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EDITORIAL OFFICE
Neelambikam, Attukal, Manacaud
Trivandrum, Kerala - 695 009
Phone: 0471-2459235
Mobile: 09447066100
e-mail: editorkdj@gmail.com
web: www.idakerala.com

Oral health, general health and quality of life

Health-related quality of life is an important component of quality of life, being composed by physical, cognitive, emotional and social aspects. Nowadays, it is well known that it can be modulated directly or indirectly by imbalances in health as diseases, disorders or injuries, being sensitive to the signs, symptoms and treatment effects

Contemporary concepts of health suggest that oral health should be defined in general physical, psychological and social well-being terms in relation to oral status. Chronic diseases such as obesity, diabetes and caries are increasing in developing countries, with the implication that quality of life related to oral health, as well as general quality of life, may deteriorate. Because oral and other chronic diseases have determinants in common, more emphasis should be on the common risk factor approach

Regarding symptom/clinical variables, the presence of "chronic disease" and "pain" showed significant contributions to the health-related quality of life. Importantly, the presence of pain and chronic disease have been considered essential variables in studies of health-related quality of life and oral health-related quality of life due to impacts on the wellbeing of individuals

The key concept underlying future oral health strategies is integration with this approach, a major benefit being the focus on improving health conditions in general for the whole population and for groups at high risk, thereby reducing social inequities.

By integrating oral health into strategies for promoting general health and by assessing oral needs in sociodental ways, health planners can greatly enhance both general and oral health.

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

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Messages from the Secretary

Dr. Suresh Kumar G

Dear members,

GREETINGS to all members of IDA Kerala State. As we embark upon a new organisational year of activities we are extremely thankful for the trust and involvement that all members have shown towards the office.

We at the office are delighted to work with the new team of office bearers and looking forward to the Presidents and Secretaries seminar to chart out new plans for the year along with the branches. It is our firm belief that the stress should be on membership growth this year also. Although we achieved a membership growth of 32 % last year a lot needs to be done to further the cause.

We had embarked on streamlining office activities related to membership and management which again needs the active cooperation of the members. At this age of environmental consciousness we definitely will have to look more into the available e solutions with regard to communications and publications. We had initiated the web portal where members could access their own profile and details while having the option to update them as well. We request the members to make more use of the web portal and help the office in it efforts to make it a updated and fast mode of communication.

The onus of the state office will be on effective comunications with the Local Branches and its members. As we grow in strength and number we have to adapt more to embrace ourselves with the technology around us while at the same time realise that this does not create a disconnect with the members at large.

I hopethis year will be a continuation of the previous year during which we believe that we were able to carry along all members in unity and friendship and during which members extended their undivided support to IDA

I extend my appreciation to the Editorial Board of KDJ and in particular to Dr who over the years have made KDJ the best journal ever and won the best journal awrd for the eigth consecutive time.

Dr. Suresh kumar
Secretary, IDA Kerala State

Message from the President

Dr. Sabu Kurien

Dear members,

You have chosen me, to occupy the top most position of IDA Kerala state branch, as president, that too unanimously without an election; I am extremely honored and express my sincere gratitude to each and every one of you.

I joined the association in 1989 and for the last two and a half decades worked in the state executive committee. During this period, I may have offended some of our members and might have hurt their sentiments, none of that was personnel but, for the betterment of the association. So I hope all of you will forgive and forget, and extend your cooperation throughout the year.

IDA Kerala state's prestigious professional protection and social security scheme "HOPE "is in robust health and well managed. This year we are planning to increase the professional indemnity part. Currently the compensation is limited to 2lakhs only; we are aiming to raise that to 15 lakhs. Again in the social security part of the scheme, the fraternity benefit is only 10 lakhs now, we can very well increase that to 15 lakhs, if we can add another 1000 members, without causing any additional burden to the existing members. So I urge all the "HOPE" representatives and branch officials to work hard to increase the number of our "HOPE" members

Dentistry is going through a very difficult phase in Kerala. We have almost 20,000 dentists registered in Kerala dental council. That makes one dentist for every 1700 Keralite. Please keep in mind that, WHO recommended dentist patient ratio is 1: 7500. Even when we are in oversupply, and with the clear cut direction from dental council of India not to start any more dental colleges in Kerala, still our Kerala government is all out for starting new dental colleges. If this persists it's going to be a very severe competitive field in the future.

Cash rich corporates are eying the huge potential of dentistry and slowly they are getting the momentum. Their marketing strategies and unethical practices are causing lot of hardships to individual practitioners. Our writ petition against the corporates is still pending before the Hon. High court. In the current situation only Kerala government or Kerala dental council can take action against them and I hope the new president and the council members will be able to control the unethical practices by the corporate, as well as by some private dental colleges.

Earlier when we started practice, only a council registration was needed. Later a registration from local bodies came into being. Now we have to interact with many Govt: offices to run the clinic, like pollution control board, AERB, customs and central excise for service tax, sales tax dept; if you dispense drugs, etc. Recently many of us are being harassed in the name of surprise checking in our clinics. Even though the courts have ruled that a doctor's chamber is not a commercial establishment, still we are grouped under that, and the labour department officials frequent our premises.

I feel IDA can do a lot for the common practitioner. At present we are very active in conducting CDE'S, organizing games and cultural events, doing many humanitarian services, anti tobacco campaign, drug awareness programmes in schools, etc. Now we have to concentrate to bring our woes to the government and get positive response so that our members can focus more on treating patients in their clinic, rather than running around government departments for various certificates and renewals.

President won't be able to achieve anything alone, but we have a very efficient team of office bearers with us, who are ready to go to any extent. Together we will work for the betterment of dentistry. I once again request all of you to extend your wholehearted support throughout the year.

Thank you

Dr Sabu Kurien
President, IDA Kerala State

Editorial

Dr. K. Nandakumar

What NEXT ?

Amongst different professions, health profession is considered as very noble. That is why from admission to exit, stringent measures were employed. We produced high quality doctors, to be precise world class. For a long time, the standard was maintained mainly because of the high standards maintained by the institutions and the teachers. Everyone concerned knew that these doctors have to treat our own people, our own brethren. Once the number of medical institutions has started to grow without any concern for quality; we produced doctors in large numbers but for whom? We justified the increasing seats on international demand, increasing population and the poverty stricken villages. Medical seats were sold in our country for a high price. College managements considered it as a good business. The picture turned gray, when managements started considering medical colleges as pure business. The human element, the stringent examination pattern and the aspiration for quality – all have disappeared. Parents have started dictating for high marks for their wards. They think, the money paid is not only for the seat, but also for first class marks. The sad fact is that the same son cannot treat them when they are sick. Teachers of the colleges were also party to this. They have not executed their duty diligently and dispassionately. Teachers were facing the threat of unemployment and hence they have complied with the wishes of the management. Suddenly the government has woken up and searched for a solution. Thus came the National Exit Test (NEXT). Vested interests have played their part in this also. It will again be another 100 to 120 items of MCQ. Training centers will come. People will qualify to become doctors. When the patient reports with an emergency, they will faint. Without a clinical component, NEXT is going to be a big farce. In this murky water, recent budget has blissfully sanctioned 3000 PG seats for every year. This is the worst ever suggestion any government can make. Response to societal palpation has vanished long back, dermal evolutions that happened in due course have made pin pricks ineffective and we cannot make wounds to evoke attention. This is the land of Mahatma Gandhi. Responsible people should realize one fact that the primary objective of medical education is not to fill up the obituary columns. Please answer - what next?

Dr. K. Nandakumar
Editor, KDJ

Full mouth rehabilitation by placement of multiple implants after periodontal access surgery

*Dhanya Krishnan, **Padmakumar, **Raju Kurien Ninan, ***Anas Abdul Khader, ****Devisree Naveen

► Introduction:

The ideal candidate for a dental implant is good general and oral health. Adequate bone in jaw is needed to support the implant, and the best candidates have healthy gum tissues that are free of periodontal disease.

A dental implant (also known as an endosseous implant or fixture) is a surgical component that interfaces with the bone of the jaw or skull to support a dental prosthesis such as a crown, bridge or denture. The basis for modern dental implants is a biologic process called osseointegration where materials, such as titanium, form an intimate bond to bone.

Success or failure of implants depends on the health of the person receiving it, drugs which affect the chances of osseointegration and the health of the tissues in the mouth. The amount of stress that will be put on the implant and fixture during normal function is also evaluated. Planning the position and number of implants is key to the long-term health of the prosthetic since biomechanical forces created during chewing can be significant. The position of implants is determined by the position and angle of adjacent teeth, lab simulations or by using computed tomography with CAD/CAM simulations and surgical guides called stents. The prerequisites to long-term success of osseointegrated dental implants are healthy bone and gingiva.

The long-term success of implants is determined, in part, by the forces they have to support. As implants have no periodontal ligament, there is no sensation of pressure when biting so the forces created are higher. To offset this, the location of implants must distribute forces evenly across the prosthetics they support.[1]

The ultimate location of implants is based on both biologic (bone type, vital structures, health) and mechanical factors. Implants placed in thicker, stronger bone like that found in the front part of the bottom jaw have lower failure rates than implants placed in lower density bone, such as the back part of the upper jaw. People who grind their teeth also increase the force on implants and increase the likelihood of failures.[2]

Research suggests that the initial stability of the implant in bone is a more important determinant of success of implant integration, rather than a certain period of healing time. As a result, the time allowed to heal is typically based on the density of bone the implant is placed in and the number of implants splinted together, rather than a uniform amount of time. When implants can withstand high torque (35 Ncm) and are splinted to other implants, there are no meaningful differences in long-term implant survival or bone loss between implants loaded immediately, at three months, or at six months.[3] The corollary is that single implants, even in solid bone, require a period of no-load to minimize the risk of initial failure.[4]

The prosthetic phase begins once the implant is well integrated (or has a reasonable assurance that it will integrate) and an abutment is in place to bring it through the mucosa. Even in the event of early loading (less than 3 months), many practitioners will place temporary teeth until osseointegration is confirmed. The prosthetic phase of restoring an implant requires an equal amount of technical expertise as the surgical because of the biomechanical considerations, especially when multiple teeth are to be restored. The dentist will work to restore the vertical dimension of occlusion, the esthetics of the smile, and the structural integrity of the teeth to evenly distribute the forces of the implants.[2]

► Case report:

A 39 year-old female reported to the Department of Periodontology at Azeezia College of Dental Science and Research, Kollam with a chief complaint of mobility of upper and lower back teeth. She had undergone extraction of right upper anterior and posterior teeth 5 years back.

On clinical diagnosis it was noticed that her right canine,premolars and molars are missing. OPG and DENTASCAN were taken. A treatment plan was formulated which involved full

*P.G. Student, ** Professor, ***Reader, **** Senior Lecturer, Dept of Periodontics, Azeezia College of Dental Science and Research, Meeyannoor, Kollam. • Corresponding Author: Dr. Dhanya Krishnan, E-mail: dhanukrishk@gmail.com

mouth periodontal flap surgery followed by placement of implants in missing area.

Procedures carried out:

Initial therapy included patient education and motivation for adoption of stringent home plaque care measures, thorough scaling and root planing. Routine blood investigations (blood glucose- fasting and post-prandial,haemoglobin, bleeding and clotting times, total and differential leukocyte counts, were carried out.

On examination:

All her vital signs were in normal range and there was no relevant medical history.

Gingiva was reddish pink, enlarged with exaggerated scalloping, soft and edematous in relation to upper and lower anteriors. Exudate is present in relation 12. Peridontal pocket of 8-10mm in almost all teeth and Grade I mobility in 12, 26. OPG shows generalised angular defect.

The case is diagnosed as severe generalised chronic periodontitis. Overall prognosis is fair. The prognosis of 12 and 26 are both poor.

► Treatment plan:

The patient was put on Phase I therapy and was re evaluated and was planned for full mouth periodontal access therapy following root canal treatment on 12, 26.

2nd quadrant:

Peridontal regenerative procedure was done with tetracycline root conditioning and grafted with nano crystalline synthetic hydroxyapatite (Sybograf) mixed with PRF and

Fig. 1 Pre-operative view

Fig. 2 Implant placed

Fig. 3 Sequential Drilling

Fig. 4. 3 Implants Placed

Fig 5. Sutures placed

Fig. 6. 3 month post-op

Fig. 7. Screw exposed by laser

Fig. 8. healing abutment placed

Fig. 9. 2 weeks post-op

Fig. 10. Abutment placed

Fig. 11. Gig trail

Fig. 12. 2 weeks after abutment placed

Fig. 13. Prosthesis placed

GTR membrane placed in relation to 13, 22, 23, 25 and 26.

3rd quadrant:

Peridontal regenerative procedure was done with tetracycline root conditioning and grafted with nano crystalline synthetic hydroxyapatite (Sybograf) mixed with PRF and GTR membrane placed in relation to 31, 32, 35, 36.

4th quadrant:

Peridontal regenerative procedure was done with tetracycline root conditioning and grafted with nano crystalline synthetic hydroxyapatite (Sybograf) mixed with PRF and GTR membrane placed in relation to 46, 45, 43, 42.

1st quadrant:

3 implants (11.5 mm length, 3.25 mm diameter in relation to 13 area,

11.5 mm length, 3. 5 mm diameter in relation to 14 area and 11.5 mm length, 3.5 mm diameter in relation to 16 area) were placed.

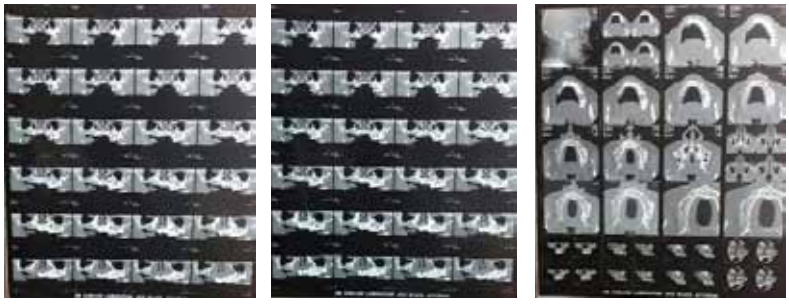
► Discussion:

After placement, implants need to be cleaned (similar to natural teeth) with a Teflon instrument to remove any plaque. Because of the more precarious blood supply to the gingiva, care should be taken with dental floss. Implants will lose bone at a rate similar to natural teeth in the mouth (e.g. if someone suffers from periodontal disease, an implant can be affected by a similar disorder) but will otherwise last. The porcelain on crowns should be expected to discolour, fracture or require repair approximately every ten years, although there is significant variation in the service life of dental crowns based on the position in the mouth, the forces being applied from opposing teeth and the restoration material. Where implants are used to retain a complete denture, depending on the type of attachment, connections need to be changed or refreshed every one

Fig. 14 Occlusal view

Fig. 15 REVIEW after 1 MONTH

PRE-OPERATIVE OPG



DENTASCAN

POST-OPERATIVE OPG(1 ½ YEARS)

POST-OPERATIVE OPG (AFTER 2 ½ YEARS)

to two years.[1] A powered irrigator may also be useful for cleaning around implants[5].

In this case,the patient who was diagnosed with severe generalised chronic periodontitis had undergone full mouth periodontal flap surgery followed by placement of 3 implants. OPG taken on 1 year recall visit showed gain in bone height suggestive of periodontal regeneration and osseointegration around implants. Later fixed prosthesis was placed over the osseointegrated implants.

► Conclusion:

Dental implant success is related to operator skill, quality and quantity of the bone available at the site, and the patient's oral hygiene, but the most important factor is primary implant stability.[6] While there is significant variation in the rate that implants fail to integrate (due to individual risk factors), the approximate values are 1 to 6 percent.[1,7]

Integration failure is rare, particularly if a dentist's or oral surgeon's instructions are followed closely by the patient. Immediate loading implants may have a higher rate of failure, potentially due to being loaded immediately after trauma or extraction, but the difference with proper care and maintenance is well within statistical variance for this type of procedure. More often, osseointegration failure occurs when a patient is either too unhealthy to receive the implant or engages in behavior that contraindicates proper dental hygiene including smoking or drug use.

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The Presidents Secretaries Seminar 2017

The Presidents Secretaries Seminar 2017 of IDA Kerala State held in Hotel Uday Suites, Shangumughom on February 11th, 2017 was hosted by IDA Trivandrum Branch. Attendees were benefited with various informative sessions.

The ancient indian medical philosophy (AIMP)

* Anand K.S.

Abstract

Ancient India was a storehouse of knowledge. The Gravitation theory, Atomic theory, Big Bang theory and Quantum theory find their origin in the Ancient Indian thoughts. But the modern world could not recognize the greatness of the Vedic literature because primarily India was under foreign rule and these scripts were in Sanskrit which is a language based on Tathwa or the elemental principle that connects the individual with the universe and makes a positive comparison leading to the conclusion of unity in diversity. So the interpretations have a wider meaning unlike western languages that carry the literal meaning. The misinterpretation of Vedic literature had caused lot of problems that continues even till now. Ancient Indians made significant contributions to the field of philosophy, art, science, literature and medicine. World is at the verge of consumerism and dependence; hence preservation of the ancient source is the need of the hour. The Ancient Indian Medical Philosophy (AIMP) aims at creating awareness regarding our great culture, philosophy and techniques that can be used selectively to repair the wound caused due to misuse of modern methods. The surgical methods, instruments, etc, give an insight regarding the mode of operation that was carried out in Ancient India. AIMP also aims to introduce the most ancient method of teaching, the method of Thatwa or the elemental principle that connects oneness in the separateness.

