wre provided to inmates.

Executive meeting: 3rd executive committee meeting of IDA-Central kerala was held on 24th March at Kottayam club.

APRIL 2014

FAMILY GET TOGETHER: Second family get together was held on April 27th Sunday at Hotel Royal Rivera, a lake side resort. 48 families attended the get together. Members could utilize pedal boats, swimming pool, kids zone was busy with games.

MAY2014

IDA zonal cricket match: Central kerala kottayam branch hosted the zonal cricket tournament on May 11th at MCH cricket stadium. Teams from Kunnamkulam branch, Malanad branch and Central Kerala branch participated. Kunnamkulam team was the zonal champions.

JUNE 2014

CDE: 3rd branch level CDE was conducted on June 1st at Kottayam club, Kottayam. Prof. Dr. Rajesh Gopal spoke on Backbone of dentistry, musculoskeletal disorder and ergonomics in dentistry.

Executive meeting: 4th executive meeting of IDA-CKK was held on 6th of june at kottayam club kottaym at 7:30 pm. Working committee for the Branch Silver Jubilee Celebrations was formed.

CDH: screening of FREE Denture programme at Vadavathoor, Kottayam as part of Silver Jubillee Celebrations on 28th of June.




ATTINGAL BRANCH

3rd branch Executive meeting (28/03/14)

The 3rd executive meeting of IDA Attingal branch was held on 28th Mar 2014 at Vyaparabhavan, Chirayinkhil road, Attingal, 7.00pm. The various proposed projects and programmes for the year 2014, were discussed. CDE, CDH, Editor, Hope & Image convenors gave their respective reports.

April 2014

Participation in Zone 1 state cricket tournament (06/04/14)

IDA Atttingal branch won the trophy of Zone 1 of ICL Kerala – 2014.

May 2014

Participation in Zone 2 state cricket tournament(04/05/14)

IDA Atttingal branch Royals lost to IDA Tvm branch of Zone 2 of ICL Kerala – 2014.

1st General Body Meeting & Family Getogether (04/05/14)

The 1st General Body Meeting of IDA Attingal branch was held on 4th May 2014 (Sunday) at Kayaloram resorts, near Panayil Kadavu bridge, near hotel Vakkom Palazzo, Vakkom by 4.00 pm. Report of the first 4 months were presented to the members. The Attingal branch cricket team who attained the Kerala state championship trophy was honored. Dr. Sunilraj, an eminent speaker talked on 'Chemistry of Relationships' during this meeting. 27 memebers attended this meeting.

CDE Program No. 2 (25/5/14)

The second branch CDE program of IDA Attingal branch for 2014 was conducted on 25th May 2014 at Park Centre, Technopark, Kazhakuttom, Thiruvananthapuram. The topic of the programme was 'LASERS.....A fresh wave'. The faculty was Dr. Rajesh Pillai. 13 delegate members attended the CDE program. A hands on demonstration was conducted by representative of Wiser ltd.

June 2014

3rd State Executive meeting (22/06/14)

The third state executive meeting was held at IMA at Thalassery, on 22nd June 2014. Dr. Biju A. Nair, Dr. Abhilash G.S, Dr. Sudeep .S & Dr. Arun Roy attended the meet. Announcement of the Sports & Games day was given to the state officials.

July 2014

4th branch Executive meeting (04/07/14)

The 4th executive meeting of IDA Attingal branch was held on 4th Jul 2014 at Attingal club, Attingal, 7.00pm. The various proposed projects and programmes for the year 2014, were discussed. CDE, CDH, Editor, Hope & Image convenors gave their respective reports.



KUNNAMKULAM BRANCH

General body meeting and family get together

Third general body meeting and family get together of IDA Kunnamkulam was held on May 5th 2014 at Hotel Konark Kunnamkulam. The programme started by welcoming the gathering by the president Dr Mohammed faris and we had discussion on various matters.

Women Dental Council of our branch organized cookery show by Mrs Asha Sunil, it was well appreciated and enjoyed by all the females. Coaching classes were organized for kids on clay modelling, craft and guitar by Mr Anadanath from Devamatha School Thrissur, we had maximum number of participation from kids side.

CDE Activites

3rd CDE was held on June 6th 2014 by Dr Ravi Varma on "Failures in endodontics and how to overcome". Programme started by collaring the president Dr Mohamad faris by the secretary, introduction of the speaker was done by Dr Susanth. The talk was very informative and intersting and well appreciated by all the members. Vote of thanks was done by Dr Vinod and momento to the speaker was given by Dr Sunil mohamed and meetig adjounred for dinner.



PATHANAMTHITTA BRANCH

Indian Dental Association Kerala State conducted World No Tobacco Day observation programme on May 31st 2014. The event was hosted by IDA Pathanamthitta and was conducted at YMCA Hall, Pathanamthitta.

The programme started at 9.00 AM with antitobacco awareness campaign which was flagged of by the IDA State President Dr. Nizaro Siyo. Dr. Jojy George (State CDH Convenor), Dr. Johnykutty Jabob (Member Kerala Dental Council, Pathanamthitta), Dr. Biju U. Nair (Branch President), Dr. Manoj M. Kumar (Secretary), Dr. V. Rajesh (State Executive Committee Member) along with the IDA Pathanamthitta Branch Member took part in the campaign. The display by skaters, holding Antitobacco slogan scribed placards made the campaign colorful and adorable. After the campaign antitobacco awareness class was lead by Dr. Joji George which detailed the effects of tobacco usage to the listeners. After the Class a Public meeting was arranged in view of the World No Tobacco Day which was inaugurated by the Honourable Minister for State Adv. AdoorPrakash. He urged the crowd to continue depromotins tobacco usage to save the next generation from harmful diseases. He also appreciated the efforts taken by the association in this respect. The meeting was presided by IDA State President Dr. NizaroSiyo. Sri. Robin Peter, Pathanamthitta District Panchayat Member had felicitated the meeting and lead the swearing of antitobacco pledge. Dr. Johnykutty Jacob, the executive committee member of Kerala Dental Council felicitated the function. After the meeting a poster competition was held for high school students on the topic-tobacco a universal menace. About 45 students participated and the winners were given cash awards and certificates. Dr. Eugene Varghese Jospeh was the programme

3rd State Level CDE programme was held on 27th July 2014 at Hotel Hills Park Pathanamthitta and was hosted by IDA Pathanamthitta. The inaugural meeting was presided by the president elect of IDA Kerala State Dr. K.C Thomas. The President of IDA Pathanamthitta, Dr Biju U Nair welcomed the gathering. Chief guest and the faculty Dr. Chandrasekaran Nair inaugurated the programme. The state CDE convenor Dr.Anil G and the member of Kerala Dental Council DrJohnykutty Jacob felicitated the function. Faculty Dr.Chandrasekaran Nair detailed on the topic "A-Z on impressions in Prosthodontics". The lecture was very informative and enlighting to the listeners. About 75 participants from different IDA branches attended the programme





WAYANAD BRANCH

1. CDE PROGRAMME:

Topic: Direct and Indirect veneers and full month rehabilitation

Faculty: Dr. Jonathan Eric Rao Restorative Prosthodontist (MSc) Catalunya, Barcelona, Spain.