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The ancient name of India is Bharath. The word "Bha" refers to the principle represented by the Divine Knowledge. Self- Knowledge is "Bha". "Bharathiyas" are those who take delight in self-knowledge. Bharathiya is also one who has harmony of Bhava, Raga and Thala; Harmony of Thought- the Power of wisdom (jnana Sakthi), Word-the power of Volition (Ichcha Sakthi) and Deed-the power of Action (Kriya Sakthi)[1]. According to R.C Majumdar, Indian history can be divided into Ancient (before 1000 A.D), Mediaeval (Turkish invasion) and Modern (eighteenth century onwards, the period during which the British empire was established on Indian soil)[2]. Much of what we know about India's early history comes from two different sources, the Harappan civilization and the Vedic literature. Foreign travellers who visited this land gave detailed descriptions about the great civilization[3]. Dr. Munshi after studying in detail the history of India noted that the main difference between India and other ancient countries lies in the continuity of her history and civilization. He said that the history must investigate and unfold the values which age after age has inspired the inhabitants. Such a history of India has still to be written[2]. But according to Dr. Fathimi, Professor and chief editor of IRI Karachi, this continuity got broken after the invasions leading to the total eclipse of ancient Indian medical culture from the Gangetic valley. After the destruction of Ancient Indian Universities like Taxila, Nalanda, Vikramashila, and the last one in Ujjain around 1235 CE, documents supportive of the culture and literature were lost. It was around the same time these universities were being destroyed that the University of Oxford was being established on the other side of the planet[3].

A bullock cart driver with the English army named Cowasgee, a Maratha, came for Rhinoplasty operation in Pune on March 1793. One year back he was captured by Tipu Sultan's men and had his nose and one of his hands cut off. The Indian surgeon who operated on him used the skin from the fore head to repair the nose. No one in history knows about the Indian surgeon, but two British surgeons who witnessed this operation sent back detailed descriptions and diagrams. The publication In Europe in 1816 of their account gave birth to modern plastic surgery[3]. Doctor Hirschberg of Berlin says— "the whole plastic surgery in Europe took a new flight when these cunning devices of Indian workmen became known to us".

Upanishads or Vedanthic literature was supposed to be 1180 in number but only 108 has survived now[1]. Most of these scriptures were translated by foreign scholars and blindly followed by rationalist and Neo Hinduism scholars after Independence. It has to be noted that Devavani or the Vedic Sanskrit is a language different from western languages that carry the literal meaning. So the language caused a lot of misinterpretation, masking the true meaning. Indian scholars who had studied the traditions and scriptures in

* Professor, Department of Prosthodontics, Kannur Dental College, Kannur. • Corresponding Author: Dr. Anand, E-mail: draksmds@gmail.com

the correct manner have always given their interpretations but unfortunately in the academic aspect the foreign interpretations are still followed. Sanskrit is a language based on Thatwa or elemental principle that compares and sees the oneness even from dust to a mountain. For example, The verse "Imam Me Gange Yamune Saraswathi", describes the veins in the body that carry blood just the same way rivers flow and keep the earth healthy. This Thatwa is something that has to be studied differently because they go beyond our mind and intellect[4]. Studying the Vedic literature completely in a life time is an impossible job as noted by several learned scholars. For interpreting the Vedic literature in English, Max Muller sought the help of hundreds of Vedic pundits and took twenty five years for just preparing the manuscripts and another twenty years for printing. Imagine working full time for forty five years for a single publication with so many scholars round the clock[6]. In this great task it is natural that lot of misinterpretations may occur, and many realized Gurus and traditional scholars had cleared many of the contaminants caused by the misinterpretation and additions.

The rudiments of Embryology, Midwifery, child management (pediatrics) and sanitation were formulated in the age of Vedas and Brahmanas[5]. Detailed description about the various methods used in ancient India regarding medicine and surgery are explained in the works of Sushrutha, Charaka, Vagbhatta, Nagarjuna and others. Sushruta classified all surgical operations into five different kinds, and grouped them under heads such as Aharya (extractions of solid bodies), Bhedya (excising), Chhedya (incising), Eshya (probing), Lekhya (scarifying), Sivya (suturing), Vedhya (puncturing) and Visravaniya (evacuating fluids). The surgery of Sushruta recognizes a hundred and twenty-five different instruments, constructed after the shape of beasts and birds, and authorizes the surgeon to devise new instruments according to the exigencies of each case. The qualifications and equipments of a surgeon are practically the same as are recommended at the present time. A light refreshment is enjoined to be given to the patient before a surgical operation, while abdominal operations, and operations in the mouth are advised to be performed while the patient is fasting. Sushruta enjoins the sick room to be fumigated with the vapours of white mustard, bdellium, Nimva leaves, and resinous gums of Shala trees, etc. We find in the Samhitha that ophthalmic, obstetric and other operations were performed with the utmost skill and caution[5].

► Age of the samhita

The age of the Samhita is not known. The present Susrutha Samhita is the recension of recensions, made by Nagarjuna who lived during the 4th Century B.C (not to be confused with the Alchemist of the 10th Century)[5]. It was the opinion of the western scholars that the age immediately preceding the Sakya Muni (Buddha) was a period of decadence in Hindu thought, and the Susrutha Samhita must have been a fruit of a revived intellectual activity, an assumption which is in favour of Greek Hypothesis[9]. But there had been great men in India before Buddha (535 B.C) and such opinions reflect an attempt to raise the superiority of west. It is a matter of fact that Buddha actually reflected the fine lines of vedantha philosophy and appeared at a time of decadence in the traditional Hindu thoughts. The Aryan Invasion theory is literally out of the picture with no evidence of invasion in the Vedas or in the Harappan civilization, along with the Cambay excavations and the recent genetic evidence. India accounted for 33% of the world GDP in the first century CE which was three times that of Western Europe and much larger than Roman Empire and China[3]. Even in the medical field there must have been a strong base that existed for centuries. So the opinion of Indian scholars to place Susrutha and Charaka during the Vedic age is justified. The founder of healing art among Greeks, Pythagoras imbibed his mysteries and metaphysics from the Brahmanas of India[7,8]. With the birth of Buddhism, Buddhist smaranas were sent out to Greece, Asia Minor, Egypt and other distant countries and along with it the Ancient Indian Philosophy and medicine made way to the minds of these people[9]. Bernard Laufer while commenting about Abu Mansur's book "the Principles of Pharmacology" says that it is first to reveal what Persian –Arabic medicines and pharmacology owe to India, and how Indian drugs were further conveyed to Europe[10]. The knowledge about Kundalini (Serpent Power) and the Saptachakras (Seven Bio-energy fields) that can project the seven lokas or worlds were contributions of our ancient sages thousands of years before civilization began in the west.. Their connection with the nerve plexus has been studied in detail by reputed scholars like Prof. Dr. Ravi R Javalgekar[11]. The seven heavens and the power of the serpent, find their mention even in the holy scriptures in the west. Many believe that there is close similarity between the stick of Caduceus and the Sushmana Nadi which is the used as the symbol of medical profession. The two snakes seem to signify the Ida and Pingala of Kundalini serpent power. Thus we find that Ancient Indian Philosophy benefitted the whole world long time back and has been the backbone of spiritual force in the world but unfortunately has been eclipsed by the monopolistic thoughts and concepts that conquered the world. Rig Veda belonged to the bronze age but Atharva Veda mentions "Krishna Ayas" or dark bronze. Iron smelting was developed in central India which was rich in iron ore. During the early seventh century, the most important export of India to the Arab world was the steel sword. This remained true even at the time of the Christian Crusaders. The famous Damascus Sword was either imported from India or was made using Indian techniques[3]. These techniques had their origin much earlier and we find high quality instruments occupying

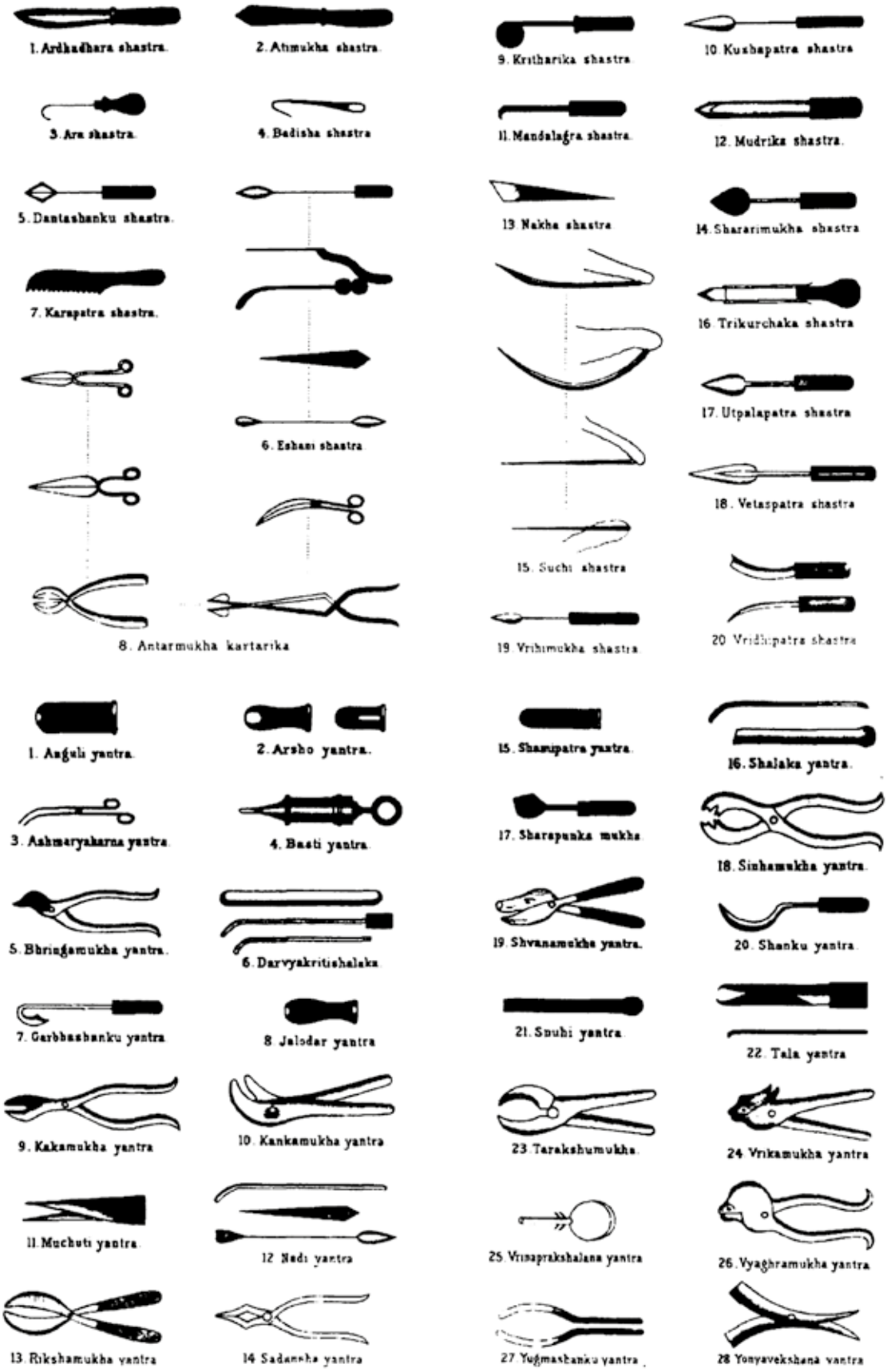

Fig. 1 Surgical instruments used in ancient India

the operation table of Susrutha. Instruments used for surgical procedures during the time of Susrutha were made of iron[5].

► Surgical appliances and their uses

Surgical appliances were divided into the following groups or types- Svastika, Sandansa, Tala, Nadi, Shalaka and Upa yantras(minor or accessory appliances). Svastika yantras (forceps) are divided into twenty four sub-classes. Sandansa yantras(tongs) into two; Tala yantras into two; Nadi yantras (tubular) into two; Shalaka yantras (bougies) into twenty eight and Upa yantras into twenty five different types. The mouth of these appliances are usually made to resemble those of birds and beasts and should be made sharp and keen. Svastika is used in extracting any foreign matter which may have entered into the bones. Sandansas are used in withdrawing substances from below the skin, flesh, veins or nerves. Tala Yantras are used in removing splinters from inside the nose, ears and other external channels or passages. Nadi Yantras are used in inspecting the seat of affection as in piles, abscess, etc. or as accessories to other surgical appliances. Shalaka yantras are used for searching pus in a suppurated part or limb, cutting and withdrawing a shalyam, etc. Six types of probes are used in cleansing the pus and loose cotton was attached on their top ends. These directors can be treated with alkaline medicine and Agni karma or cauterisation can also be carried out[5].

► Instruments used in connection with a surgical operation

These instruments are twenty in number such as Mandalagram, the Karapatram, the Vriddhipatram,the Nakhashastram, the Mudrika, the Utpalapatram, the Arddhadharam, the Suchi, the Kushapatram, the Athemukham,the Shararimukham, the Antarmukham, the Trikurchakam, the Kutharika, the Vrihimukham, the Ara, the Vetasapatrakam, the Vadisha, the Dantashanku, and the Eshani.

The Mandalagram and Karapatram are used in incising and scraping. The Vriddhipatram, the Nakhasastram, the Mudrika, the Utpalapatram, and the Arddhadharam are used in incising and excising. The Kushapatram, the Shuchi,the Athemukham,the Shararimukham, the Trikurchakam and the Atharmukham should be made use of in exudating or secreting. The Kutharika, the Vrihimukham,the Ara, the Vetasapatram and the Suchi (needle) should be used in puncturing. The Vadisha and the Danta-Shanku should be used in extracting solid bodies. The Eshani(probe) in probing the course or direction of the pus and the Suchi should be used in suturing. The Surgical instruments should be tempered with one of the three substances such as alkali,water and oil. The tempering should be done depending on the type of injury which also has been classified accordingly[5]. The handling of the instruments, suturing techniques, physicians code and conduct are given in detail. Each topic, like suturing techniques, in itself is so vast that we cannot compile it in a single article. So an attempt has been made to condense the topic and present it accordingly.

► The application of thatwa in dentistry

The world needs the Ancient Indian thoughts more than ever before but unfortunately Vedic Sanskrit is tough for the readers. A simplified method can be applied to ignite the fine thinking which will be useful in Dental and Medical fields. This is the THATWA method used by the Vedic Gurus and Physicians. Thathwa comes from "Thath" meaning 'that' (the seen Divine manifestation of this universe and beyond, the unseen divinity), "Thow" meaning "I am", signifying the Divine Self1. By means of positive comparison to unite rather than divide, Thatwa compares the elemental principle that holds the retention in dental restorations and retention of a child by his mother and again going universal to the love of mother earth who holds us by the name called gravity. Dental Thatwa is a different topic on its own that combines the whole of Dentistry in a nutshell using the cardinal principles of, a) Preservation of remaining structures b) Retention c) Resistance d) Stability e) Support and f) Esthetics. The prosthetic and restorative aspects of this combination will form the first part of the topic and will be discussed separately. The elemental principle or Thatwa never undergoes any change is the only way to unite all worldly concepts.

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CASE REPORT

Merits of CBCT in identification of occult fracture of the maxillofacial region

* Tatu Joy E., **Shashi Kiran M, ***Kartheesan T.

Abstract

This case presentation is to showcase the prime role of CBCT in imaging hitherto unidentified facial bone fractures caused by unconventional traumatic incidence. Diagnostic 2D imaging is limited by the fact that three dimensional anatomy of the area imaged, being compressed into two dimensional visuals. These problems are overcome by the more recent cone beam innovations in CT technology. However the limitations of the panoramic image renders this as a new potential application of cone beam CT.

Keywords: Zygomatic fracture, cone beam computed tomography, Imaging

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Introduction

Among different countries and socio-economic levels, the causes for maxillofacial fracture may vary and include mainly traffic accidents, domestic accidents, falls, sports injuries,domestic violence, work related injuries and assault. Maxillofacial trauma accounts for more than 60% of traumatic injuries.[1,2] Young men in the age group of 16 to 30 years are more affected twice than women in the same age group. Maxillofacial injuries range from isolated fracture involving small number of bony structures to complex facial injuries extending over the entire facial skeleton. Tripod fracture of the zygomatic complex has been reported as second most common fracture of maxillofacial trauma.[3]

Diagnosis and treatment of facial fractures requires a multidisciplinary approach that involves both clinical examination and imaging, if necessary with multiplanar imaging procedures. Diagnostic imaging plays a critical role in terms of obtaining information for initial diagnosis and treatment. Cone beam computed tomographic [CBCT] technology has recently been improved to offer access to cross sectional imaging that is faster and easier than hospital based practices.[4] CBCT was developed in the 1990s and was introduced in 1998 for maxillofacial imaging. This technique is apt for imaging hard tissues and for dental applications.[5] The following case reports an undisplaced zygomatic complex fracture diagnosed using CBCT.

Case report

A 23 year old female patient sustained a traumatic injury to the left midfacial region when she collided with a wall which was plastered with granite stones on her first attempt at bike riding. She reported immediately to hospital services after the accident with the complaints of pain and numbness on left side of the face. Suturing was done for lacerations and 2D PA skull was taken that was non-contributory.

After a month, she came to the department of oral medicine and radiology with complaints of pain, numbness and loss of sensation over the left incisor and canine gingival area and left half of her upper lip. Extra oral clinical examination showed facial scarring, pain and irregularity in left lower orbital margin and hypoesthesia of left infra orbital sensory area. No ecchymosis and diplopia were detected.

Intraoral examination found no hematoma, mucosal lacerations, occlusal disharmony and there was no pain on inspection, percussion, or palpation. A radiographic examination was performed with panoramic radiography (Fig. 1) which revealed a suspect set of radiolucent lines in the left zygomatic region, but further characterization was not possible, to alleviate doubts a CBCT evaluation was performed. The CBCT confirmed a TRIPOD fracture of left zygomatic buttress with extension into the facial plate of maxillary sinus without displacement and extending to the infra orbital region to form a step defect. (Figs 2 & 3) Maxillofacial trauma unit opined that in the particular case no intervention was needed. A wait and watch policy to see if the neuropraxia settled/ aggravated was advised and the patient was informed about the importance of follow up.

Discussion

Facial fractures may occur in isolation or accompanied by tissue injuries. Massive swelling may conceal deformities resulting from the fracture; however, without adequate, appropriate treatment, serious functional, and esthetical problems can emerge.[6] Boeddinghaus and whyte noted that while standard 2D radiographs may help in preliminary examination, diagnosis of an occult fracture may require tomographic imaging techniques, such as CBCT, that can provide excellent imaging of bony

* Prof, and HOD, ** Asso. Professor, *** P.G. Student, Dept of Oral Medicine and Radiology, Sree Mookambika Institute of Dental Sciences, Kulasekharam • Corresponding Author: Dr. Kartheesan T. E-mail: kartheesanomr@gmail.com

structures.[7] In line with this assertion, the occult fracture diagnosed by CBCT in the present study could not be well appreciated by panoramic radiography. CBCT seems to be a good complimentary for panoramic radiography in trauma cases. In the present case, CBCT was used to confirm a suspected facial fracture that occur in accidental trauma case.

Shintaku et al noted that while plain radiography requires less ionizing radiation than CT and CBCT, it is capable of representing only limited data. When further information is needed, as in the case reported here, CBCT would be the suitable choice in diagnosis, treatment planning and postoperative examination.[3] Using CBCT, it was decided that the present case could be managed with careful follow up, and the surgical treatment was not required. On contrary, it should be considered tha CBCT should not be used as a single imaging modality in poly trauma cases. A study by schulze comparing diagnostic applications of CT, CBCT, and MRI in the maxillofacial region reported CBCT to offer geomatrical accuracy.[5] Hassan and Jacobs reported that in comparison with 2D technologies, 3D technologies provide superior accuracy in imaging anatomical and pathological formations in dentomaxillofacial region.[8]

CBCT is a fast and simple procedure that can be performed routinely in the dentomaxillofacial department of our faculty. However, CBCT imaging is not appropriate in polytrauma cases with multiple fractures, walking or mental disabilities in which the patient needs tobe in supine position. Heiland et al stated that the use of CBCT for preoperative, intraoperative, and postoperative imaging can decrease radiation doses in cases of zygomaticomaxillary complex fractures, while CT crucial in cases where there are neurological symptoms or severe injuries.[4] Schulze et al reported CBCT to be a reasonably good alternative to CT for facial skeleton examination, offering high imaging accuracy with reduced radiation exposure.[9]

Ahmad et al and Morimoto et al stressed that while CBCT may be a crucial diagnostic tool in maxillofacial surgery, its capabilities and limitations need to be well understood; for instance, CBCT may be used successfully for topographical bone imaging, but it may not be sufficient for soft-tissue imaging or evaluation of bone height.[4] Also, CBCT has a limited field of view [FOV]. Shahbazian and Jacobs evaluated maxillary sinusitis cases of odontogenic provenance using 2D and 3D imaging procedures and found CBCT to offer more advantages thanks to its high-contrast resolution and lack of superpositions.[10]

Conclusion

In conclusion, we would like to state that although 2D imaging suffices for the majority applications of the orofacial region, the third dimension has increased the repertoire of the maxillofacial radiologist in the diagnosis of occult fractures of the facial skeleton. The CBCT with the low dose gives desirous results as good as the erstwhile CT.

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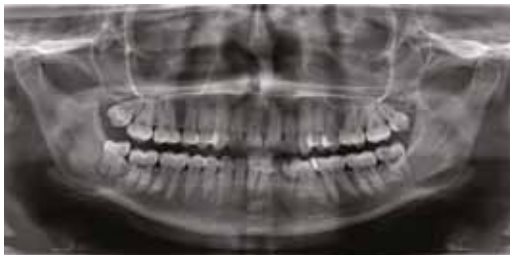

Fig 1 Panoramic view of the patient shows fracture lines discernible by an oral radiologist, however lack characterization.

Fig 2 CBCT reconstructed panoramic view of the patientshows evident fracture lines.

Fig 3 CBCT 3D view of the patient shows clear evidence of the undisplaced fracture

Dental implications in diabetic mellitus

*Kavitha, **Jayanthi P., *** Midhulaj

Abstract

Diabetes is one of the most challenging health problems faced by many developing and industrialized countries. The prevalence of diabetes mellitus in India is increasing steadily. A number of oral conditions have been associated with diabetes especially in patients with high glycemic index. Most of the patients are unaware of the oral health complications of this disease. This review article provides relevant information regarding the precautions to be taken before, during and after dental treatment in patients with diabetes. The article emphasizes active role of dental practitioners in the diagnosis and treatment of oral conditions associated with diabetes mellitus so as to prevent the risk of long term complications.

Keywords: Diabetes, oral, complications

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► Introduction:

Diabetes mellitus is clinically and genetically heterogeneous group of metabolic disease characterized by high blood glucose level. Diabetes is one of the most common non communicable diseases globally and is one of the most challenging and major health problems faced by many developing and industrialized countries. Epidemiological studies have shown that in India approximately 62 million people are diabetic, with another 30 million in the pre diabetic group.[1,2]

A number of oral conditions have been associated with diabetes mellitus particularly in patients with poor disease control. Most of the patients are unaware of the oral health complications of this disease. Hence, the dental professionals form a crucial part of the health care team to be aware of the medical and dental management considerations for the patients with diabetes mellitus.[3]

► Classification:

Four major types of diabetes mellitus have been defined by the National Diabetic Data Group (NDDG) and the World Health Organization (WHO) as follows [4,5]

- Insulin dependent Diabetes Mellitus (IDDM)
- Non Insulin dependent Diabetes Mellitus (NIDDM)
- Gestational Diabetes Mellitus (GDM)
- Diabetes secondary to other conditions

Insulin Dependent Diabetes mellitus:

This disease is characterized by autoimmune destruction of pancreatic β cells, usually leading to absolute insulin deficiency. There are two distinct sub classes of insulin dependent diabetes mellitus: (a) the idiopathic form, where the cause of β cell destruction is not known and (b) the immune mediated form that may be triggered by environmental events such as viral infection and may be associated with other autoimmune disorders such as Hashimoto's thyroiditis, Addison's disease or pernicious anaemia. People with insulin dependent diabetes mellitus are highly susceptible to diabetic ketoacidosis.[4]

Non Insulin dependent Diabetes mellitus:

This is the most common type comprising of 90-95% of diabetes mellitus cases. These patients have normal, increased or decreased insulin level due to abnormal beta cell function. The exact etiology is not known, but the predisposing factors include genetic predilection, advancing age, obesity and lack of exercise.[4]

► Gestational Diabetes mellitus:

This includes development of insulin dependent diabetes mellitus or discovery of undiagnosed asymptomatic non insulin dependent diabetic mellitus during pregnancy. In majority of the cases glucose regulation will return to normal after delivery. However, about 30-40% of women may develop type II diabetic mellitus within 10 years.[4]

Other Specific type of diabetes mellitus:

These are uncommon and constitute 1-2% of diabetes mellitus cases. The causes include defects of β cell function and insulin action, endocrinopathies and pancreatic dysfunctions induced by drugs, chemicals or infections.

*Postgraduate student, **Professor, Dept. of Oral & Maxillofacial Pathology, ***Senior Lecturer, Dept. of Periodontics, Azeezia College of Dental Science & Research, Kollam, Kerala • Corresponding Author: Dr. Jayanthi P., Email: drjayanthip@gmail.com

Certain genetic syndromes may be associated with diabetes mellitus including Turner's syndrome, Down's syndrome, Wolfram's syndrome and Klinefelter's syndrome. Drugs like glucocorticoids, thiazides and interferon α can impair insulin secretion, while viruses like coxsackie virus have been associated with β cell destruction[4].

Clinical presentation:

Patients with undiagnosed diabetes mellitus may present with one or more signs and symptoms of hyperglycaemia that include polyuria, polydipsia and polyphagia. Patients may complain of unexplained weight loss, fatigue, poor wound healing, blurred vision, gingival bleeding and high susceptibility to infection.[5]

► Complications of diabetes:

The high morbidity and mortality rates associated with diabetes are due to increased incidence of both microvascular and macrovascular complications that include.[5,6]

Macrovascular Complications	Microvascular Complications
Periodontal disease	Dyslipidemias
Neuropathy	Angina and Myocardial infarction
Retinopathy	Peripheral vascular diseases
Nephropathy	Hypertension

Diagnostic criteria for diabetes:

The diagnostic criteria for diabetes mellitus were established by the NDDG and WHO in 1979-80. In 2013, the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus had revised the criteria and any one of the following is considered diagnostic of diabetes.[7]

A. Presence of the classic symptoms of diabetes such as polyuria, polydipsia, ketonuria and rapid weight loss, together with gross and unequivocal elevation of plasma glucose (postprandial or random plasma glucose concentration ≥200 mg/dl)

{OR}

B. Elevated fasting glucose concentration on more than one occasion (Venous plasma ≥126mg/dl)

{OR}

C. Fasting glucose concentration less than that which is diagnostic of diabetes (B above) but sustained elevated glucose concentration during the Oral Glucose Tolerance Test (Venous plasma ≥ 200mg/dl)

Diabetes mellitus and oral cavity:

A number of oral conditions have been associated with diabetes mellitus, particularly in patients with poor glycemic control.

1. Fungal infections:

Diabetic patients have increased predisposition to oral candidiasis in the form of median rhomboid glossitis, denture stomatitis and angular chelitis. Mucormycosis is a rare but serious fungal infection that may occur in patients with uncontrolled diabetes mellitus. Oral involvement usually appears as palatal ulceration or necrosis. Treatment of oral fungal infection in the patient with diabetes mellitus is similar to the standard regimen except that topical antifungal medication should be sugar free. If the topical antifungal is ineffective after 7-10 days, systemic antifungal agents may be required.[8]

2. Recurrent herpes simplex virus infection:

Recurrent herpes simplex infection may occur in diabetic patients presenting as herpetic labialis or stomatitis. Treatment of recurrent herpes simplex infection should be started initially in the prodromal stage to reduce the duration and symptoms of the lesions. Oral acyclovir, famicyclovir or valecyclovir can be used therapeutically or prophylactically.[8]

3. Periodontal disease:

Periodontal disease is one the most common oral manifestation of diabetes mellitus occurring in the form of tooth mobility and multiple periodontal abscesses. The presence of severe periodontal infection may increase the risk of microvascular and macrovascular diabetic complications. As prevention plays a primary role in diabetic patients, they need more frequent plaque control and scaling than non diabetic patients.[3,8]

4. Salivary gland dysfunction:

Patients with poorly controlled diabetes have been found to have lower stimulated salivary flow rates than with well controlled diabetes mellitus and non diabetic subjects. Frequent sipping of water or use of sugarless gums may alleviate the dryness.[9]

5. Oral burning and taste disturbances:

Burning sensation of the mouth in diabetic patients may be due to peripheral neuropathy, xerostomia or candidiasis. Good glycemic control may alleviate the burning sensation. Clonazepam may be beneficial in some patients with complaints of burning sensation. Preventive measures include maintenance of adequate hydration, restriction of caffeine and alcohol.[8,10]

6. Dental caries:

Higher incidence of dental caries in diabetic patients have been associated with xerostomia, increased gingival crevicular fluid levels and increase in dental plaque accumulation.[8]

► Dental management:

Before treatment:

The following factors have to be taken into consideration before performing dental treatment in diabetic patients.

- Morning appointments: In general, morning appointments are advisable for diabetic patients seeking dental treatment as endogenous cortisol levels are higher at this time. For patients receiving insulin therapy, appointments should be scheduled so that they do not coincide with peak of insulin activity since that is the period of maximal risk of developing hypoglycaemia.[8,11]

- Medical history: Taking a good medical history and assessing glycemic control at the initial appointments are very important aspects of dental management. Details regarding recent blood glucose level and frequency of hypoglycaemic episodes have to be recorded. The dosage of anti diabetic medications, times of administration and other concomitantly prescribed medications that may alter the glycemic level should be determined. Patients undergoing major surgical procedures may require adjustments of insulin dosage or oral anti diabetic drug regimen. Any complication of diabetes mellitus, such as, cardiovascular or renal disease will have their own effect on dental treatment planning. Therefore, if necessary the dentist should consult with patient's physician.[10,11]

- Diet: It is important for the dental surgeon to ensure that the patient has eaten normally and taken medication as normal. For certain procedures the dentist may request that the patient alter his/her normal diet before the procedure. In such cases the medication dosage may be modified in consultation with the patient's physician.[11]

- Blood glucose monitoring: The patient's blood glucose can be assessed using commercially available electronic blood glucose monitors. Patients with low plasma glucose level (<70mg/dl) should be given an oral carbohydrate before dental treatment to minimize the risk of hypoglycaemia. If blood glucose level is significantly elevated, the patient should be referred to the physician before performing elective dental procedures.[10,11,]

During treatment:

1. Hypoglycemia:

The most common complication of diabetic patients that can occur in the dental office is a hypoglycaemic episode. The maximum risk of developing hypoglycaemia is during the peak insulin activity. The various causes of hypoglycaemia include missed or delayed meal, poorly designed insulin regime, alcohol, and gastroparesis due to autonomic neuropathy or unrecognized endocrine disorders like Addison's disease.[11]

The initial signs and symptoms of hypoglycemia include mood changes, decreased spontainity, hunger and weakness. These may be followed by sweating, incoherence and tachycardia. If untreated possible consequences include unconsciousness, hypotension, hypothermia, seizures, coma and even death. If the clinician suspects that the patient is experiencing a hypoglycaemic episode, he or she should terminate dental appointments and immediately administer 15gm of a fast acting oral carbohydrate such as glucose tablets, gel, sugar or candy. If hypoglycaemic episode is severe and the patient is unable to swallow, 1mg of glucagon or 25-30 ml of 50% dextrose solution should be administered intravenously to raise the blood glucose values.[8,10,11]

Flow Chart Depicting management of Hypogycemia in Unconscious Diabetic Patients [12]

Recognize Problems (lack of response to sensory stimulation)

↓

Discontinue all dental treatment and activate office emergency team

↓

Place the patient in supine position with feet elevated

↓

Assess Circulation → Airway → Breathing and perform basic support as needed

↓

Provide definite management

- Summon emergency medical service
- Administer carbohydrates (IV 50% dextrose solution/1mg glucogon via IV or IM route/ Rectal honey or syrup)
- Monitor vital signs for every 5 minutes
- Administer Oxygen if required

↓

Allow the patient to recover and discharge per medical recommendations

2. Hyperglycemia:

The risk of hyperglycaemic crisis is much lower than that of a hypoglycaemic crisis in a dental practice setting. The symptoms of hyperglycemia include thirst or dry mouth, polyuria, blurring of vision, headache, nausea, mood change, irritability and fatigue.

Flow Chart Depicting management of Hypergycemia in Unconscious Diabetic Patients[12]

Recognize the problem (lack of response to sensory stimulation)

↓

Discontinue dental treatment and activate office emergency team

↓

Position the patient in supine position with feet elevated

↓

Assess Circulation → Airway → Breathing and perform basic life support as needed

↓

Provide definite management as needed

- Summon emergency medical service
- iv 5% dextrose and water or of normal saline
- Administer Oxygen if required

After treatment:

Patients with poorly controlled diabetes mellitus are at greater risk of developing infection and may demonstrate delayed wound healing. Good diabetic control and antibiotic coverage may be necessary for the patient with overt overall infection and for those undergoing extensive procedures. Aspirin and aspirin containing compounds should be avoided. Patient education about smoking cessation and maintaining blood glucose levels are important. Studies have shown that smoking increases the risk of periodontal disease several fold in diabetic patients. Therefore, patient counselling on tobacco cessation should be a part of management of diabetes mellitus.[6,11]

► Conclusion:

There are many medical and dental management issues that a dentist should consider when treating patients with diabetes mellitus. By taking an active role in the diagnosis and treatment of oral conditions associated with diabetes mellitus, the dental practitioners may contribute to the maintenance of optimum health in patients with this disease. Most of the patients are unaware of the oral health complications of diabetes mellitus. It is important for the dentist to educate the patients about the oral implications of diabetes mellitus and need for proper maintenance.