The 2nd branch level CDE programme was held at Hotel Harithagiri, Kalpetta on 29th June 2014. The programme was attended by 15th Dental Surgeons.

2. EXECUTIVE MEETING:

a) The 4th Executive meeting was held at Dr. V.J Mary's residence on . 12 members attended

b) The 5th executive meeting was held at Hotel Harithagiri, Kalpetta an 11th July 2014, 13 members attended.

3. CDH - ACTIVITY:

a) A Dental Screening Camp and awareness class was conducted at Pookode Vetenary University by IDA Wayanad Branch in association with students union of vetnary college. 180 students were Screened at the camp by. Dr. Frens Jose and Dr. Noushad Palliyal.

b) MEDIA AWARNESS PROGRAMME: Media awareness programme conducted IDA wayanad Branch named as 'CHAT WITH YOUR DENTIST' has completed 12 episodes. The programme is being telecasted every Saturday at 7.30 PM through all local channels and repeat telecast on Monday and Thursday 1 P. M.

c) RADIO PROGRAMME:

The Central Council member Dr. Ranjith C K has given a "Dental health Talk on Anti Tobacco through "Radio Matoly" a local FM channel.

d) ASWAS 2014

IDA Wayanad Branch decided to donate 55 free dentures to needy patients. The Screening Camp was conducted at Lions Club Sulthan Bathery, Leo Hospital Kalpetta and IMA Hall, Mananthavady. A Total of 90 patients attended to Dr. Frens Jose, Dr. Sanoj .P.B, Dr. Bijoy OOmmen, Dr. Ranjith C K and Dr. Sajith PC attended and screened the patients at the camp.

MALABAR BRANCH

REPORT OF ACTIVITIES (APRIL, MAY, JUNE 2014)

CDE PROGRAMMES:-

1) Title:- Cast Partial Dentures-Design& Impression techniques
Faculty: Dr. Julie George Alappat (Asst.Prof. Govt.Dental College, Calicut)
Status: - Intra branch
Date: -08.06.2014
Venue :-IDA Hall, Calicut
Attendance:-32

CDH ACTIVITIES

1)School Dental Camp:- Conducted a camp at Bhavan's School, Perunduruth, Calicut on 28.02.14. More than 600 students were examined.

2) Awareness Class:- Conducted an awareness class at Madavoor HSS, Calicut

3) Dental Camp:- Conducted a camp at Sneha Residents colony, Paroppady, Calicut on 25.05.2014. Around 150 patients were examined.

4) Dental Camp:- Conducted a camp at Samanwaya residents colony, Vellimadukunnu, Calicut on 14.06.2014. Around 100 patients were examined.

EXECUTIVE COMMITTEE MEETING

EC Meeting No.2 Date: -16.05.2014
Place :-IDA Hall, Calicut Attendance: -12

OTHER ACTIVITIES:-

SARGAM ANNIVERSARY- The cultural club of IDA Malabar, SARGAM, celebrated its 1st anniversary on April 8th 2014. Dr. Nizaro Siyo, the president of IDA Kerala inaugurated the programme and South Indian film actress, Ansiba, was the chief guest. Variety entertainment programmes by our members and their families was the highlight of the day. (Ref.no-3)

IDA CRICKET TOURNAMENT:- IDA Malabar cricket team participated in the North zone cricket tournament at Payyannur and then in the state tournament held at Trivandrum. We were the champions in both.

KODUNGALLUR BRANCH

4th General body meeting of IDA Kodungallur branch was held on 30th May 2014 at IMA hall Kodungallur Along with general body a branch level code program in paedodontics also held. Dr Krishnakumar MDS taken CDE in paedodontics for general practitioners. 30 members attended the program which was sponsored by Colgate.

5th General Body meeting of IDA Kodungallur branch was held on 25th June 2014 at IMA Hall, Kodungallur. Along with general body meeting a branch level CDE program in Endodontics also held. Dr.M.A Vinod MDS taken CDE on single sitting Endodontics. 40 members attended the program.

IDA Kodungallur branch conducted a family tour on 28 & 29th June to Ramada resorts Kochi. 15 families attended the tour.

ERANAD BRANCH

On 2nd May, 2014 clinical club meeting on 'Oral Surgery-Day to Day solutions' was held At K.P.M. Residency, Perinthalmanna 8pm -10pm with Video presentation & panel discussion by Maxillo-Facial Surgeon Dr. Mohammed Yahya & Dr. Mohammed Shijo, 20 members attended the program.

On 4th May 2014, IDA Eranad branch Inter-branch Cricket Tournament-North zone organized by IDA Kerala state hosted by Coastal Malabar branch at Payyanur, Our enthusiastic & energetic Team Eranad become runner's up at Zonal level losing the Finals to Malabar Branch by 18 runs. we shall amend ourselves for better result next year. Congratulating Boyz of Team Eranad on breaking the ice & hoisting IDA Eranad as emergent branch at State & National level.

On May 18th, 2014 IDA Eranad conducted Educational Tour to Dentcare Dental Lab Muvuvattupuzha & Clinical club meeting was held at conference hall in the lab with renowned German ceramic technician Mr Tariq Ali on 'Technical aspects of Ideal Crown preparation & shade selection. 12 members were part of this tour which was followed by participartion at KEDDA trade fair.

On May 25th,2014 CDE on The Art & Science of Mastering Composite Restorations with live demo by Dr. Pankaj Maheshwari was held at Malabar Heritage, Manjeri from 9.30 am 5pm. 28 members attended the CDE.

On June 1st, 2014 2nd Inter-branch CDE on 'Clinical Significance of Interceptive Orthodontics' with live demonstration with patients by Dr.Benoy Ambookan was held at Pookoden's International, Kondonty from 9 am to 5pm. 30 members attended the CDE.

On July 4th, 2014 as part of observing 'National Doctor's Day' School Dental health Program was Held at Sacred Heart Public School, Perinthalmanna in association with Moulana Hospital, Perinthalmanna, 300 students were screened & Oral Hygiene care classes were taken for Students & Teachers. Dr. Sreenath & Dr. Sameer T. A. attended the program.

I place on record, Appreciation to Dr.Sabeesh CDE convenor & Dr. Rafeek, Website co-ordinator whose involvement in strengthening the branch activities in CDE & Sports.




KASARGOD BRANCH

We had a meeting on 25th June at IMA hall, Kasargod at 7.30 pm. A CDE program was conducted on the same day. Dr. Umesh Bas MDS., Asst. Prof., Dept of OMFS, KVG Sullia spoke on the topic "dental management of medically compromised patients". The meeting was well attended and followed by dinner. Meeting was sponsored by Technodent Lab, Kannur.

NORTH MALABAR BRANCH

EXECUTIVE COMMITTEE MEETING:
Fifth executive committee meeting was held on 13 - 06- 2014 at I.D.A. Hall, Podikkundu, Kannur.

C.D.E PROGRAMMES:1
TOPIC : TOTAL ENDODONTIC.
VENUE : I.D.A. HALL, PODIKUNDU
DATE : 15 - 05 - 2014
FACULTY : DR.ANJANA G . & DR. NIMISHA MOHAN
TIME : 10.00 AM TO 2.00 PM.

2. C.D.E :
TOPIC : IMPLANTOLOGY WORKSHOP
VENUE : IDA HALL PODIKUNDU
DATE : 06- 07- 2014 & 07 - 07- 2014.
FACULTY: DR.C.K. ASHOKAN, DR.JAIBIN JORGE, DR.AJEAY BHATT, DR.FARIS MOHAMMED SHAFI.

3. CDE :
TOPIC : BASIC LIFE SUPPORT (BLS)
VENUE : IDA HALL PODIKKUNDU.
DATE : 20 - 07- 2014.
FACULTY : DR.SULFIKAR ALI.
[MD. EMERGENCY MEDICINE, PARIYARAM MEDICAL COLLEGE].

C.D.H :
1. C.D.H. Programmes :

1. A dental check up camp and dental awareness class where conducted on 13-07-2014 at Mallapattam. Dr. Kabeer took the awareness class. Around 65 patients were examined.

2. A dental check up camp and dental awareness class where conducted on 20-07-2014 at Sangeorgia Special School, Sreekandapuram. Dr.Subair .K took the awareness class. Around 100 patients were examined.


रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
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DENTAL COUNCIL OF INDIA
NOTIFICATION

New Delhi, the 27th June, 2014

No. DE-97-2014.—In exercise of the powers conferred by Section 20 read with Section 17A of the Dentists Act, 1948 (16 of 1948), the Dental Council of India with the previous sanction of the Central Government, in supersession of the Dentists (Code of Ethics) Regulations 1976, except as respects things done or omitted to be done before such supersession, hereby makes the following Dental Council of India (Code of Ethics) Regulations :—

1. **Short title and Commencement** :
   - 1.1 These regulations may be called the Revised Dentists (Code of Ethics) Regulations, 2014.
   - 1.2 They shall come into force on the date of their publication in the Official Gazette of India.
2. **Definitions :**

   In these regulations, unless the context otherwise requires;
   - 2.1 'Act' means the Dentists Act, 1948 (16 of 1948);
   - 2.2 'Council' means the Dental Council of India;
   - 2.3 Dentist means any person with a register able dental degree (in Part A or Part B of the State Dental Register) either by virtue of a prior registration with the Council or one who has been conferred a Bachelor of Dental Surgery (BDS) from any university recognized by the Council and shall be referred to as a Dentist or Dental Surgeon;
   - 2.4 Post graduate dental degree refers to any postgraduate qualification such as M.D.S. in any discipline of dentistry received by convocation from a University recognized by the Dental Council of India or any other post graduate qualification equivalent to MDS that is recognized by the Council;
   - 2.5 All expressions used and not defined in these regulations shall have the meanings assigned to them in the Act and the regulations made there under from time to time.

CHAPTER 1

3. **Code of Dental Ethics**

   A. **Declaration :**

   Every dentist who has been registered (either on Part A or Part B of the State Dentists Register) shall, within a period of thirty days from the date of commencement of these regulations, and every dentist who gets himself registered after the commencement of these regulations shall, within a period of thirty days from such registration, make, before the Registrar of the State Dental Council, a declaration in the form set out for the purpose in the Schedule to these regulations and shall agree to have read, understood and thence to abide by the same.

B. **Duties and Obligation of Dentists in General**

3.1 **Character of Dentist / Dental Surgeon**

In view of the important role of a Dentist/ Dental Surgeon as a health professional educated and trained in surgical and medical treatment of diseases of the Oral cavity, he shall:

(3.1.1) Be mindful of the high character of his mission and the responsibilities he holds in the discharge of his duties as an independent health-care professional and shall always remember that care of the patient and treatment of the disease depends upon the skill and prompt attention shown by him and always remembering that his personal reputation, professional ability and fidelity remain his best recommendations;

(3.1.2) Treat the welfare of the patients as paramount to all other considerations and shall conserve it to the utmost of his ability;

(3.1.3) Be courteous, sympathetic, friendly and helpful to, and always ready to respond to, the call of his patients, and that under all conditions his behaviour towards his patients and the public shall be polite and dignified;

3.2 **Maintaining good Clinical Practices :**

The Principal objective of the Dental profession is to render service to humanity with full respect for the dignity of profession and man. Dental Surgeons should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion. They should try continuously to improve medical knowledge and skills and should make available to their patients and colleagues the benefits of their professional attainments. The Dentist/ Dental Surgeon should practice methods of healing founded on scientific basis and should not associate professionally with anyone who violates this principle. The honoured ideals of the dental profession imply that the responsibilities of the Dental Professionals extend not only to individuals but also to Society.

(3.2.1) The Principal objective of the Dental profession is to render service to humanity with full respect for the dignity of profession and man. Dental Surgeons should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion. They should try continuously to improve medical knowledge and skills and should make available to their patients and colleagues the benefits of their professional attainments. The Dentist/ Dental Surgeon should practice methods of healing founded on scientific basis and should not associate professionally with anyone who violates this principle. The honoured ideals of the dental profession imply that the responsibilities of the Dental Professionals extend not only to individuals but also to Society.

(3.2.2) Membership in Dental and Medical Associations and Societies: For the advancement of his/her profession, a Dental Surgeon should be encouraged to affiliate with associations and societies of dental, oral and allied medical professionals and play a proactive role in the promotion of oral health in particular and health of an individual in general.

(3.2.3) A Dentist/Dental Surgeon should enrich his professional knowledge by participating in professional meetings as part of Continuing Dental and Medical Education programs/Scientific Seminars/Workshops as stipulated by the regulations made by the statutory bodies from time to time and should register any mandatory requirements with the state registration bodies or any other body as stipulated.