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A maxillary central incisor unveiled

*Sunil Thomas Philip, **Anshad Abdullah, ***Nishad Abdul, ****Teena Faizal

Abstract

A missing or an unerupted anterior tooth during mixed dentition stage is a great concern esthetically and functionally for the child and the parent. The absence of teeth can cause psychological problem in the child and the child may become shy and have low self esteem. It is necessary to intervene and manage this problem as early as possible. An unerupted tooth can be managed by fixed and removable appliance. Removable appliance has many advantages over fixed appliance as they promote better oral hygiene,less chair side time,more esthetic and forced eruption can be started immediately after the appliance is placed. This article discusses a technique to facilitate eruption of a maxillary central incisor with a removable appliance.

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► Introduction

The absence of anterior tooth may cause psychologic and functional problem as it can affect facial esthetics and important functions like phonetics,lip support and mastication. The incidence of impaction of maxillary central incisors is in the range of 0.06% to 0.2%[1]. Impaction is partial or total lackof eruption of a tooth well beyond normal age of eruption[2]. Various factors has been associated with an unerupted tooth like retained or early loss of deciduous tooth, ankylosis, odontoma and dental trauma[3]. The intervention time for an unerupted tooth is very crucial because younger the age of the child, the faster the tooth erupts[4]. Lin suggested three methods for treating impacted incisors. a)extraction of impacted tooth and placement of prosthetic appliance or implant after growth stops b)extraction of impacted tooth and closure of space,replacing central incisor with a lateral ones c) surgical exposure followed by orthodontic traction[5]. Becker reported that to facilitate eruption the best approach is conservative management by orthodontic opening of space[6].

► Case Report:

A 11 year old boy reported to department of paedodontics, NICDS, Neyyatinkara with a chief complaint of a missing upper anterior tooth. The child was physically healthy and had no history of dental trauma. On clinical examination diagnosed with high freenal attachment and a missing maxillary left central incisor (Fig 1). Radiograph showed a vertically impacted 21 (Fig 2). Freenectomy was done and patient was recalled after a week for suture removal and to check for healing of the site.

Clinical management consisted of surgical orthodontic approach for extrusion of 21 by a removable appliance. Primary impressions of upper and lower arches were made with alginate and a working cast was made for fabrication of the appliance. In the fabricated appliance we placed a "J" hook approximating the palatal rugae area for vertically directing the force and a labial bow and clasps for retention. Osteotomy was performed to expose an area for bonding the distoincisal margin in this case. A lingual button was bonded to the tooth with composite. An OPG was taken to confirm this. The rationale behind this was to avoid iantrogenic surgical trauma and to plan for reattachment of the button to a more desirable position once the tooth erupted into the oral cavity.

Once healing of surgical site was ensured a removable appliance was placed with elastics connecting the lingual button and "J"hook made with 0.8mm stainless steel wire of the appliance (Fig 3). Instructions were given to change elastics every day by the patient himself. 20-25gms of force was delivered for extrusion of the tooth which was measured using a dontrix gauge. Mouthwash and candid paint was prescribedto maintain properoral hygiene and to prevent risk of oral thrush. Patient was recalled after 3 months. The tooth was erupting labially into the oral cavity. After 6 months of forced eruption the button was placed at a new position and patient was advised to change elastics every two days. Patient was advised to wear the appliance 24 hours a day and to remove it only during meals.

After 8 months of eruption and the crowns of the teeth was sufficiently erupted, the space available in the arch was not adequate to accommodate the impacted incisor in the arch. Hence gaining of space and alignment of the teeth was done by fixed orthodontic therapy. The treatment in this phase was completed in 3 months. A post treatment OPG was taken (Fig 4). A retention appliance was fabricated for long term retention and to prevent relapse. The

* Professor and HOD, ** Senior Lecturer, Department of Paedodontics and Preventive Dentistry; ***Reader, Department of Orthodontics; ****Lecturer, Department of Paedodontics and Preventive Dentistry; Noorul Islam College of Dental Sciences, Aralumoodu, Neyyatinkara, Trivandrum, Kerala, India. • Corresponding Author: Dr Sunil Thomas Philip, Email: rubysunildr@rediffmail.com.

patient was satisfied with post treatment results (Fig 5)as the patient had a low smile line and the marginal gingiva around the teeth was not visible.

Discussion

Impactionof an anterior tooth can be challenging for a general dentist ora paedodontist. There are more chances that a tooth will not erupt without orthodontic intervention if there exists a delay in eruption in relation to dental and chronologic age[7]. To avoid problems in aligning the tooth in the arch orthodontic and surgical intervention should not be delayed. Batra et al suggested that if the patient reports with any variation in the chronologic pattern of eruption radiographs are to be taken periodically[8]. If the tooth is deeply impacted and covered by bone,small osteotomymay be needed to expose enough area of tooth for bonding an attachment. Minimal exposure of tooth surface only has to be done to bond an attachment[9]. The initial attachment can be changed to a new position once tooth erupts into the oral cavity. When using forced orthodontic eruption by removable appliance maintain optimum orthodontic force so that tooth eruption is not more than 1mm a month so as to avoid pain and root resorbtion and to maintain health of periodontal ligament.[10]

Thefactors that limitthe results when using a removable appliance is not changing the rubberband satisfactorilyand patientuncooperation by not wearing the appliance which can be managed by guidance and reinforcement. In this case radiograph of the tooth taken after 2 years showed no signs of root resorbtion. Slow,light,continuous extrusiveforcesthatis not exceeding 30 gms probably produced a favourable biologic response. Pulp vitality test done after 2 years showed that the tooth was asymptomatic and the tooth remained vital. In the absence of periodontal and periapical lesions and pain symptoms endodontic treatment is not necessary. But long term follow up is needed to assess the pulpal status of the tooth. In case of deep impactions due to long distance of tooth migration and vascular alteration in pulp cells metabolism there could be increased deposition of reparative dentine[11].

In this case open window eruption techniqueof surgical removal of circular section of overlying mucosa and thin bony covering was done. The outcome would have been improved if a closed eruption technique where the raised flap is replaced and sutured to its original position after placement of traction devices was performed producing an overall better positioning of gingival contour in relation to 21 and esthetics. Hence closed eruption technique ispreferred if the tooth is impacted in the middle of alveolus or high vestibule where eruption can be facilitated in theirnatural eruptive path through mid crestal area.

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Fig. 1 Pre treatment view

Fig. 2 Pre treatment OPG

Fig. 3 Appliance with elastics stretched on J hook and lingual button

Fig. 4 post treatment OPG

Fig. 5 post treatment view

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A simplified technique for esthetic correction of implant with an unfavourable inclination using a metallic screw post

* Nimisha B Abraham, ** Kala S., ** Prasanth V., ***K. Harshakumar

Abstract

Esthetics, phonetics, and function of the implant supported fixed prosthesis may be compromised because of unfavourable implant placement. Numerous methods have been reported to compensate for the misalignment of implants, but most of these approaches are technically complex. This article illustrates the use of a base metal screw post to be used as the abutment to compensate for the unfavourable labial inclination of implantswhich is simple, economic and time saving.

Keywords: dental implants, unfavourable inclination, metallic screw post

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Introduction

Dental implantation is a reliable and predictable treatment for partially and completely edentulous patients and is gaining tremendous popularity. The proper diagnosis and treatment planning, appropriate placement, adequate prosthetic design, and proper maintenance, can account for success rate of 97% to 99% of dental implants.[1,2] Inspite of all these proper diagnosis and planning, it may result in unfavourable implant inclination which tends to compromise aesthetics, phonetics,and function of the implant – supported fixed prosthesis. Several methods[3] have been reported to compensate for misaligned implants; however, most of these techniques are complicated and expensive. This article narrates the use of a base metal screw post for eliminating the difficulties persisting with misaligned implants.

Case report

An 18 year old patient reported to the Department of Prosthodontics, Government Dental College, Thiruvananthapuram with missing 21. An implant was placed on the 21 region. During osteotomy, a defect was noticed on the labial cortical bone which precluded the placement of implant in the ideal position. This accounted for the placement of implant with a considerable amount of labial inclination. Placement of new implant was not feasible due to inadequate bone quality and also due to the unwillingness of the patient to undergo another surgical procedure. Even the 25 degree angulated abutment could not solve the problem (Fig. 1&2). Hence it was decided to proceed the prosthetic phase using a base metal screw post instead of a conventional abutment.

Technique

1. Removal of gingival former was followed by copious irrigation of the well of the implant

2. The depth of the well of the implant was measured with Williams periodontal probe and it was used as a guide in the selection of screw post of appropriate length (Fig. 3 &4).

3. The largest diameter (Size No.6 - 1.80 mm) screw post (Gold plated screw post-Nordin Dental) was placed in the space and it was adjusted so that it binds near to the apex (Fig. 5 & 6).

4. Dual cure composite was injected into the implant post space with intraoral tip followed by use of lentulospiral to minimize voids.

5. The screw was then fastened to the predetermined depth and light cured (Fig. 7).

6. After curing of the composite, the core portion was built up with composite material (Fig. 8).

7. Impressions were made using putty wash technique and cast was poured.

8. The final restoration was then luted using glass ionomer cement (Fig. 9).

Discussion

Despite careful treatment planning, unfavourable inclination of implants is not uncommon. Numerous methods have been reported to compensate for this unfavourable inclination, but most of these approaches are technically complex and expensive.[4] Managing the misaligned implants by computer aided designing/computer aided manufacturing

* Post Graduate Student, ** Assistant Professor, ***Professor & Head, Department of Prosthodontics, Govt. Dental College, Thiruvananthapuram • Corresponding Author: Dr. Nimisha B. Abraham, Email : newnimi@gmail.com

bar supported overdenture has been reported.[5] Tackling the situation with removable prosthesis is also reported. Management of misaligned implants for a maxillary overdenture with spherical abutments is also reported in the literature. Another alternative is to maintain the implant as "sleeping" implant, and restoring the edentulous site with fixed partial denture using adjacent teeth as abutments. Not many cases are reported about misaligned single tooth implants. Due to iatrogenic errors or clinical shortcomings as happened in the case reported, a compromised treatment plan was executed in order to salvage the implant. The treatment explained in the present article is an attempt to correct the misalignment, considering the time constraints and the need for a second time surgery. Moreover, compromised bone width may further contraindicate the placement of another implant. The effect of galvanic current (base metal post and titanium) is expected to be managed by the luting cement acting as an insulating medium.[6] Instead of having implants being rendered useless, a screw post and core supported prosthesis can salvage them. Follow up was done for 3 months, and the patient is quite satisfied with the esthetic and functional outcome.

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Fig. 1 25 degree angulated abutment showing unfavourable inclination- Labial view

Fig. 2 25 degree angulated abutment showing unfavourable inclination- Lateral view

Fig. 3 Depth measurement of the well of implant using Williams periodontal probe

Fig. 4 Measurement of screw post length

Fig. 5 Metallic screw post prepared to the corresponding post space depth

Fig. 6 Metallic screw post oriented in the post space showing a favourable labial inclination

Fig. 7 Screw post cemented with dual cure composite

Fig. 8 Core built-up using composite material

Fig. 9 Labial view of the prosthesis corrected for unfavourable inclination

Fig. 2 Pre treatment 0

Recurrent herpes labialis- diagnosis and management for the dental practitioner

* Lakshmi P.S., ** Tatu Joy E., *** Shashi Kiran M., **** Eugenia Sherubin J.

Abstract

It is believed that more than 50% of the world's population is infected with Herpes. As dental practitioners, we are often confronted with patients who may have been affected with orofacial lesions of herpes. It may have varied anatomical locations, misleading clinical presentations and may cause a diagnostic dilemma. Awareness of the clinical presentation and eliciting an accurate history will ease the diagnostic process, provide better patient care and prevent spread of the disease. We present a case of Herpes Labialis with the agenda of highlighting its multifaceted presentation along with the various options to manage the same effectively in day to day dental practice.

Keywords: Herpes labialis, Herpes Simplex virus, Prodromal symptoms.

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► Introduction:

World over, more than 60% of the population is infected by some strain of Herpes viridae family.[1] HSV-1 and HSV-2 are members of the α herpes virus family. The primary infection remains for life latent in the sensory nerve ganglion. Recurrent herpes labialis affects 16% -38% of the world's population. Recurrent herpes labialis may be initiated by several factors such as stress, fever, injury, exposure to cold and sunlight and iatrogenic trauma.[2] It can complicate routine dental procedures and surgeries of the oral cavity.[3,4,5,6,7] Recurrent herpes labialis is painful, prolonged and can cause significant morbidity.[8,9] In immunocompromised individuals the course of the disease may be protracted and is more severe involving extensive areas.[8,10] The aim of antiretroviral therapy is to reduce the course of the disease and expedite healing by blocking viral replication. Prompt initiation of antiviral treatment as early as possible is imperative for maximum therapeutic benefit.[11] We report a case of recurrent herpes labialis with an attempt to review its clinical presentation, demystify the diagnostic process and review the various management options available to the clinical practitioner.

► Case report:

A 54 year old female patient reported to the department of Oral medicine and Radiology with a chief complaint of decayed tooth on upper right back tooth region since 6 months. Medical history revealed her to be a diabetic on medication since 10 years. Routine extraoral examination revealed a cluster of multiple vesicles on the right side of the upper and lower lip. (Fig.1). On eliciting the history further, she gave a history of recurring lesions since six years with the last episode occurring six months ago. She also gave a history of spontaneous remission of the lesion without any treatment. Histopathological examination of the vesicular contents were carried out which revealed presence of chromatin condensation, ballooning of epithelium in the background of inflammatory cells and extravasated erythrocytes.(Fig.2) Correlating the clinical presentation and histopathological findings, we arrived at a final diagnosis of recurrent Herpes Labialis. The patient was prescribed topical acyclovir 5% 5 times a day for 4 days. Follow-up revealed uneventful healing.

► Discussion:

The world over between 60-95% of people are infected by some strain of the herpes family.1Herpes viruses have the unique property to invade and multiply in the nervous system of the host and an innate ability to establish a site of latent infection.[12] Herpes simplex viruses type 1 and 2 cause infections manifesting as dermatologic,immunologic and neurologic disorders.[13] Herpes simplex virus type 1 usually manifests as a mild self limiting painful vesiculobullous eruption around the mouth. Primary infection generally occurs during childhood following which the virus remains latent in the trigeminal ganglion. Reactivation of the virus with recurrent clinical manifestation may be triggered by various factors such as exposure to sunlight, stress and fatigue, hormonal fluctuations and fever.[14] Infection with herpes simplex virus classically goes

* Postgraduate student, ** Professor and HOD, ***Associate Professor, ****Associate Professor, Department of Oral Medicine and Radiology, Sree Mookambika Institute of Dental Sciences, Kulasekharam, Kanyakumari District, Tamilnadu, India • Corresponding author: Dr. Lakshmi P.S., E-mail: lakshmips251985@gmail.com

through an incubation period of 1-26 days.[15] Infection with Herpes simplex virus may be primary or secondary. Primary infection is herpes simplex virus infection for the first time in a Herpes Simplex Virus seronegative patient where as secondary or recurrent infection are those that occur in a patient already infected with Herpes Simplex Virus. The most common site for primary infection by Herpes Simplex Virus-1 is the oropharynx. It commonly occurs in the younger age group and typically manifests as fever, irritability, tender submandibular lymphadenopathy and vesiculobullous lesions involving the palate, gingiva, tongue, lip and perioral area. Acute erythema of the gingiva is a discerning feature.[16] Reactivation of Herpes simplex virus manifesting as recurrent Herpes labialis is seen in 20-40% of adults.[17]

Prodromal symptoms such as burning,itching or tingling often precedes the clinical manifestation by several hours. The outer edge of the vermillion border is the common site of recurrent infection. The lesion usually manifests as vesicles and evolve in to pustules or ulcers in a few days and generally heal within 10 days.[16] Manipulation of the trigeminal nerve root or dental procedures have been known to cause reactivation of Herpes Simplex Virus.[3] In patients with Recurrent Herpes Labialis pain, discomfort and morbidity can be reduced by several therapeutic options to hasten healing and reduce disease progression. Patient initiated administration of the drug at the initial sign of prodromal symptoms is of paramount importance. This initial therapy includes topical agents such as acyclovir, docosanol, fenciclovir and systemic drugs such as acyclovir, valacylovir and fenciclovir. Topical acyclovir 5% cream/ointment has been shown to reduce the lesion healing time and reduce the duration of pain.[18] Prophylactic therapy for photoinitialised Recurrent Herpes Labialis includes sunscreen alone with SPF of 15 or higher.[19] Oral acyclovir in the dosage of 200-400mg 5 times a day has been proven to reduce the healing time significantly. Newer combination therapies such as acyclovir 5% and hydrocortisone 1% cream have been shown to reduce healing time. In immunocompetent patients with frequent Recurrent Herpes Labialis which causes significant compromise in quality of life, daily suppressive therapy with valacyclovir may be indicated.[9]

Conclusion:

Recurrent Herpes Labialis is a selflimiting frequently occurring perioral lesion. The manifestations are unique that they can be diagnosed even clinically though confirmation is through histopathology and serology. Acyclovir is still considered to be the first line therapy with increased potency. As dental practitioners often come across these lesions, simple management with topical or systemic acyclovir can improve the condition thereby improving the quality of life of the patients by reducing recurrence and pain.

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Fig. 1 Cluster of multiple vesicles on the right side of the upper and lower lip.

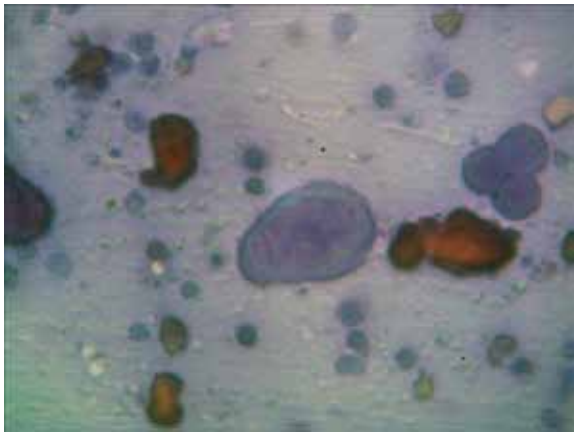

Fig. 2 Presence of chromatin condensation, ballooning of epithelium in the background of inflammatory cells and extravasated erythrocytes.

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Traumatic ulcer in neonates

*Kareena Kafeel, ** Restina Kafeel, ***Joseph Edward

Abstract

Tooth eruption follows a chronology corresponding to the date when tooth erupts into the oral cavity. These dates are subjected to small variations depending on hereditary, endocrine and environmental factors. At times there is a significant alteration in terms of onset and the first teeth maybe present at birth or arise during the first month of life. The expectation about the eruption of the first teeth are great and even greater when the teeth appear early in the oral cavity. The objective of the present overview is to present a review of the literature with important aspects about natal and neonatal teeth and the complications caused such as chronic ulcers and difficulty in feeding.

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► Introduction:

Child development from conception through the first years of life is marked by many stages. Eruption of teeth or immediately after birth is a relatively rare phenomenon. These teeth are known as "natal teeth", if present at birth and if it erupts during the first thirty days of life it is called "neonatal teeth" (fig.1). Characteristic feature of a neonatal tooth is hypoplastic enamel and underdeveloped roots with resultant mobility. It is also classified as mature and immature natal tooth according to their degree of maturity. A mature natal tooth is the one that has normal development and a good prognosis while an immature natal and neonatal tooth suggests defective development with poor prognosis.[1] This prematurely erupted tooth has severe mobility/hypermobility as a result of underdeveloped root.

► Prevalence:

The frequency of natal or neonatal teeth is estimated at one case per 2000-3000 births with no sex predilection. However, a predilection for females was cited by some authors with Kates et al reporting a 66% proportion for females against 31% proportion for males[2].

► Etiology:

Most of the premature erupting teeth are mandibular central incisors belonging to the normal dentition and they have a normal shape. The root has not yet developed and the tooth is hence loosely attached to the gingival. According to Bodenhoff's study, 85% are mandibular canines and molars and only 11% maxillary canines and molars and only a small percentage are supernumerary teeth[3]. The presence of neonatal teeth is carried due to a disturbance of biological chronology whose etiology is still unknown. Certain possible factors include superficial position of the tooth germ, infection or malnutrition, endocrinopathies, hereditary transmission of a dominant autosomal gene, osteoblastic activity inside the germ are related to the remodelling phenomenon and hypovitaminosis, febrile states, trauma and syphilis. However certain studies suggest that neonatal teeth may be associated with some syndromes such as Hallermans Streeff syndrome, Ellis-Van Creveld syndrome, craniofacial dystosis, congenital pachyonychia and Sotos syndrome[4]. The current concept suggests that, the natal and neonatal teeth are basically due to a superficial position of the developing tooth germ, which instigates the tooth to erupt easily into the oral cavity. The tooth may not be located in an alveolus but slightly below the alveolar bone surface but above the tooth germ of the successive permanent tooth[5]. Many investigators have reported neonatal teeth as familial trait with a frequency ranging from 8 to 62% which reflects the hereditary factor.

► Case report:

A three month old baby reported to the Department of Dentistry at Bishop Benziger Hospital, Kollam, with chief complaint of a non-healingulcer (fig.2) on the tip of the tongue since one month. It was first noticed when the baby was repeatedly crying on feeding. The general condition of the child was satisfactory. Intraoral examination revealed a painful ulcer on the tip of the tongue which as approximately 0.75*0.5cm in size and was oval in shape. The floor of the ulcer had a yellowish hue due to necrotic tissue and the surrounding area was erythematous with a red halo. Another finding was two neonatal teeth on the anterior portion of the lower jaw. On the basis of clinical examination, diagnosis was made as a non-healing ulcer. The only possible treatment was surgical extraction of the two prenatal teeth as frequent contact of the teeth on the tongue was the cause of the ulcer. The child's mother was informed of the diagnosis, treatment

*UG Student, Azeezia Institute of Dental Science and Research; Meeyannoor, Kollam, ** Resident Dental Surgeon, Bishop Benziger Hospital, *** Consultant, Bishop Benziger Hospital, Kollam. • Corresponding Author: Kareena Kafeel
E-mail: kkr.kareena@gmail.com

planning and her consent was taken before start of procedure. Extraction of the mandibular anterior prenatal teeth (fig.3) was done under. The post operative condition of the patient was uneventful. The patient was then recalled after one week for review which showed gradual decrease in size of ulcer. There was slow regression of ulcer completely in 3 weeks' time (fig.4). Review after one month showed complete regression of the ulcer.

► Discussion:

A non healing ulcer onthe surface of the tongue can persist for a week to months or till the trauma is removed. Long standing ulcer poses a threat of developing into a squamous cell carcinoma. Hence further treatment should be based on the biopsy reports. A non healing ulcer can undergo self healing once the traumatic agent is removed and the ulcer heals without a scar[6]. But in case of children, if the ulcer does not show a sign of self-healing after the foci is removed, a biopsy should be done to rule out the chance of malignancy.

In neonatal teeth, a radiograph should be made to determine the amount of root development and the relationship of a prematurely erupted tooth to its adjacent teeth. Some suggested approaches are:

- In case of inflamed gingival tissue around the neonatal teeth, chlorhexidine gluconate gel can be applied 3 times a day[7].
- Selective grinding of the tooth is advisable in cases where the sharp incisal edge of the tooth causes laceration on the lingual surface of the tongue.
- Mostly these teeth are hypermobile because of under developed root which poses a threat of aspiration, where in the removal of the teeth is indicated[8].
- Soon after extraction, curettage of the socket is done in an attempt t remove any odontogenic cellular remnants which might be left in the extraction site. In case if the extracted area is not curetted properly, these remnants may develop a typical tooth like structure that requires additional treatment.
- Difficulty in breastfeeding is observed by the mother. If it is painful for the mother initially, the mother has to use a breast pump and bottling mile. The preferable approach is however to leave the tooth in place and to explain to the parents the desirability of maintaining this tooth in the mouth because of its importance in the growth[9]. The adjacent teeth would erupt within a short time and the prematurely erupted tooth will become stabilized as the other teeth in the arch erupt[10].
- Traumatic ulceration on the ventral surface of the tongue, frenum or lip is the most common complication of neonatal teeth. Ulceration of the sublingual area in infants was first described in 1857 Cardarelli. In 1881 and 1890 Riga and Fede described this lesion histologically and it has been known as "Riga Fede disease". But a more appropriate term is "neonatal sublingual traumatic ulceration[11]".

► Conclusion:

The treatment of neonatal teeth is different for individual patients based on their chief complaints and associated signs and symptoms. An ideal successful surgical extraction is predictable in cases where there is ulceration to the adjacent soft tissue or where there is ulceration to the adjacent soft tissue or where there is hypermobility of the prenatal tooth or the mother finds difficulty in feeding. A well tailored treatment plan should be followed for such conditions to attain the proper and desired result.

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Fig. 1 Neonatal Teeth

Fig. 2 Non Healing Ulcer at the tip of the tongue

Fig. 3 Extracted mandibular prenatal teeth

Fig. 4 Completely regressed ulcer after 1 month

A novel procedure for complete denture fabrication using piezography

* Kurien Varghese, ** Shamla Latheef, ** Roshni Abdul Vaheed

Abstract

In Prosthetic rehabilitation, especially geriatric Prosthodontics; numerous factors may influence the success of a complete denture prosthesis. Our routine clinical experience stands to prove that mandibular dentures are relatively less stable than their maxillary counterparts. Advancing life expectancy, age related reduction in adaptibility and progressive resorption of mandible further complicates the situation. This article discusses a case presentation showing step by step procedure for implementing Piezographic technique in the fabrication of compete denture for long standing edentulousness and relatively resorbed mandibular ridge.

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► Introduction:

One of the philosophies that was introduced to overcome the challenge of unstable denture in clinics was the theory of neutral zone which was based on neuromuscular control on the polished surface of denture and positioning the teeth in space where the oral musculature and the tongue forces were nullified by each other.[1] Piezography in complete denture fabrication is a technique used to record shapes by means of pressure, a method of recording patients denture space in relation to oral function as well as phonetics.[2] The term Piezography was coined by Klein in 1974 from the Greek term which denotes "a shape formed by pressure using speech".[3] A person swallows around 2,400 times per day[4] during which the opposing teeth contacts for less than a second[5] and hence it can be assumed that only less than 40 minutes of tooth to tooth contact occurs per day during function. As a person speaks much often than swallowing, we should incorporate phonetic method as well as swallowing method for the functional moulding in order to achieve a stable prosthesis.

In a piezographic technique the buccolingual center of occlusal table is generally located to the buccal of the residual alveolar ridge.[6] It is reported by Morikawa et al (1983) that the centerline of the neutral zone was situated approximately 1.9 mm to the buccal side of the alveolar crest and the distance from the centerline depended on the span of edentulousness.[7]

► Case report:

An elderly male patient aged 67, reported to the Department of Prosthodontics, Azeezia Dental College with the chief complaint of difficulty in chewing. Medical history revealed that the patient was under medication for diabetes and hypertension since the past one year and a dental history of long standing edentulousness since five years. Intraoral examination revealed a resorbed mandibular ridge with incompetent lip, relative increase in the size of tongue and loss of muscle tonicity. So it was decided to implement piezographic technique for this patient for better function of the mandibular denture.

► Procedure

1) Primary and Secondary impressions were made following the standard procedures for both the maxillary and mandibular ridges.(Fig. 1)

2) Master casts were obtained from final impressions.(Fig. 2)

3) Record bases and occlusal rims were fabricated on maxillary and mandibular cast.

4) Maxillary rim was adjusted parallel to the Camper's line and a 2mm visibility was established and vertical dimension both at occlusion and rest were recorded. A freeway space of 2mm was maintained. (Fig. 3)

5) The wax rim and cast assembly were mounted on a mean value articulator. (Fig. 4)

6) The piezographic method was carried out from this stage onwards. Patient was made to practice pronouncing certain phonemes before it was actually implemented. Speech exercise will help to mould the material that was inserted in the mouth providing the prosthodontic space.

7) Inorder to obtain the posterior moulding patient was asked to say "SIS" which is a linguoalveolar sound four times followed by a strong "TO" that is a linguodental sound for functional moulding. Anterior piezography was obtained by asking the patient to pronounce T, D, M, P that includes linguopalatal and bilabial sounds five times in a sequence clearly and vigorously

* Professor and HOD, **Postgraduate student, Dept of Prosthodontics, Azeezia College of Dental Sciences and Research, Kollam • Corresponding Author: Dr. Shamla Latheef, E-mail: alatheef99@gmail.com

and to pronounce "five" which is a labiodental sound so as to achieve fuctional moulding using speech.

8) Once satisfied with the clarity of speech, the mandibular rim was removed from the cast and a new record base was fabricated from self cure acrylic resin. Retentive Acrylic Struts were made on the external surface so that the mouldable material will have a mechanical lock with the acrylic. (Fig. 5)

9) Admix impression material that is a combination of three parts of impression compound and seven parts of green stick compound was used to record the neutral zone.

10) Maxillary occlusal rim with anterior teeth arranged was placed in the mouth so that it enhanced his pronunciation of phonemes during speech. (Fig. 6)

11) Admix impression material was moulded and tempered in warm water and placed onto the mandibular denture base which was then placed in the patients mouth. (Fig. 7)

12) The patient was instructed to pronounce the phonemes and simultaneous functional movements were also carried out until the material was set. (Fig. 8 and fig. 9)

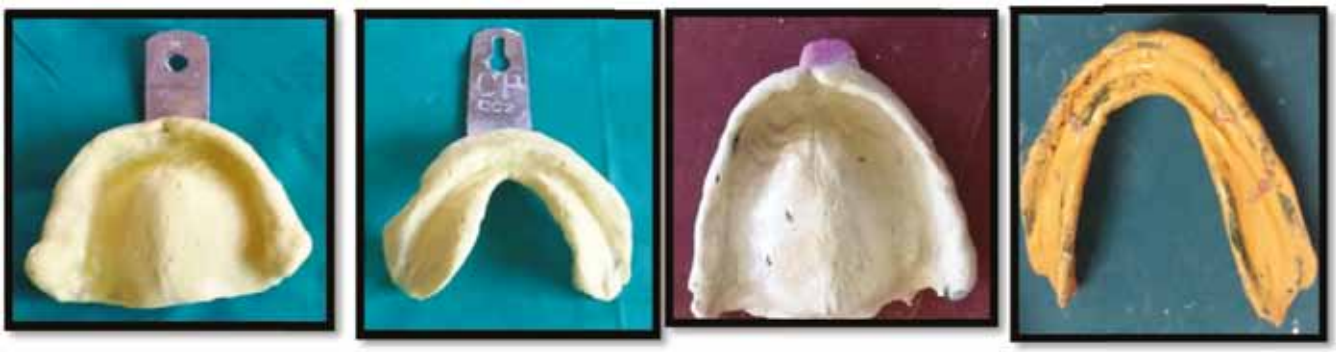

Fig. 1

Fig. 2

Fig. 3

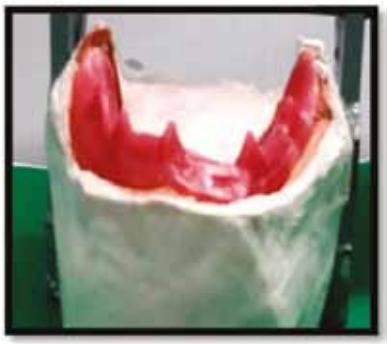

Fig. 4

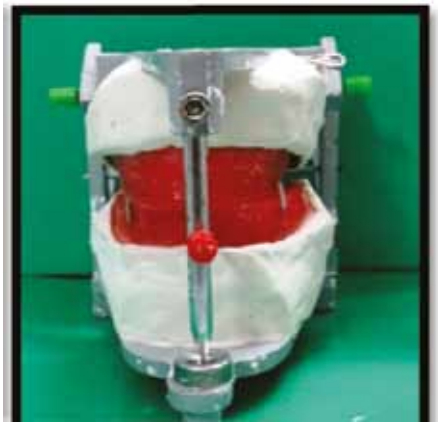

Fig. 5

Fig. 6

Fig. 7

13) An index was made by adapting silicone putty material around the piezographic record on the outer and inner sides that was obtained.

14) The set admix material was removed and void within the index was filled with molten wax to obtain a new wax rim. The wax rim was adjusted to the predetermined vertical dimension and placed in the articulator. (Fig. 12 and Fig. 13)

15) The posterior teeth were then arranged in the newly obtained space. (Fig. 14 and Fig. 15). The waxed up teeth arrangement was tried in and esthetics and speech was adjusted and corrected. (Fig. 16)

16) Dentures were finally fabricated. Occlusion was found to be satisfactory. Facial profile improved drastically. The denture was found to be stable functionally during pronunciation of the phonemes and also while performing all the functional movements. (Fig. 17 and Fig. 18)

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13

Fig. 14

Fig. 15

Fig. 16

Fig. 17

Fig. 18

17) Patient was recalled after 24 hours and one week. Patient reported that the denture was satisfactory during all functional movements and speech.

► Discussion

By this Piezographic technique exact neutral zone space was obtained which was used to make a record. The main objective being to convert this record into usable space for arranging teeth using a silicon index fabricated around the mandibular cast. Analyzing Piezography, it was noted that the lateral border and apex of the tongue had created its impression in the admix impression material. All the functional movements of the tongue were recorded by this Piezographic method which was later converted into a valuable record for arranging teeth. Piezography of the vestibular part showed the muscular action of both the masseter and the buccinator muscles, which gave information about the available space for the posterior teeth arrangement and about the anterior teeth inclination.