3.3 **Maintenance of Dental/Medical records :**

(3.3.1) Every Dental surgeon shall maintain the relevant records pertaining to his out- patients and inpatients (wherever applicable). These records must be preserved for a minimum period of three years from the date of commencement of the treatment in a format determined by the Council or accepted as a standard mode of documentation.

(3.3.2) If any request is made for medical or dental records either by the patients/authorized attendant or legal authorities involved, the same may be issued to the competent authority within 72 hours after having obtained a valid receipt for all documents. It is prudent to keep certified photocopies / carbon copies of such submissions.

(3.3.3) A Registered Dental practitioner shall maintain a Register of Medical Certificates giving full details of certificates issued. When issuing a medical certificate he shall always enter the identification marks of the patient and keep a copy of the certificate. He shall not omit to record the signature and/ or thumb mark, address and at least one identification mark of the patient on the medical certificates or report. The medical certificate shall be prepared as in Appendix 2 of this document, Revised Dentists Code of Ethics Regulations, 2012.

(3.3.4) Efforts shall be made to digitalize dental/ medical records for quick retrieval.

3.4 **Display of Registration Numbers** :

(3.4.1) Every Dental practitioner shall display the registration number accorded to him by the State Dental Council in his clinic and in all his prescriptions, certificates and money receipts given to his patients.

(3.4.2) Dental Surgeons shall display as suffix to their names only recognized Dental degrees which are recognized by the Council or other qualifications such as certificates/diplomas and memberships/

honours/ fellowships which are conferred by recognized Universities/ recognized bodies approved by the Council and obtained by convocation in person or in absentia. Any other qualifications such as medical degrees, doctorates, post-doctoral degrees or any degree that has bearing on the person's knowledge or exemplary qualification may be used as suffix in a manner that does not convey to the observer or patient a false impression regarding the practitioner's knowledge or ability as a dental professional. Abbreviations of memberships in association or organizations of professionals should not be used as abbreviations in a manner that is misleading to the public [refer to Article 8.9.3 of this document, Revised Dentists Code of Ethics Regulations, 2012 for relevant details].

3.5 **Prescription of Drugs :**

Every dental surgeon should take care to prescribe and administer drugs in a responsible manner and ensure safe and rational use of drugs. He should as far as possible, prescribe drugs in a generic form.

3.6 **Highest Quality Assurance in patient care :**

Every Dental practitioner should ensure quality treatment that does not compromise the outcome of treatment. He must be vigilant about malpractice by other practitioners that may jeopardize the lives of others and which are likely to cause harm to the public. All practitioners should be aware of unethical practices and practices by unqualified persons. Dentists/ Dental Surgeons shall not employ in connection with their professional practice any attendant who is neither registered nor enlisted under the Dentists Act and shall not permit such persons to attend, treat or perform operations upon patients wherever professional discretion or skill is required.

3.7 **Exposure of Unethical Conduct :**

A Dental Surgeon should expose, without fear or favour, incompetent or corrupt, dishonest or unethical conduct on the part of members of the profession. It is the responsibility of the dental surgeon to report to the competent authorities' instances of quackery and any kind of abuse including doctor-patient sexual misconduct, misuse of fiduciary relationship, child abuse and other social evils that may come to their attention.

3.8 **Payment of Professional Services :**

The Dental Surgeon, engaged in the practice of his profession shall give priority to the interests of patients. The personal financial interests of a dental surgeon should not conflict with the medical interests of patients. A dental practitioner should announce his fees before rendering service and not after the operation or treatment is under way. Remuneration received for such services should be in the form and amount specifically announced to the patient at the time the service is rendered. It is unethical to enter into a contract of "no cure - no payment". Dental Surgeons rendering service on behalf of the State shall refrain from anticipating or accepting any consideration. While it is not mandatory to offer free consultations to fellow dental or medical professionals and their immediate family, it will be deemed a courtesy to offer free or subsidized consultations and treatment to them in situations where no significant expenses are incurred.

3.9 **Observation of Statutes :**

The Dental Surgeon shall observe the laws of the country in regulating the practice of his profession including the Dentists' Act 1948 and it's amendments and shall also not assist others to evade such laws. He should be cooperative in observance and enforcement of sanitary laws and regulations in the interest of public health. He should observe the provisions of the State Acts like Drugs and Cosmetics Act, 1940; Pharmacy Act, 1948; Narcotic Drugs and Psychotropic substances Act, 1985; Environmental Protection Act, 1986; Drugs and Magic Remedies (Objectionable Advertisement) Act, 1954; Persons with Disabilities (Equal Opportunities and Full Participation) Act, 1995 and Bio-Medical Waste (Management and Handling) Rules, 1998 and such other Acts, Rules, Regulations made by the Central/State Governments or local Administrative Bodies or any other relevant Act relating to the protection and promotion of public health.

3.10 **Signing Professional Certificates, Reports and other Documents :**

A Registered Dental Surgeon involved independently in the treatment of dental and oral surgical problems may be called upon to sign certificates, notifications, reports etc. He is bound to issue such certificates and to sign them. Documents relating to disability, injury in the oral and maxillofacial region and deaths occurring while under the care of such dental surgeons should be signed by them in their professional capacity for subsequent use in the courts or for administrative purposes etc. Such documents, among others, include the ones given at Appendix 4. Any registered dental surgeon who is shown to have signed or given under his name and authority any such certificate, notification, report or document of a similar character which is untrue, misleading or improper, is liable to have his name deleted from the Register.

CHAPTER 2

4 DUTIES OF DENTAL PRACTITIONERS TO THEIR PATIENTS

4.1 **Obligations to Patients**

(4.1.1) Though a Dental Surgeon is not bound to treat each and every person asking his services, he should attend emergencies reporting to the clinic and should be mindful of the high character of

his/her mission and the responsibility he discharges in the course of his professional duties. The Dental Surgeon should see patients at their hour of appointment as far as possible unless he is unable to do so due to unforeseen delays. He should never forget that the health and the lives of those entrusted to his care depend on his skill and attention. A Dental Surgeon should endeavour to add to the comfort of the sick by making his visits at the hour indicated to the patients. A Dental surgeon advising a patient to seek service of another Dental Surgeon or physician is acceptable. However in the case of medical emergency a Dental Surgeon must institute standard care including resuscitation in case of cardiac episodes, for which all dental surgeons must be adequately trained in basic life support.

(4.1.2) A Dental Surgeon can refuse treatment using his discretion but it should not be on the basis of any discrimination of colour, caste, religion, nationality or the presence of ailments such as HIV or other contagious diseases. However in keeping with the dictum of medical care, the dental surgeon must 'continue to treat' if he/she has accepted the patient for treatment. Treatment can be terminated on the wishes of the patient or with the resolution of the complaint for which the patient sought treatment. Treatment can also be terminated if the patient is in need of additional or expert care for which the Dental surgeon is not equipped to treat or if it falls outside the range of his expertise. In such instances, the patient should be referred to such specialists or higher centres where treatment is possible.