► Conclusion:

Piezographic method provides the patient with a great degree of comfort and confidence. It aids in creating favourable contours on the polished surfaces, especially for lower complete dentures. This in turn maximizes the retentive potential with oblique sublingual polished surfaces. Further it customizes the contours and precludes overextention and helps to arrange teeth for maximum comfort, function and esthetics.

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Management of lingual frenum using diode laser and electrocautery

* Ashwini RD, ** Adithya Reddy K., *** Nisha KJ., **** Shyam Padmanabhan, ***** Ravi J

Abstract

A short or thick and fibrotic lingual frenum results in ankyloglossia or tongue-tie. It may pose both esthetic and functional disturbing ailments to children and adults. Restricted tongue movement in ankyloglossia may at times result in speech problem with difficulty in pronunciation of some sounds,impaired mechanical cleaning of the oral cavity by free tongue movement, gingival recession or malocclusion. Treatment for ankyloglossia can be considered at any age depending upon patient's history of speech, mechanical and social difficulty. Various surgical techniques like frenotomy, frenectomy and frenuloplasty over time have been used for treating ankyloglossia. These procedures were conventionally carried out by scalpel only, until electrocautery and later lasers were introduced. In this report, we present two cases of abnormal lingual frenum, which were excised using electrocautery and diode laser.

Keywords: Lingual frenum, Ankyloglossia, Electrocautery, Laser

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► Introduction

The lingual frenum or frenulum is a fibro-mucosal fold that connects the ventral surface of the tongue and the mucosa covering the floor of the oral cavity. Lingual frenum has two attachments- an alveolar and lingual.[1] High frenal attachment on lingual side of mandible causes ankyloglossia.

Ankyloglossia or tongue tie is a congenital anomaly characterized by an abnormally short lingual frenulum. Its prevalence is around 4.4% to 4.8% in newborns, with a male to female ratio of 3:1. Clinically, the term has been used to describe different situations, such as a tongue that is fused to the floor of the mouth as well as a tongue with impaired mobility due to a short and thick lingual frenulum.[2]

Clinically acceptable normal range of free tongue is greater than 16 mm. Based on the range of tongue movement, ankyloglossia, can be classified as[3]

Class I - Mild ankyloglossia: 12 to 16 mm.

Class II - Moderate ankyloglossia: 8 to 11 mm

Class III - Severe ankyloglossia: 3 to 7 mm.

Class IV - Complete ankyloglossia: less than 3 mm

Restricted tongue movement in ankyloglossia may at times result in speech problem with difficulty in pronunciation of some sounds, impaired mechanical cleaning of the oral cavity, gingival recession or malocclusion.[4]

Indications for removal of lingual frenum

The frenum is characterized as pathogenic and is indicated for removal when

- an aberrant frenal attachment is present, which causes a midline diastema.
- flattened papilla is present, with the frenum closely attached to the gingival margin, which causes gingival recession and hindrance in maintaining the oral hygiene.
- an aberrant frenum is present with an inadequately attached gingiva and a shallow vestibule.[5]

Overtime, various surgical techniques like frenotomy, frenectomy and frenuloplasty over time have been used for treating ankyloglossia. These procedures were conventionally carried out by scalpel only, until electrocautery and later lasers were introduced.[6]

Laser and electrocautery technology has been considered as an alternative to the conventional techniques, presenting several advantages such as shorter operative working time, tissue cauterization and sterilization, hemostasis, less local anesthesia requirement, and fewer postoperative complications such as pain, swelling and infection. Laser also enhances access and visualization due to the lack of interposed instruments and bleeding at the operative field. Additionally, the need for suture is eliminated and a uniform depth in the surgical site is maintained, reducing unnecessary damage to tongue muscle.[7]

* Senior Lecturer, ** Post Graduate student, *** Reader, **** Professor and Head, ***** Senior Lecturer, Dept. of Periodontics, Vydehi Institute of Dental Sciences and Research Centre, Whitefield, Bangalore-560066
• Corresponding author: Dr. Nisha KJ, E-mail: nisharejath@gmail.com

► Case report 1

A 17 year-old female patient reported to the Department of Periodontics,with the chief complaint of deposits and receding gums in relation to lower front teeth since one year. Oral examination of the patient revealed gingival recession on both lingual and buccal aspect of 31 and 41 with grade I mobility and class I ankyloglossia. The frenulum was thick and short resulting in restricted tongue protrusion and difficulty in lifting the tip of the tongue (Fig. 1a, 1b). Medical history and family history were non- contributory. A complete hemogram was done which showed all the values within normal limits. On taking patient's consent, the treatment plan of partial lingual frenectomy was planned with electrosurgical instrument. Since the patient's chief complaint was receding gums and there was no problems associated with phonetics, treatment plan was made to do a partial frenectomy from the gingival side of the frenum. The patient was undertaken for a lingual frenectomy procedure under local anesthesia with 2% lignocaine hydrochloride and 1:80,000 adrenaline. Frenum was held with hemostat at the depth of the vestibule and two incisions were placed using needle electrode (Fig. 1c, 1d). Muscle fibers were then separated using loop electrode. Coagulation was achieved by using ball electrode. Also an additional procedure of labial frenectomy was performed.

Case 1

Fig. 1a - High frenal attachment (Lingual)

Fig. 1b - High frenal attachment (Labial)

Fig. 1c – Lingual frenum held by hemostat

Fig. 1d - Incision placed using needle electrode

Fig. 1e - Immediate Post op – After lingual frenectomy

Fig. 1f - Immediate Post op – After Labial Frenotomy

Fig. 1g, 1h - One month Post op view

Immediate post-operative views showed arrest of bleeding and no requisite for sutures (Fig. 1e, 1f). Antibiotics and analgesics were prescribed. One week post-operative view showed presence of slough in the operated site indicating healing process. One month post-operative view showed complete healing of tissues (Fig. 1g,1h).

► Case report 2

A 34-year-old male patient reported to the Department of Periodontics with complaint of difficulty in speech. Clinically, the patient presented a thick and short lingual frenulum with anterior insertion on the tongue which is class II frenal attachment (Fig. 2a, 2b). A complete hemogram was done which showedall the values within normal limits. After administering the infiltration on the dorsum of the tongue, 3-0 silk suture was put on the tip of the tongue for traction. The frenulum was held with a small curved hemostat with the convex curve facing the ventral surface of the tongue. The frenulum incision was carried out with diode laser at a wavelength of 800 nm and power of 2 W in contact mode, which was applied continuously to the central area of the frenulum from the tip to the base of the tongue (Fig. 2c). Sutures were not put as complete hemostasis was achieved. Antibiotics and analgesics were prescribed. One week post-operative view showed presence of slough in the operated site indicating healing process. Postoperative period was uneventful (Figure 2d, 2e).

► Discussion

In first case, the rationale behind doing frenectomy procedure was to improve the gingival health as there was a frenal pull which resulted in gingival recession on both lingual and buccal aspect of 31 and 41 with gingival inflammation and grade I mobility. As in second case, frenectomy procedure helped in reducing mechanical limitations and functional challenges. Patient was advised to undergo speech therapy for an immediate rehabilitation of the lingual muscle. Collaboration with the speech therapist is fundamental to complete the therapeutic approach.

As it is evident from the literature, the manipulation of tissues is better in lingual frenectomy procedure done using laser and electrocautery when compared to conventional scalpel method. Bleeding is less pronounced or rather nil and post- operative healing is faster as there is no need for the undermining of muscular tissues and suturing.[8, 9]

Case 2

Fig. 2a,2b Pre-operative view

Fig. 2c Immediate Post-operative view

Fig. 2d 2e – 1 week Post-operative view

Electrocautery and laser procedure offered the advantage of minimal time consumption and a bloodless field during the surgical procedure,with no requirement of sutures.[8] Laser technology allows early intervention, eliminating the need to refer the patient to a specialised surgeon for a conventional procedure, thus offering the patient a complete treatment, from diagnosis to minimally invasive therapy.[9] Electrocautery is safe and can be performed easily in dental office and an efficacious, economical treatment. Laser and electrocautery therapies are always better accepted than traditional therapy; the post-operative period is usually asymptomatic; relapse is minimal or absent. Both the procedures does not require sutures, eliminating a technical step that is often and decreasing operating time; a second intention healing allows the tissue to heal with an increase in tissue formation. Both the cases, first one done using electrocautery, and the second done using laser, showed comparable results in terms of postoperative discomfort and healing. With these newer procedures, we can cause minimum pain and gain maximum smiles.

► Conclusion

This case series indicates that the laser and electrocautery treatment used for the frenectomy operations provides better perception interms of postoperative pain and function. A multidisciplinary approach completes the therapy and improves the results. It is important to underline that a period of education in highly skilled techniques like laser and electrocautery and training is highly recommended before applying this technology on patients. However, correct information and motivation as well as an adequate psychological approach to the patient are important elements for the full success of the therapy.

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Inauguration of the new building of Kerala Dental Council

The inaugural function held on 16-02-2017. Dr. Shaji K Joseph, President, Kerala Dental Council lightening the lamp of the new building of Kerala Dental Council along with Mr. Bhadran (Registrar, Kerala Dental Council), Dr Harshakumar, Dr. Sabu Kurien, Dr. Jolly Mary Varghese, Dr. Biju A Nair, Dr. Aneesh P, Dr. K. Nandakumar and Dr. Prasanthilajanam.

Prevalence of occlusal characteristics in 3-5 year old children of Thiruvananthapuram

* Sheela Sreedharan, ** Reshma Suresh

Abstract

Introduction: The understanding of the variations in the occlusal characteristics of primary dentition and their influence on the permanent dentition is essential for the early interception of developing malocclusion. Many observational studies have shown that in spite of the fact that primary dentition influences the permanent dentition it varies among various ethnic groups and populations. **Objective:** To assess the occlusal characteristics of the primary dentition of 3-5 year old children of Thiruvananthapuram. **Methodology:** This was a cross sectional study conducted across various anganwadis, play schools, and kindergartens, selected using stratified multistage sampling. The study group was assessed for the several occlusal parameters, which included primary molar and canine relationship, degree of overjet and overbite, anterior and posterior crossbite, and the presence or absence of physiologic spaces and crowding. **Results:** Occlusal characteristics found were Flush Terminal Plane (65.7%), Mesial step(30%), Distal step(4.3%), Class I Canine Relation (91.3%), Class II Canine Relation(4.7%), Class III Canine Relation(4%), Anterior cross bite (2.7%), Posterior crossbite(4.3%), Scissor bite(0.7%) Maxillary spacing (90.3%), Mandibular spacing (79.3%), Maxillary crowding (2%), and Mandibular crowding(10.3%). **Conclusion:** The present study gives an insight into the occlusal characteristics, spacing and crowding of primary dentition of children of Thiruvananthapuram.

Key words: Occlusal characteristics, Primary molar relationship, Primary canine relationship

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► Introduction

The understanding of the variations in the occlusal characteristics of primary dentition and their influence on the permanent dentition is essential for the early interception of developing malocclusion[1]. Baume was the first to do studies on occlusion of primary dentition. According to him deciduous dental arches can be Type I and Type II depending on the presence or absence of generalized spaces where Type I is spaced dentition and Type II is non-spaced dentition. He also analysed the anteroposterior relation of arches using distal surface of second molars and classified into three different positions: in plane or straight (70%), in mesial step (14%), or in distal step (10%)[2].

Many observational studies have shown that in spite of the fact that primary dentition influences the permanent dentition it varies among various ethnic groups and populations. Several studies have been conducted in various regions showing that the most common molar relationship in primary dentition is flush terminal[3,4,5,6,7,8].

Literature gives evidence that it is common to have spacing between the teeth and for the second molars to have a flush terminal plane relationship in deciduous dentition. At the time of eruption of the first permanent molar, their initial occlusion is dependent on the terminal plane relationship of the deciduous second molars[3,9].

The assessment of occlusal characteristics in the primary dentition will give a prediction of a malocclusion that can occur in the mixed and permanent dentition which can be intercepted early.

► Aim and Objective

The aim and objective of the study was to determine the occlusal characteristics in 3-5 year old children of Thiruvananthapuram.

► Review of literature

The characteristics of occlusion of primary dentition affect the developing permanent dentition to a large extent as certain traits of primary dentition are casted in the successors[7]. In spite of the fact that primary dentition influences the permanent dentition it varies among various ethnic groups and populations. Studies have reported that flush terminal plane was more common at 3-4 years of age in Indian population.

The various occlusal characteristics are:

1. Primary molar relationship (terminal plane): the relationship of the maxillary and mandibular second primary molars in the vertical plane.

1.1. Flush terminal plane: the distal surfaces of maxillary and mandibular primary second molars lie in the same vertical plane.

* Professor and Head, ** Post graduate student, Department of Pedodontics and Preventive Dentistry, Govt Dental College, Trivandrum • Corresponding Author: Dr. Sheela Sreedharan, Email: sheelasreedharan@rediffmail.com

1.2. Distal step: the distal surface of mandibular primary second molar is distal to that of the primary maxillary second molar.

1.3. Mesial step: the distal surface of mandibular primary second molar is mesial to that of the maxillary primary second molar.

2. Primary canine relationship
2.1. Class I: the tip of the maxillary canine is in the same vertical plane as the distal surface of the mandibular canine.
2.2. Class II: the tip of the maxillary primary canine tooth is mesial to the distal surface of the mandibular primary canine.
2.3. Class III: the tip of the maxillary canine is distal to the distal surface of the mandibular primary canine.

3. The degree of overbite
3.1. Normal coverage of up to half the mandibular incisor by the maxillary incisors.
3.2. Increased coverage of more than half the mandibular incisors by maxillary incisors.
3.3. Edge to edge relation.
3.4. Anterior open bite-negative overlap in the vertical plane.

4. The degree of overjet is the measurement from the palatal surface of the mesial corner of the most protruded fully erupted maxillary incisor to the labial surface of the corresponding mandibular incisor
5. Anterior cross-bite is when one or more maxillary incisors and canines occluded lingual to the mandibular incisors.
6. Posterior cross-bite is when one or more maxillary primary canines or molars occluded lingual to the buccal cusps of the opposing mandibular teeth.
7. Scissor-bite is when one or more maxillary primary molars occluded buccal to the buccal surface of the corresponding mandibular molars.
8. The presence or absence of physiologic spaces between primary teeth and primate spaces (spaces mesial to maxillary canine and distal to mandibular primary canine).
9. The presence of crowding can be either single-segment (in one arch only) or two segments (in both arches).

A study was conducted in Saudi Arabia by Farsi etal[10] including 520 randomly selected preschool children to assess the occlusal characteristics which concluded as follows 80% of the children had a 'flush terminal plane' molar relationship. Otuyemietal[11] in a study to assess the occlusal relationships and spacing or crowding of teeth in the dentitions included 525 3-4 year old Nigerian children. The study concluded that there are no significant differences in occlusal relationships between boys and girls ($P > 0.05$). Rakesh N. Bahadure etal[12] in their study found that the data after evaluation showed significant values for all parameters except mandibular anterior spacing, which was 47.6%. Mild crowding was prevalent at 5 year age group and moderate crowding was common at 3 year-age group. Sham S Bhatetal[5] in a study found that flush terminal molar relationship was seen in 67.9% of children. Statistically significant ($\chi 2 = 47.835$, $p = 0.001$) increase in mesial step molar relationship was seen with age. The percentage distribution of canine relation was class I in 89%, class II in 7% and class III in 4.0%. The class I canine relationship was the most prevalent canine relation, however the age wise changes of canine relation were not statistically significant. Deepak P. Bhayya etal[3] in their study on occlusal characteristics of primary dentition of 4 to 6 year old children found that the most prevalent occlusal characteristics in sagittal directions were flush terminal plane with 52.5% followed by mesial step (36.9%) and distal step (8.4%) and class I canine relationship with 84%(14.2%) and class III (0.3%). Hedge et al[6] found that flush terminal plane was more common at 3-4 years of age, mesial step at 4-5 years, and class I canine relationship in both age groups. The prevalence of overjet less than 1 mm and overjet exceeding 1 mm was almost comparable in both groups.

► Methodology

Study was a cross sectional community based study conducted across various Anganwadis and Kindergartens of Thiruvananthapuram. Reference populationwas all 3-5 year old children in Thiruvananthapuram. Sampling were done. One ward each was selected randomly from Thiruvananthapuram - one from corporation area and one from panchayat area. Source population was 3 to 5 year old children and their parents from these wards. The sample is the subset of the source population from the randomly selected anganwadis and kindergartens and daycare centers in the randomly selected wards, one each from panchayat and corporation. Only preschool children with full complement of primary teeth and unerupted permanent teeth were included in the study. Children with maxillofacial trauma/pathology/developmental defects, history of oral habits and presence of extensive unrestored caries were excluded from the study. Finally 300 preschool children were selected for the study.

Permission from the Institutional Ethics Committee was obtained prior to conducting the study. Verbal and written informed consent was obtained from the parents of the children. Permission for participation was sought from the authorities of the anganwadis and kindergartens.

Oral examination was performed with a properly sterilized mouth mirror, and explorer. The children were examined by principal investigator in their respective anganwadis and kindergartens seated on an ordinary chair in broad day light facing away from direct sunlight as per WHO specification.

The data was entered using the software, Microsoft excel and it was analyzed using Statistical Package for the Social Science (SPSS) software version-16 for Windows. Statistical analysis was descriptive were data were described using percentage with 95% CI (confidence interval), mean value, median value and standard deviation.

► Results

Occlusal characteristics	Description	Percentage
Primary molar relation	Flush terminal	65.7%
	Mesial step	30%
	Distal step	4.3%
Primary canine relation	Class I	91.3%
	Class II	4.7%
	Class III	4%
Anterior cross bite	Present	2.7%
	Absent	97.3%
Posterior cross bite	Unilateral	4%
	Bilateral	0.3%
	Absent	95.7%
Scissor bite	Present	0.7%
	Absent	99.3%

Occlusal characteristics	Description	Percentage
Maxillary spacing	Present	90.3%
	Absent	9.7%
Mandibular spacing	Present	79.3%
	Absent	20.7%
Maxillary crowding	Present	2%
	Absent	98%
Mandibular crowding	Present	10.3%
	Absent	89.7%
Overbite	< 0	0.3%
	0-2 mm	80.6%
	>2	19.1%
Overjet	<0	2.6%
	0-2 mm	91.3%
	>2	6.1%

► Discussion:

The occlusal characteristics of primary dentition play a pivotal role in the development of permanent dentition. The objective of this study was to evaluate the occlusal characteristics of primary dentition. The results showed that the majority of the samples have flush terminal plane molar relation (65.7%) followed by mesial step (30%) and distal step (4.3%). The class 1 canine relation (91.3%) was the most prevalent canine relation.

6.1.1. Molar relation:

The current study results showed the prevalence of flush terminal molar relation to be 65.7% which was relatively similar to the results reported in the other studies[5,9,13,14]. A relatively higher percentage of flush terminal plane was reported in few other studies done in different populations[1,8,10,11]. A lesser prevalence of flush terminal plane was reported in studies done in some Indian populations[3,6,15].

In the present study the prevalence of mesial step was 30.3% and was the second most prevalent primary molar relation, which was concurrent with other studies[1,3,5,14,16]. Although Abu Alhajia[17] and Hedge etal[6] reported mesial step as the most common primary molar relation which is in contrast with the current study. Furthermore Talebietal reported mesial step molar relation to be least prevalent primary molar relation[15].

Distal step molar relation (4.3%) was the least prevalent in the current study which was in harmony with other studies[3,5,6,8,10,14,17]. In contrast a higher prevalence was reported by J JRavn[13] and Talebi[15].

6.1.2. Primary canine relation

In the present study the prevalence of class I primary canine relation was found to be 91.3% class I which was in harmony with previous studies[1,3,5,6,8,10,14]. A slightly lower prevalence of class I canine relation was reported in studies done by Otuyemi[11] and Talebi[15]. The prevalence of class II and class III were 4.7% and 4% respectively which were concurrent with other studies[5,8,15]. A few studies[3,13,17] reported a higher prevalence of class II canine relation.

6.1.3. Overbite

Present study reports shows that 68.6% children were having an overbite of 1 – 2 mms which were comparable with few studies [5,11,18]. In the present study anterior open bite was found to be 0.3%. Although a higher prevalence of anterior open bite have been reported in previous studies[17,19-21].

6.1.4. Overjet

In present study majority of children (76.6%) had overjet 0-1mms which was in harmony with a study done by Farsi[10] in Saudi children. A higher prevalence of normal overjet was found in studies done by Talebi[15] and Sham S Bhat[5] as 81% and 91.2% respectively

6.1.5. Anterior cross bite

In the present study 2.7% prevalence of anterior cross bite was found which was relatively similar to previous studies[3,5,10]. Relatively higher prevalence of anterior cross bite was reported in few studies[14,17,18,20].

6.1.6. Posterior cross bite

In current study prevalence of posterior cross bite was 4. 3% of which 4% was unilateral posterior cross bite and rest was bilateral posterior cross bite which was in concurrence with other studies[3,5,10]. On the other hand some other studies[17,19,20] have reported a higher prevalence when compared to the present study.

6.1.7. Scissor bite

Prevalence of scissor bite in the present study was low (0.7%) and was in harmony with an Indian study done by Deepak etal[3].

6.1.8. Physiologic spacing

Based on the spacing in the arches Baume has classified arches into two open or type I and closed or type II. In present study group, out of 300 children, it was found that 271 children were having spacing in maxillary dentition. Only 29 children were not having generalized spacing. Upon calculating the prevalence, it was found that 90.3% of children were having generalized spacing in maxillary dentition. Upon analysing mandibular arch, it was found that 238 children were having generalized spacing while it was 271 children for maxillary arch and 79.3% of children were having spacing in mandibular arch. Spaced types of dental arches are more common than non-spaced dental arches. The results of the current study are relatively similar with other studies[1,3,9,14,15]. The prevalence of spacing was comparatively lesser in few studies[11,13,17,19]. There is significant difference between the spacing between maxillary and mandibular arches in our study group which is in harmony with the previous studies[1-3,8,13].

6.1.9. Crowding

In the present study we have looked into whether there is any crowding in maxillary and mandibular arch separately. In our study group 6 out of 300 (2%) children were having maxillary crowding. On analysing mandibular arch, it was found that 31 (10.3%)children out of 300 were having crowding which was higher when compared to the maxillary arch. The studies[3,6,12,14] reported in India have shown a low prevalence of crowding as reported in the present study. Studies done by Otuyemietal[11] and Mouraetal[2] reported a higher prevalence of crowding.

In the current study the prevalence of anterior cross bite, posterior cross bite, scissor bite and open bite were less. This may be attributed to the fact that one of the inclusion criteria for the study was children who were not having any habits like thumb sucking, mouth breathing etc. The variations may be due to the difference in the sample size, sampling technique. The variation may also be due to the ethnic and cultural variations.

► Conclusion:

The overall prevalence of flush terminal plane molar relation was 65.7% followed by mesial step (30%) and distal step (4.3%) was the least common. The prevalence of Class I primary canine relation was found to be 91.3%, followed by Class II (4.7%) and Class III (4%).34.3% of children were having an over bite of 2mms. Only 0.3% of the children had anterior open bite. A prevalence of 91.3% of normal overjet was found in the current study. The prevalence of anterior cross bite was 2.7%. Prevalence of posterior cross bite was 4.3% of which 4% was unilateral cross bite and 0.3% was bilateral cross bite. The prevalence of generalized spacing in maxilla was 90.3% and in mandible it was found to be 79.3%. The prevalence of crowding in maxilla was found to be 2% and that of mandible was 10.3%.

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Second State Executive Meeting

The Second State Executive Meeting of IDA Kerala State for 2017 was held in Tennis Club, Trivandrum on February 12th,2017 and was hosted by IDA Trivandrum Branch. Around 106 members participated in the meeting.

Pyogenic granuloma

* Harikrishnan Balachandran Pillai, **Devisree Naveen, **Teenu Abraham,
***Raju Kurien Ninan, ****Anas Abdul Khader

Abstract

Pyogenic granuloma or granuloma pyogenicum is a well-known oral lesion. The name pyogenic granuloma is a misnomer since the condition is not associated with pus and does not represent a granuloma histologically. Pyogenic granuloma of the oral cavity is known to involve the gingiva commonly. Extragingivally, it can occur on the lips, tongue, buccal mucosa, palate. A history of trauma is common in such sites. It is theorized that pyogenic granuloma possibly originates as a response of tissues to minor trauma and/or chronic irritation, thus opening a pathway for invasion of nonspecific microorganisms, although microorganisms are seldom demonstrated within the lesion.

Key words: pyogenic granuloma

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► Introduction

Pyogenic granuloma is a common benign mucocutaneous lesion. The term is a misnomer as it neither contains pus nor it is granulomatous. It is a reactive inflammatory hyperplasia which appears in response to various stimuli such as low grade local irritation and traumatic injury[1]. The first case was reported in 1844 by Hullihen and the term pyogenic granuloma was coined only in 1903 by Crocker[2].

Pyogenic granuloma represents an exuberant tissue response to a nonspecific irritant. It usually appears in the gingiva between two teeth, but is found also on the lip, tongue, palate and occasionally on the buccal mucosa[3]. It may be found also anywhere on the skin[4]. Clinically, it is an elevated, pedunculated or sessile mass with a smooth, lobulated, or even warty surface which commonly is ulcerated and tends to bleed spontaneously or upon slight trauma.

Histologically, the lesion is composed of a vast number of endothelium lined vascular spaces and an infiltrate of lymphocytes, plasma cells and frequently polymorphonuclear neutrophils, and is covered by a thin, often ulcerated layer of stratified squamous epithelium. Organisms are commonly found on these ulcerated areas and are believed to come from the microbial flora of the mouth. No organisms are found in the deeper parts of the section. The amount of collagen is usually sparse.

Kerr and Lee have shown that the lesions tend to become more fibrous if left intact, while Bhaskar and Jacoway considered this highly unlikely. Conservative local excision is the preferred treatment. About 16% of the cases show recurrence.[5]

► Case report

A 60 year old female patient reported to the outpatient Department of Periodontology, Azeezia College of Dental Sciences and Research, Kollam, complaining of localized gingival over growth for 6 months. The mass was showing constant enlargement to the present condition, not painful but often bled while eating, brushing and sometime spontaneously. Extra oral examination was non-significant. Intra oral examination revealed an irregular, pedunculated growth in respect to buccal aspect and interdental gingiva of 22, 23 and 24 measuring about 1.2 x 1.3 cms. This discrete lobular growth was covering almost two-third of crown of 22 and 23. On palpation, the growth was soft in consistency, tender and bleeds profusely on probing. The patient was in poor oral hygiene. Based on the clinical findings, the case was provisionally diagnosed as "pyogenic granuloma". Oral panthamogram was taken and no bony involvement was seen. Routine hematologic tests were performed and was within normal range. After the informed consent of the patient, surgical excision was done, bleeding controlled by LASER and the patient was advised post-operative antibiotics, analgesic and maintainence of oral hygiene measures.

The specimen was sent for histopathological examination which showed hyperplastic stratified parakeratotic squamous epithelium with an underlying fibrovascular stroma with large number of budding and dilated capillaries, plump fibroblast, areas of extravasated blood and dense inflammatory cell infiltrates which confirmed the diagnosis.

► Discussion

Pyogenic granuloma is a kind of inflammatory hyperplasia. The term "inflammatory hyperplasia" is used to describe a large range of nodular growths

*PG student, **Senior Lecturer, ***Professor, **** Reader, Dept of Periodontology, Azeezia College of Dental Sciences and Research, Kollam. • Corresponding Author: Dr. Harikrishnan Balachandran Pillai

of the oral mucosa that histologically represent inflamed fibrous and granulation tissues. It is a common tumor-like growth of the oral cavity or skin that is considered to be non-neoplastic in nature. There are two kinds of PG namely lobular capillary hemangioma (LCH type) and non-LCH type, which differ in their histological features.

Clinically, PG is a smooth or lobulated exophytic lesion manifesting as small, red erythematous papules on a pedunculated or sometimes sessile base, which is usually haemorrhagic and compressible and may develop as dumb-bell-shaped masses. However, Epivatianos et al. reported that the two types of PG were clinically different. They found that LCH type occurred more frequently (66%) as a sessile lesion, whereas non-LCH type mostly occurred as pedunculated (77%). The size varies in diameter from a few millimeters to several centimeters, rarely exceed 2.5 cm in size and it usually reaches its full size within weeks or months, remaining indefinitely thereafter. Clinical development of the lesion is slow, asymptomatic and painless but it may also grow rapidly. The surface is characteristically ulcerated and friable, colour ranges from pink to red to purple, depending on the age of the lesion. Young PGs are highly vascular in appearance. Rarely, PG may cause significant bone loss, as reported by Goodman-Topper and Bimstein.

Although many treatment techniques have been described for pyogenic granuloma, excisional biopsy is indicated, except when the procedure would produce marked deformity in which incisional biopsy is performed. Although conservative surgical excision and removal of causative irritants (plaque, calculus, foreign materials, source of trauma) are the usual treatments for gingival lesions, the excision should extend down to the periosteum and the adjacent teeth should be thoroughly scaled to remove the source of continuing irritation. Recently, some other treatment protocols, instead of excisional surgery, have been proposed. Powell et al. reported the use of Nd:YAG laser for excision of this lesion because of the lower risk of bleeding compared to other surgical techniques.

After excision, recurrence occurs in up to 16% of the lesions so in some cases re-excision is necessary. Recurrence is believed to result from incomplete excision, failure to remove etiologic factors, or re-injury of the area. It should be emphasized that gingival cases show a much higher recurrence rate than lesions from other oral mucosal sites.[6]

Conclusion

Pyogenic granulomas are common soft tissue enlargements. Careful diagnosis is mandatory to differentiate this lesion from vascular lesions. Meticulous oral hygiene should be instituted. Surgical excision of the growth, along with curettage should be done to prevent recurrences of this lesion.

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Fig. 1 Pre- operative – frontal view

Fig. 2 Pre- operative- lateral view

Fig. 3,4 Pre- operative measurement

Fig. 5 Suture tied before excision

Fig. 6 Excised tissue

Fig. 7 LASER haemostasis

Fig. 8 1 week post- operative.

Oral melanotic macule – A case report

* Sheela Sreedharan, ** Suchithra M S, *** Ambika S

Abstract

A melanotic macule is a benign pigmented lesion of oral cavity characterized by increase in melanin pigmentation. A case report of 5 year old child with black pigmented area on the gums in relation to the right lower front tooth. An excision biopsy was done which confirmed the diagnosis by as melanotic macule.

Keywords: Melanocytic Macule, focal melanosis, malignant melanoma

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The oral melanotic macule is a benign pigmented lesion of the oral cavity, characterized by an increase in melanin pigmentation along the basal cell layer of the epithelium and the lamina propria with no increase in the number of melanocytes. The melanotic macule is typically a well circumscribed flat area of pigmentation that may be brown, black, blue or grey in colour. Melanotic macules are more common in women and young adults. Most of the lesions are less than 1 cm in diameter, although in occasional cases they may be larger in size. Treatment usually consists of surgical excision, and a biopsy to rule out the possibility of an early malignant melanoma. Periodic evaluation may be necessary to assess any clinical changes[4]. There is a paucity of literature concerning this lesion in children.

► Case report

A 5 year old male child reported to the Department of Pedodontics, Govt Dental College, Trivandrum, with the complaint of black discoloration on the gums in relation to the right lower front tooth. Parents noticed it at the age of 3 years and since then there was a gradual increase in the size of the lesion.

On examination, a well demarcated, black macule of size less than 6mm involving the marginal and attached gingival of 83{Fig 1(a), (b), (C)}. It was not associated with pain or any other signs of inflammation. There were no other pigmented lesions on the oral mucosa or the lips. There was no relevant medical history and family history. On palpation, the lesion was non tender and smooth. Based on these clinical findings, provisional diagnosis was made as Melanocytic nevus and planned for an exicisional biopsy.

His routine blood examination was found to be within normal limit. An exicisional biopsy was carried out and the specimen was sent for histologic examination. Post operative instructions were given and patient was reviewed after 1 week. Histopathology showed serial section of parakeratotic hyperplastic stratified squamous epithelium. Basal keratinocyte showed melanin pigmentation and underlying connective tissue is moderately collageneous with areas showing large pleomorphic melanocytes and granular brown melanin pigment {Fig 3}. After 7 days, healing at the surgical site was satisfactory {Fig 4(a) (b)}.

► Discussion

The identification of pigmented tissue within the oral cavity may present a diagnostic dilemma for the clinician. The color, location, duration, distribution, and appearance of the pigmented lesion(s) may be of diagnostic importance. Evaluation of a patient presenting with a pigmented lesion should include a full medical and dental history, extraoral and intraoral examinations, and laboratory tests[1].

Generally, the surface shows brown pigmentation and those located deeper are black or blue. Melanin is produced by melanocytes in the basal layer of the epithelium and is transferred to adjacent keratinocytes via membrane-bound organelles called melanosomes. In the skin, melanin is thought to be cytoprotective against the damaging effects of sunlight. The role of melanocytes in oral epithelium remains unclear. Melanin is also synthesized by nevus cells, which are derived from the neural crest and are found in the skin and mucosa.

Weather et al and Page et al recently introduced the terms labial melanotic macule for lesions on the vermilion border and oral melanotic macule for lesions within the oral cavity[2]. Buchner and Hansen analyzed 105 cases of oral melanotic macule and found that in most of the patients, melanotic macule was a solitary lesion and the most likely location was the vermilion border, followed by

* Professor and Head, ** Associate Professor, ***Post Graduate Student, Department of Pedodontics and Preventive Dentistry, Govt Dental College, Trivandrum • Corresponding Author: Dr. Sheela Sreedharan
Email: sheelasreedharan@rediffmail.com

the gingiva. George et al reviewed 353 cases of oral melanotic macule and concluded that mean age of occurrence of oral melanotic macule is 43.1 years with significant predilection for female[4].