(4.1.3) A Dental Practitioner having any incapacity detrimental to the patient or which can affect his performance vis-a-vis the patient is not permitted to practice his profession.

4.2 **Confidentiality :**

Confidences concerning individual or domestic life entrusted by patients to a Dental Surgeon and defects in the disposition or character of patients observed during professionally attending to a patient should never be revealed unless such a revelation is required by the laws of the State. Sometimes, however, a clinician must determine whether his duty to society requires him to employ knowledge, obtained through confidence as a health care provider to protect a healthy person against a communicable disease to which he is about to be exposed. In such instance, the Dental Surgeon should act as he would wish another to act toward one of his own family in like circumstances.

4.3 **Prognosis :**

The Dental Surgeon should neither exaggerate nor minimize the gravity of a patient's disease. He should ensure himself that the patient, his relatives or his responsible friends have such knowledge of the patient's condition as will serve the best interests of the patient and the family.

4.4 **The Patient must not be neglected :**

A Dental surgeon is free to choose whom he will serve. He should, however, respond to any request for his assistance in an emergency. Once having undertaken a case, the Dental Surgeon should not neglect the patient, nor should he withdraw from the case without giving adequate notice to the patient and his family. He shall not wilfully commit an act of negligence that may deprive his patient or patients from necessary Dental/Medical care.

CHAPTER 3

5 DUTIES OF DENTAL SURGEONS AND SPECIALISTS IN CONSULTATIONS

5.1 **Consultation Etiquettes:**

(5.1.1) A Dental Surgeon should ordinarily be able to deal with all common diseases of the Oral cavity by virtue of his qualification and training. However, if the patient requires expert care of a specialist, appropriate references to Dental or Medical specialists may be made according to the nature of the problem. It is the duty of a specialist to refer the patient back to the patient's original dentist after the treatment for which the referral was made. While the specialist can collect his or her fees it would be unethical to pay commissions or any kind of gratuity to the referring dental surgeon.

(5.1.2) A Dental Surgeon shall not receive from the radiologist, laboratory or dispensing chemist any kind of commission in the form of money, gifts or gratuity for referrals. All referrals for investigation should be judicious, justifiable and done in the best interests of the patient to arrive at a diagnosis.

5.2 **Consultation for Patient's Benefit:**

In every consultation, the benefit to the patient is of foremost importance. All Dental Surgeons engaged in the case should be frank with the patient and his attendants.

5.3 **Punctuality in Consultation:**

Punctuality for consultations should be observed by a Dental Surgeon except in the case of unavoidable professional delays which are justifiable.

5.4 **Opinions and Disclosure:**

(5.4.1) All statements to the patient or his representatives made by any Consulting Healthcare Professional and/or the paramedical staff(nurses, etc.,) should take place in the presence of the Dental Surgeon, except as otherwise agreed. The disclosure of the opinion to the patient or his relatives or friends shall rest with the Dental Surgeon.

(5.4.2) Differences of opinion should not be divulged to the patient unnecessarily but when there is irreconcilable difference of opinion the circumstances should be frankly and impartially explained to the patient or his relatives or friends. It would be up to them to seek further advice, if they so desire.

5.5 **Treatment after Consultation:**

No decision should restrain the attending Dental Surgeon from making such subsequent variations in the treatment if any unexpected change occurs, but at the next consultation, reasons for the variations should be discussed/ explained. The same privilege, with its obligations, belongs to the consultant when sent for in an emergency during the absence of attending Dental surgeon. The attending Dental Surgeon may prescribe medicine at any time for the patient, whereas the consultant may prescribe only in case of emergency or as an expert when called for.

5.6 **Patients Referred to Specialists:**

When a patient is referred to a specialist by the attending Dental surgeon, a case summary of the patient should be given to the specialist, who should communicate his opinion in writing to the attending Dental surgeon.

5.7 **Fees and other charges:**

(5.7.1) A Dental Surgeon or the Clinic run by him shall clearly indicate the cost of treatment for the procedure and make an estimate of all costs likely to be incurred. Any increase in subsequent cost should be justified by the Dental surgeon. There is no bar on the display of fees and other charges in the Dental Clinic. Prescription should also make it clear if the Dental Surgeon himself dispensed any medicine.

(5.7.2) A Dental Surgeon shall write his name and designation in full along with the recognized dental degrees and the registration particulars in his prescription letter head.

Note: In Government hospitals where the patient-load is heavy, the name of the prescribing doctor must be written below his signature.

CHAPTER 4

6 RESPONSIBILITIES OF DENTAL SURGEONS TO ONE ANOTHER

6.1 **Dependence of Dental Surgeons to each other:**

A Dental Surgeon should consider it as a pleasure and privilege to render gratuitous service to other dentists, physicians and their immediate family dependants. However there is no mandatory bar on one accepting fees particularly when it involves expensive materials and time.

6.2 **Conduct in Consultation:**

In consultations, no insincerity, rivalry or envy should be indulged in. All due respect should be observed towards the Dental Surgeon/physician in-charge of the case and no statement or remark be made, which would impair the confidence reposed in him. For this purpose no discussion should be carried on in the presence of the patient or his representatives.

6.3 **Consultant not to take charge of the case:**

When a specialist Dental Surgeon has been called for consultation, the Consultant should normally not take charge of the case, especially on the solicitation of the patient or friends. The Consultant shall not criticize the referring Dental Surgeon. He shall discuss the diagnosis treatment plan with the referring Dental Surgeon.

6.4 **Appointment of Substitute:**

Whenever a Dental Surgeon requests another Dental Surgeon to attend his patients during his temporary absence from his practice, professional courtesy requires the acceptance of such appointment only when he has the capacity to discharge the additional responsibility along with his other duties. The Dental Surgeon acting under such an appointment should give the utmost consideration to the interests and reputation of the absent Dental Surgeon and all such patients should be restored to the care of the latter upon his return.

6.5 **Visiting another Case:**

When it becomes the duty of a Dental Surgeon occupying an official position to see and report upon a condition and appropriate treatment, he should communicate to the Dental Surgeon in attendance so as to give him an option of being present. The Medical Officer/Dental Surgeon occupying an official position should avoid remarks upon the diagnosis or the treatment that has been adopted.

CHAPTER 5

7 DUTIES OF DENTAL SURGEONS TO THE PUBLIC AND TO THE PARAMEDICAL PROFESSION

7.1 **Dental Surgeons as Citizens:**

Dental Surgeons, as good citizens, possessed of special training should disseminate advice on public health issues. They should play their part in enforcing the laws of the community and in sustaining the institutions that advance the interests of humanity. They should particularly co-operate with the authorities in the administration of sanitary/public health laws and regulations.

7.2 **Public and Community Health:**
Dental Surgeons, especially those engaged in public health dentistry, should enlighten the public concerning oral health and prevention of oral diseases such as dental caries, periodontal health, precancerous lesions and oral cancer. At all times the dental surgeons should notify the constituted public health authorities or hospitals of every case of communicable disease under his care, in accordance with the laws, rules and regulations of the health authorities.

7.3 **Pharmacists /Nurses:**
Dental Surgeons should recognize and promote the practice of different paramedical services such as Dental Hygienist, Dental Mechanic, Pharmacy and Nursing as professions and should seek their cooperation wherever required.

CHAPTER 6

8 **UNETHICALACTS:**
A Dental Surgeon shall not aid or abet or commit any of the following acts which shall be construed as unethical. For the purpose of this regulations a dental surgeon refers to all registered practitioners whether they are in individual private practice, attached to hospitals, teaching hospitals or employed by others whether they are corporate or otherwise:

8.1 **Advertisement:**
The global position on the issue of Ethics of Advertisement by Dental/Medical professionals has drastically changed over the last few decades. A Dentist or a group of Dentists may advertise provided that they maintain decorum, keeping in mind the high moral obligations and the value that society places on the important nature of their work and the moral character and integrity expected of them. Dental Surgeons are expected to exhibit integrity, honesty, fidelity and selfless service. Monetary commitments can only be secondary to the welfare of his patients. Under these circumstances it is unethical:

(8.1.1) To indulge in demeaning solicitation and false promises through advertisements or direct marketing of individuals, clinics or hospitals in contravention of the National Advertising Council or any other body regulating advertising in the country;

(8.1.2) To advertise, whether directly or indirectly or being associated or employed with any organization or company including corporate bodies that indulges in such activities in a manner which gives unfair professional advantage by cold targeting vulnerable groups and conducting camps and other promotional activity in schools, colleges, old age homes and distributing handbills, claim vouchers and other business promotional activities. Registered charitable organizations including registered body of Dental or Medical persons which provide fully free dental care and treatment out of altruism are however exempted;

(8.1.3) To be associated with or employed by those who procure or sanction such false and misleading advertisements or publication through press reports that promise inducements, rebates and false benefits;

(8.1.4) To employ any agent or canvasser for the purpose of obtaining patients in a manner that is commercial; or being associated with or employed by those who procure or sanction of such employment;

(8.1.5) To use or exhibit any disproportionately large sign, other than a sign which in its character, position, size and wording is merely such as may reasonably be required to indicate to persons seeking the exact location of, and entrance to, the premises at which the dental practice is carried on, and nowhere else;

(8.1.6) To allow the Dental Surgeon's name to be used to designate commercial articles such as tooth paste, tooth brush, tooth powder, mouth washes liquid cleaners, or the like except if such articles are fabricated in the dental clinic e.g. dentures, crowns, bridges, etc.;

(8.1.7) To permit publication of the Dental Surgeon's opinion on any procedure, equipment, in the general or lay papers or lay journals except when validated or supported by evidence based studies;

(8.1.8) To indulge in surrogate advertisements in the garb of educating the public through TV programs, magazines or periodicals. Any public information disseminated to the public in good faith and intention should not carry addresses telephone numbers, e-mail addresses etc., of the Dental Surgeon or the clinic employing him to attract patients to their establishment;

(8.1.9) To advertise in the electronic media, such as in television programs, that display names, addresses and telephone number of dentists as on-screen 'scrollers', or, of the clinics employing such dentists, etc.

8.2 **Soliciting:**
Soliciting of patients, directly or indirectly, by a Dental Surgeon, by a group of Dental Surgeons or by institutions or organizations is unethical except when permitted under the provisions mentioned later (vide 8.2.1 to 8.2.10 of this document, Revised Dentists Code of Ethics Regulations, 2012). A Dental Surgeon shall

not make use of himself (or his name) as subject of any form or manner of advertising or publicity through any mode either alone or in conjunction with others which is of such a character as to invite attention to him or to his professional position, skill, qualification, achievements, attainments, specialties, appointments, associations, affiliations or honors and/or of such character as would ordinarily result in his self-aggrandizement. A Dental Surgeon shall not give to any person, whether for compensation or otherwise, any approval, recommendation, endorsement, certificate, report or statement with respect of any drug, medicine, nostrum remedy, surgical, or therapeutic article, apparatus or appliance or any commercial product or article with respect of any property, quality or use thereof or any test, demonstration or trial thereof, for use in connection with his name, signature, or photograph in any form or manner of advertising through any mode nor shall he boast of cases, operations, cures or remedies or permit the publication of report thereof through any mode.
A Dental Surgeon is however permitted as an ethically acceptable practice to make a formal announcement in press regarding the following:

(8.2.1) On starting practice.
(8.2.2) On change of type of practice.
(8.2.3) On changing address.
(8.2.4) On temporary absence from duty for a prolonged period of time.
(8.2.5) On resumption of practice after a break a prolonged period.
(8.2.6) On succeeding to another practice.
(8.2.7) About the availability of new equipment or services without boastful claims of being the 'best' or 'first' especially if such services are already available in other facilities.
(8.2.8) Through insertion in Telephone directories, Yellow pages or on the internet is permissible and will only serve as public information. However any claim to superiority or special skills over others will be construed as unethical practice.
(8.2.9) Through maintenance of websites about dentists or dental clinics where all information is factual will not be construed as unethical practice. Websites can also carry details of treatment facilities available and the fees for the same. This will in fact help patients to make informed choices through a transparent system. However websites should not make claims or statements that are not factual and therefore misleading to the public.

8.3 **Publicity and Signage:**

(8.3.1) Printing of self-photograph, or any such material of publicity in the letter head or on sign board of the consulting room or any such clinical establishment shall be regarded as acts of self-advertisement and unethical conduct on the part of the physician. However, printing of sketches, diagrams, picture of human system shall not be treated as unethical;
(8.3.2) Using or exhibition of any sign, other than a sign which in its character, position, size and wording is merely such as may reasonably be required to indicate to persons seeking the exact location of, and entrance to, the premises at which the dental practice is carried on is considered unethical. These include:
(8.3.2.1) Use of sign-board with the use of such words which trivialize the dignity of the profession or notices in regard to practice on premises other than those in which a practice is actually carried on, or show cases, or flickering light signs and the use of any sign showing any matter other than his name and qualifications as defined under Clause (j) of Section 2 of the Act;
(8.3.2.2) Affixing a sign-board on a Chemist's shop or in places where the dentist does not reside or work.
(8.3.3) A Dental Surgeon shall not claim to be a specialist either through displayed signs on the name board and / or the office stationary (visiting cards, letterheads, etc.,) unless he has a special qualification (which is recognized by the Council) in that Specialty. A Dental Surgeon can however practice all branches of Dentistry provided he shows adequate qualification, competence and bona fide training in the concerned branch or branches.

8.4 **Patent and Copyrights:**

A Dental Surgeon may patent surgical instruments, appliances and medicine or Copyright applications, methods and procedures. However, it shall be unethical if the benefits of such patents or copyrights are not made available in situations where the interest of large population is involved.

8.5 **Running an Open Shop (Dispensing of Drugs and Appliances by Physicians):**

A Dental Surgeon should not run an open shop for sale of medicine for dispensing prescriptions prescribed by doctors other than him or for sale of dental medical or surgical appliances. It is not unethical for a Dental Surgeon to prescribe, supply or sell drugs, remedies or dental appliances in his clinic as long as there is no exploitation of the patients. Drugs prescribed by a Dental Surgeon or brought from the market for a patient should explicitly state the proprietary formulae as well as generic name of the drug.

8.6 **Rebates and Commission:**

(8.6.1) A Dental Surgeon shall not give, solicit, or receive nor shall he offer to give solicit or receive, any gift, gratuity, commission or bonus in consideration of or return for the referring, recommending or procuring of any patient for dental, medical, surgical or other treatment. A Dental Surgeon shall not directly or indirectly, participate in or be a party to act of division, transference, assignment, subordination, rebating, splitting or refunding of any fee for medical, surgical or other treatment.

(8.6.2) Provisions of Section 8.6.1 (of this document, Revised Dentists Code of Ethics Regulations, 2012) shall apply with equal force to the referring, recommending or procuring by a physician or any person, specimen or material for diagnostic purposes or other study / work. Nothing in this section, however, shall prohibit payment of salaries by a qualified physician to other duly qualified person rendering medical care under his supervision.

8.7 **Secret Remedies:**

The prescribing or dispensing by a physician of secret remedial agents of which he does not know the composition, or the manufacture or promotion of their use is unethical and as such prohibited. All the drugs prescribed by a dental surgeon should always carry a proprietary formula and clear name.

8.8 **Human Rights:**

The physician shall not aid or abet torture nor shall he be a party to either infliction of mental or physical trauma or concealment of torture inflicted by some other person or agency in clear violation of human rights.

8.9 **Unethical Practices:**

The following shall also be the unethical practices for a Dentist:

(8.9.1) A Dental Surgeon shall not employ a Dentist / Dental Surgeon in the professional practice or any other professional assistant (not being a registered dental hygienist or a registered dental mechanic) whose name is not registered in the State Dentists Register, to practice Dentistry as defined in Clause (d) of Section 2 of the Act. He may however retain the services of a medical practitioner or anaesthetist as necessary;

(8.9.2) Signing under his name and authority any certificate which is untrue, misleading or improper, or giving false certificates or testimonials directly or indirectly to any person or persons;

(8.9.3) Use of abbreviations after the Dental Surgeon's name except those indicating dental qualifications as earned by him during his academic career in dentistry and which conform to the definition of 'recognized dental qualification' as defined in Clause (j) of Section 2 of the Act, or any other academic qualifications from a recognized university obtained through a convocation indicating exemplary achievement. Any degree conferred on an honorary basis should be suffixed with the words "Honoris Causa". Such unacceptable abbreviations include, but not necessarily restricted to the following which are not academic qualifications:

(8.9.3.1) R.D.P. for Registered Dental Practitioner;
(8.9.3.2) M.I.D.A. for Member, Indian Dental Association;
(8.9.3.3) F.I.C.D. for Fellow of International College of Dentists;
(8.9.3.4) M.I.C.D. for Master of International College of Dentists;
(8.9.3.5) F.A.C.D. for Fellow or American College of Dentists;
(8.9.3.6) M.R.S.H. for Member of Royal Society of Hygiene;
(8.9.3.7) F.A.G.E. for Fellow of Academy of General Education, etc.;

(8.9.4) Submission of false information in declaration form at the time of assessment of Dental College.

(8.9.5) Serving as (Duplicate faculty) i.e. working simultaneously in two/more Dental Colleges.

(8.9.6) Conviction for any crime by any court will constitute unethical act.

8.10 **Naming and Styling of Dental Establishments:**

A Dental Surgeon or a group of Dentists/ Dental Surgeons shall refer to their establishment as a dental clinic. It may however be referred to as a dental hospital if the practice involves surgical treatment of oral and dental diseases under local or general anaesthesia and if the patients need to be maintained as an in-patient for part of a day or for several days for post-operative care provided the hospital fulfils the statutory requirements for such hospitals or establishments in the respective States.

8.11 **Contravention of Statutory Provisions:**

A Dental Surgeon shall not contravene any of the acts referred to in Article 3.9 of this document, Revised Dentists Code of Ethics Regulations, 2014, and named in Annexure 3 of the same document and the rules made there under as amended from time to time, involving an abuse of privileges conferred there under upon a dentist, whether such contravention has been the subject of criminal proceedings or not.

8.12 **Signing of Certificates:**

A Registered Dental Surgeon is bound by law to give, or may from time to time be called upon or requested to give certain certificates, notification, reports and other documents of similar character signed by them in

their professional capacity for subsequent use in the courts, or elsewhere for administrative purposes, etc. Such documents, among others, include the ones given at Appendix 4 of this document, Revised Dentists Code of Ethics Regulations, 2014. A Dental Surgeon shall not sign under his name and authority any certificate which is untrue, misleading or improper, or give false certificates or testimonials directly or indirectly to any person or persons. He shall however deem it his duty to sign all necessary certificates relating to health of the patients.

8.13 **Doctor-Patient Sexual Misconduct:**

A Dental Surgeon shall not be involved in immorality involving abuse of professional relationship and involve in sexual misconduct with a patient by misusing fiduciary relationship.

8.14 **Abiding by all Laws of the Land:**

A Dental Surgeon shall not aid or abet in any violation of the laws of the land or be involved in any matter that is against public policy. He shall not be convicted by a court of law for offences involving moral turpitude/ criminal acts.

8.15 **Relationship with Pharmaceutical Companies and Medical and Dental Industry:**

8.15.1 **Gifts, Travel, Hospitality, Monetary Grants:**

A Dental Surgeon shall not receive any gift from any pharmaceutical or allied health care industry and their sales people or representatives. A Dental Surgeon shall not accept any travel facility inside the country or outside, including rail, air, ship, cruise tickets, paid vacations etc. from any pharmaceutical or allied healthcare industry or their representatives for self and family members for vacation or for attending conferences, seminars, workshops, CDE/CME program etc., as a delegate. A Dental Surgeon shall not receive any cash or monetary grants from any pharmaceutical and allied healthcare industry for individual purpose in individual capacity under any pretext. Funding for medical research, study etc. can only be received through approved institutions and Professional Organizations by modalities laid down by law / rules / guidelines adopted by such approved institutions, in a transparent manner. It shall always be fully disclosed.

8.15.2 **Dental / Medical Research:**

A Dental Surgeon may carry out, participate in, and work in research projects funded by pharmaceutical and allied healthcare industries. A Dental Surgeon is obliged to know that the fulfillment of the following items [8.15.2.1 to 8.15.2.7 of this document, Revised Dentists Code of Ethics Regulations, 2012] will be an imperative for undertaking any research assignment / project funded by industry - for being proper and ethical. Thus, in accepting such a position a Dental surgeon shall:

(8.15.2.1) Ensure that the particular research proposal(s) has the due permission from the competent concerned authorities.

(8.15.2.2) Ensure that such a research project(s) has the clearance of national/state/ institutional ethics committees/bodies.

(8.15.2.3) Ensure that it fulfils all the legal requirements prescribed for medical research.

(8.15.2.4) Ensure that the source and amount of funding is publicly disclosed at the beginning itself.

(8.15.2.5) Ensure that proper care and facilities are provided to human volunteers, if they are necessary for the research project.

(8.15.2.6) Ensure that undue animal experimentations are not done and when these are necessary they are done in a scientific and a humane way.

(8.15.2.7) Ensure that while accepting such an assignment a Dental Surgeon shall have the freedom to publish the results of the research in the greater interest of the society by inserting such a clause in the MOU (Memorandum of Understanding) or any other document / agreement for any such assignment.

8.15.3 **Maintaining Professional Autonomy:**

In dealing with pharmaceutical and allied healthcare industry, a Dental Surgeon shall always ensure that there shall never be any compromise either with his/her own professional autonomy and / or with the autonomy and freedom of the medical institution.

8.15.4 **Affiliation:**

A Dental Surgeon may work for pharmaceutical and allied healthcare industries in advisory capacities, as consultants, as researchers, as treating doctors or in any other professional capacity. In doing so, a medical practitioner shall always:

(8.15.4.1) Ensure that his professional integrity and freedom are maintained.

(8.15.4.2) Ensure that patients' interest is not compromised in any way.

(8.15.4.3) Ensure that such affiliations are within the law.

(8.15.4.4) Ensure that such affiliations/employments are fully transparent and disclosed.

8.15.5 **Endorsement:**

A Dental surgeon shall not endorse any drug or product of the industry publically. Any study conducted on the efficacy or otherwise of such products shall be presented to and / or through appropriate scientific bodies or published in appropriate scientific journals in a proper way.

CHAPTER 7

9 **PUNISHMENTS AND DISCIPLINARY ACTIONS:**

A Dental Surgeon shall not aid or abet or commit any acts which shall be construed as unethical.

9.1 It must be clearly understood that the instances of offences and unethical conducts which are given above do not constitute and are not intended to constitute a complete list of the infamous acts which calls for disciplinary action, and that by issuing this notice the Dental Council of India and or State Dental Councils are in no way precluded from considering and dealing with any other form of professional misconduct on the part of a registered practitioner. Circumstances may and do arise from time to time in relation to which there may occur questions of professional misconduct which do not come within any of these categories. Every care should be taken that the code is not violated in letter or spirit. In such instances as in all others, the Dental Council of India and/or State Dental Councils have to consider and decide upon the facts brought before the Dental Council of India and/or State Dental Councils.

9.2 It is made clear that any complaint with regard to professional misconduct can be brought before the appropriate Dental Council for Disciplinary action. Upon receipt of any complaint of professional misconduct, the appropriate Dental Council would hold an enquiry and give opportunity to the registered Dental practitioner to be heard in person or by pleader. If the Dentist/ Dental Surgeon is found to be guilty of committing professional misconduct, the appropriate Dental Council may award such punishment as deemed necessary or may direct the removal altogether or for a specified period, from the register the name of the delinquent registered practitioner. Deletion from the Register shall be widely publicized in local press as well as in the publications of different Medical and Dental Associations/ Societies/Bodies.

9.3 In case the punishment of removal from the register is for a limited period, the appropriate Council may also direct that the name so removed shall be restored in the register after the expiry of the period for which the name was ordered to be removed.

9.4 Decision on complaint against delinquent Dental Surgeons shall be taken within a time limit of 6 months.

9.5 During the pendency of the complaint the appropriate Council may restrain the Dental Surgeon from performing the procedure or practice which is under scrutiny.

9.6 Professional incompetence shall be judged by peer group as per guidelines prescribed by State Dental Council. For this purpose the State Dental Council shall institute an Ethics Committee consisting of qualified persons of integrity and good name from amongst prominent registered Dental Surgeons in the State.

9.7 Where either on a request or otherwise the State Government or any competent authority is informed that any complaint against a delinquent practitioner has not been decided by a State Dental Council within a period of six months from the date of receipt of complaint by it and further the State Government or any competent authority has reason to believe that there is no justified reason for not deciding the complaint within the said prescribed period, the State Government or any competent authority may.

(9.7.1) Impress upon the concerned State Dental Council to conclude and decide the complaint within a time bound schedule.

(9.7.2) May decide to refer the said complaint pending with the concerned State Dental Council straightaway or after the expiry of the period which had been stipulated by the Regulation in accordance with para (9.7.1 of this document, Revised Dentists Code of Ethics Regulations, 2012) above, to itself and refer the same to the Ethical Committee of the State Dental Council for its expeditious disposal in a period of not more than six months from the receipt of the complaint with the State Government.

9.8 Any person aggrieved by the decision of the State Dental Council on any complaint against a delinquent Dental Surgeon, shall have the right to file an appeal to the State Government within a period of 60 days from the date of receipt of the order passed by the said State Dental Council. Provided that the State Government may, if it is satisfied that the appellant was prevented by sufficient cause from presenting the appeal within the aforesaid period of 60 days, allow it to be presented within a further period of 60 days.

Col. (Retd.) Dr. S.K. OJHA, Officiating Secy.
[ADVT. III/4/Exty./98/14]

Foot Note : The Principal Regulations, namely, the "Dentists (Code of Ethics) Regulations, 2014", were published in Part II, Section 3, Sub-sec (1) of the Gazette of India, Extraordinary, on 21.08.1976.