Regarding etiology, melanotic macules may result from racial pigmentation, endocrine disturbance, antimalarial therapy, Peutz-Jeghers syndrome, trauma, hemochromatosis, or chronic pulmonary disease, or they may be idiopathic. Majority of these require clinicopathologic correlation for definitive diagnosis.

The term focal melanosis should be used as a histologic designation when hyperpigmentation of the basal-cell layer and/or the lamina propria is associated with clinically nonpigmented pathologic conditions[3].

PRE- OPERATIVE

Fig 1(a)

Fig 1(b)

Fig 1(c)

After excision of lesion

Fig 2(a)

Fig 2(b)

ZOE Pack

Fig 2(c)

Microscopic view of biopsy

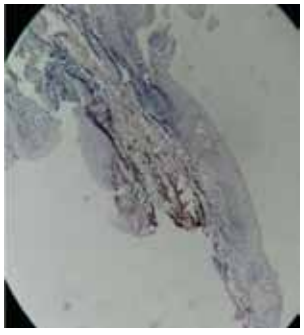

Fig 3

POST- OPERATIVE(after 1 week)

Fig 4(a)

Fig 4(b)

Oral melanotic macule has to be differentiated from certain other similar conditions exhibiting hyperpigmentation. Racial pigmentation is generally diffuse, is genetically acquired and seen at birth. It is more common in Caucasians and has been termed as oral melanosis.

The two most important causes of post inflammatory hyper pigmentation are lichen planus and lupus erythematosis. Addison's disease causes a darkening of the oral mucosa which is irregular, patchy and found on the gums. Metal deposition can cause discolouration either from copper as in Wilson's disease or from amalgam as in an amalgam tattoo. It could be associated with syndromes as in Peutz Jeghers syndrome where freckles are seen not only in the oral cavity, but also at the distal extremities, Leopard syndrome where pigmentation is seen all over the body. Antimalarial drugs like chloroquine can also cause muscosal hyperpigmentation which also occurs on other body parts like the shinns.

Regarding histopathology, the dark colour of the lesion is due to increase in melanin pigment of the basal cell layer, not from an increased number of melanocytes. Melanin may also be found in the lamina propria. Further histologic criteria are absence of elongated rete ridges and lack of prominent melanocytic activity.

If there is an elogation of rete ridges, a heavily pigmented basal cell layer, and an increase in the number of normal-appearing basal layer melanocytes, a junctional nevus has to be considered. If the melanocytes show proliferation, atypia, and some irregularity in their arrangement, the histopathologic diagnosis is atypical melanocytic hyperplasia, which may correspond clinically to early malignant melanoma (melanoma in situ)

Oral mucosal melanoma is rare, accounting for less than 1% of all oral malignancies. It is characterized by proliferation of malignant melanocytes along the junction between the epithelial and connective tissues, as well as within the connective tissue. The most common site is the palate, which accounts for about 40% of cases, followed by the gingival. Clinically, oral melanoma may present as an asymptomatic, slow-growing brown or black patch with asymmetric and irregular borders or as a rapidly enlarging mass associated with ulceration, bleeding, pain and bone destruction.

Oral melanoacanthoma is an uncommon benign pigmented lesion of the oral mucosa characterized by proliferation of dendritic melanocytes scattered throughout the thickness of an acanthotic and hyperkeratotic surface epithelium. Clinically, the lesion appears flat or slightly raised and is hyperpigmented, the colour ranging from dark brown to black. This lesion, in contrast to most of the benign pigmented lesions discussed above, has a tendency to enlarge rapidly, which raises the possibility of a malignant process in the clinical differential diagnosis. However, its tendency to occur in young black females distinguishes it from melanoma, which is uncommon in this age and racial group. The buccal mucosa is the most common site of occurrence, which may be related to greater frequency of trauma in this area.

► Conclusion

Although the lesion is completely benign, complete excision of oral melanotic macule is indicated and examined histologically. If excision has been deferred, the lesion should be checked at frequent intervals for any change in size, shape, or colour. This is especially necessary for lesions of the palate - a location for which oral malignant melanoma has a strong predilection. Melanotic lesions having duration of fewer than 5 years, which have exhibited changes in size or colour or which exhibit tumefaction, ulceration, or bleeding, should be excised. Lesions with reliable history of more than 5 years without change in character in which a known cause seems evident (trauma, etc.), may be followed or excised.

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Special effects on composite veneers in esthetics

* K.N. Thomas

When we do Restoration of composite veneer, there should be a good knowledge about colour science. Colour has three dimensions.

- Hue – (radiant energy/ name)
- Chroma- (Saturation /Intensity)
- Value – (Lightness or darkness)

Value is the relative blackness or whiteness of colour. White has got high value and black has got low value. Value is the only dimension of colour that can exist by itself. If the value blends small variations in the hue and chroma will not be noticable. The overlying enamel being essentially colourless is the principal determinant of value in a tooth, modifying the dentin hue to the observer.

Dentin that forms the pulpal surface of the cavity and deep layers of the dentinal material influence the final colour of the restoration. This phenomenon is known as "Double Layer effect" (DLE).

When we do composite veneer we have to consider the form of the tooth (Basically central, lateral, canine) Shape is the characteristic features (beauty of tooth). It is strictly to the gender of the tooth.

When a light falls on the surface of the tooth light is reflected. On the side ie area of dominance not much light is reflected.

Diamond bur is used for shaping and forming of tooth. Then with carbide bur for creating the line angles. On the centrals, mesial and distal line angles are created by 10 and 20 fluited carbide burs. On the lateral only one line angle is present. Polishing is done with Swiss flex polishing system. Brushine with wet polish can be used which is impregnated Aluminium oxide of 50 microns. Once dip in water gets activated and gives shine to the composite Veneer under pressure. These all increase value or brightness of the tooth.

The extra width of the right central in the figure can be disguised by placing the contact areas more lingually and cervically.

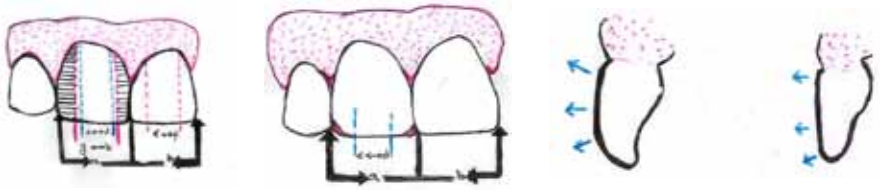
The diameter of the tooth 'a' is larger than the diameter of the tooth 'b' by carving the mesial and distal line angles to the lingual, the tooth appear thinner. Light usually reflects from the flat labial surface. The line angels 'e' and 'f' usually reflect light and give appearance of width of the tooth.

The line angles on the right central is 'g' and 'h'. By moving the mesial and distal line angels slightly to the middle of the tooth, new line angles 'c' and 'd' are created and less flat labial surface for light reflection. This reduction of reflecting surface makes the tooth appear narrower or an illusion, that it is narrower that it really is. The mesial and distal surface are made convex curving from the line angels into the area of contact.

In the case right central is narrower than the left central and needs to be made wider. Extending the contact areas both labially and incisally and also width of the line angles is increased. This gives an illusion that right central look wider than it really is. Basically more reflecting surface will be there for light reflection that makes the tooth look wider.

The illustration shows changing the contour of the labial surface of composite veneer alters the light reflection to make the tooth appear longer.

These special effects when we incooperate creates more naturality to composite veneers.



* Dental Surgeon, Cosmetic Dental Speciality Centre, Marthoma Building, M.C. Road, Tiruvalla • Corresponding Author: Dr. K.N. Thomas, E-mail: drthomasninan2011@gmail.com

Effectiveness of KMCT appliance

* Nishna T, *Anju R.V., *Jipsa Venugopal, **E. Ramakrishnan

Abstract

The prevalence of Class II div 1 malocclusion among children are as high as 15%. The correction of jaw relation by myofuctional appliances is the treatment of choice in children. Various appliances are in use for this purpose. Most of them are bulky and patient co-operation is not always achieved satisfactorily. KMCT appliance is a simple appliance and is effective in correcting this type of malocclusion. The demonstration of effectiveness of this appliance in the correction of malocclusion in a 11yr old child is presented here.

Keywords: Class II div 1 malocclusion, early orthodontics, myofunctional appliances, modified inclined plane

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► Introduction

Any deviation from normal occlusion can be termed as malocclusion, which may vary from a very slight deviation of a tooth position in the arch to a significant malpositioning of a group of teeth or jaws.[1,2] The term "irregularities of teeth" as applied to teeth that were twisted or unevenly arranged, did not express the full meaning of these deformities (Angle, 1899). The term "malocclusion" would be more expressive.[3] The term was coined by Edward Angle, the "father of modern orthodontics",[4] as a derivative of occlusion, which refers to the manner in which opposing teeth meet (mal- + occlusion = "incorrect occlusion").[5]

The World Health Organization (1987), had included malocclusion under the heading of Handicapping Dento Facial Anomaly, defined as an anomaly which causes disfigurement or which impedes function, and requiring treatment "if the disfigurement or functional defect was likely to be an obstacle to the patient's physical or emotional well-being".

Proffit (1986) elaborated that malocclusion might be associated with one or more of the following:

a) Malalignment of individual teeth in each arch: a tooth in an arch may occupy a position deviating from the smooth curve of line by being; tipped, displaced, rotated, in infra-occlusion, in supraocclusionand transposed.

b) Malrelationship of the dental arches relative to the normal occlusion: may occur in any of the three planes of spaces: anteroposterior, vertical or transverse.

Today malocclusion occurs in the majorityof the population. It is neither a normal or unhealthy condition (Proffit & Fields, 2000). Malocclusion is an appreciable deviation from the ideal occlusion that may be considered aesthetically unsatisfactory (Houston, et al., 1992) thus implying a condition of imbalance in the relative sizes and position of teeth, facial bones and soft tissues (lips, cheek, and tongue). It is important not to equate the possession of malocclusion with the need for a treatment instead it should be judged according to dental health, aesthetic or functional criteria namely: chewing, speech, breathing and swallowing (Sampson & Sims, 1992).[3]

Malocclusions feature the third highest prevalence among oral pathologies, second only totooth decay and periodontal disease and thereforerank third among world-wide dental public health priorities.[6,7]

Malocclusions are the result of orofacial adaptability to various etiological factors[6,7], which result in various implications such as psychosocial problems related to impaired dentofacial aesthetics, disturbances of oral function, such as mastication, swallowing and speech and greater susceptibility to trauma and periodontal disease[6,8]. A number of studies have demonstrated its impact on quality-of-life[6,9,10]. Since the public equates good dental appearance with success in many pursuits and societal forces define the norms for acceptable, normal and attractive physical appearance, an individual with malocclusion might develop a feeling of shame about their dentalappearance and may feel shy in social situations or lose career opportunities[6,11].

► Classification of malocclusion

In 1890, Edward Angle described

*PG Student, ** Professor, Department of Pedodontics and Preventive Dentistry, K.M.C.T Dental College, Manassery, Calicut, Kerala, India. • Corresponding Author: Dr. Nisha T., E-mail: nishnakt@gmail.com

three types of malocclusion based on molar positioning. Class I malocclusion occurs when molars are in proper position (mesiobuccal cusp of upper 1st permanent molar aligns with the buccal groove of the lower 1st permanent molar). Class II malocclusion is clinically appears with the maxillary molar ahead of the mandibular molar. Patients usually have a convex profile with a retrusivemandible. Class III malocclusion is seen when the maxillary molar is distal to the mandibular molar and patients tend to have a concave profile.[12]

► Etiology of malocclusion

The exact etiology of these malocclusions remains unclear. Both genetic and environmental factors may affect craniofacial development, creating an intricate and elaborate multifactorial etiology for malocclusion (Mossey, 1999). Due to the significant genetic complexity in the formation of the face and jaws, it is difficult to ascertain what genes are affecting various features in a particular malocclusion case. To correct large jaw discrepancies and improve esthetics and function, sometimes both orthodontic and surgical treatments are needed (Capelozza, de AraaujoAlmeida, Mazzottini, & Cardoso Neto, 1989).[12]

Prevalance of Class ii div 1

According to an European study by BrirgitThilander et al, the prevalence of class II div I malocclusion among children is 14.9%[20,21]. An Indian study at Nalgonda by Reddy E R et al showed 13.9% prevalence of class II div I malocclusion among children[22]. Though different studies show different prevalence at various places, there is an average prevalence of around 15%. [20]

Fig. 1 pretreatment view: class 2

Fig. 2 pretreatment view:class 2 molar relation on right side-molar relation on left side

Fig. 3 pretreatment : front view

Fig. 4 The new inclined plane appliance : the appliance on the working model

Fig. 5 mirror view of appliance in the patient's mouth

Fig. 6 post treatment view

Fig 7 post treatment view class 1 molar relation on right side end on occlusion on left side

Fig. 8 post treatment : front view

► Case report

Treatment using KMCT appliance

CASE

A girl of 11 yrs of age was reported to the department with a chief complaint of proclined upper front tooth region. Extraoral examination revealed a retrognathic mandible. Intraoral examination shows a class ii div 1 malocclusion with increased overjet of 10mm, deepbite and lower lip trap. It was class 2 molar relation on both sides. It was giving an appearance of excessive maxillary teeth proclination because of the retruded mandible.

When the patient was asked to bringthe mandible forward to get the molar on the class 1 relation, the profile view was normal and the appearance of maxillary anterior teethproclinationwas not there. i.e,when the mandible is brought into class 1 position the front view appearance is normal. In ordered to correct the retruded position of mandible,we have to use a myofuctional appliance that is effective in achieving the desired result.

It was decided to treat the case with the new inclined plane appliance, which is a modified and improved conventional inclined plane. So consent was taken from the child's parents. This inclined plane slopes anteriorly as well as laterally, so that there is least lateral bite interference and least bite opening. This new appliance is least bulky as compared to all other myofunctional appliances used for correction of class ii div 1 cases. This appliance has better patient co-operation and is very effective in correcting retrognathic mandibular position to a class 1 molar relationship. This can be easily fabricated in any ordinary dental labs. This inclined plane effectivelyposition the mandible into a class 1 molar relation.

The patient was instructed to wear the appliance for 24 hrs except during eating and brushing. After 5 months of wearing, the new inclined plane appliance gave good results. The child was positioning the mandible in class 1 molar position without the appliance and could notice that the mandible was not going into the previous position.

Steps in fabrication of appliance

On a working model of the upper arch Adam's clasps are made on the 1st permanent molars and a long labial bow is made. A Hawley's appliance is first made in self cure acrylic, a small amount of self cure acrylic powder is mixed with monomer in a dappendish and allowed to reach dough stage. About 1cubic centimetre of the acrylic is taken and added to the palatal side of the appliance and shaped with fingers or a spatula to form an inclined plane. The lower cast is placed on the upper cast and see that the incisal tip of the lower arch is touching the slope of the inclined plane and can slide forward. The inclined plane slopes laterally, so that there is no bite interference for canines and premolars, care should be taken that the inclined plane does not touch the gum on lingual surface of the lower incisors. After curing it is checked on the cast to see that the mandibular incisors could slide forward in to a class I position. There is minimal bite interference and minimal bite opening in the posterior area so that posterior teeth can rapidly erupt and settle in to new position.

► Discusssion

Etiology of class II malocclusion

The interaction of various genes has been shown to be the primary cause of an unbalanced and malformed craniofacial complex (Ionescu, Teodorescu, Badarau, Grigore, &Popa, 2008). An estimated two-thirds of the 25,000 human genes contribute to craniofacial development (Proffit, Fields, & Sarver, 2007). Craniofacial structures are developed from complex processes of tissue interactions, cell migrations, and coordinated growth (Kouskoura et al., 2011; Nieminenet al., 2011). Neural crest cells are thought to be controlled by homeobox genes and their derivations include the maxilla, mandible, zygomatic, nasal bones and bones of the cranial vault. Homeobox genes, specifically Msx-1 and Msx-2, regulate expression through proteins in the growth factor family and steroid/thyroid/retinoic acid superfamily. Disruption and poor control in the migration of the neural crest cells can produce dentoalveolarabnormalities and many craniofacial anomalies such as Treacher Collins syndrome and hemifacialmicrosomia (Mossey, 1999a; Proffit, Fields, & Sarver, 2007). Other abnormalities in the embryologic developmental stages can elicit many morecraniofacial malformations (Proffit, Fields, & Sarver, 2007). Disruption of the embryologic process may result in missing or malformed dentition, cleft lips and palates, craniosynostosis and more serious conditions like holoprosencephaly (Kouskoura et al., 2011; Wilkie&Morriss-Kay, 2001). Ionescu et al. proposed that the environment plays a large role in the development of the craniofacial structure.

The three main contributing factors include

1) changes in mastication affecting masticatory muscle development,

2) abnormalities in the normal functions like breathing, deglutition and speaking,

3) damaging habits including thumb sucking, lip-sucking or resting tongue (Ionescu, Teodorescu, Badarau, Grigore, &Popa, 2008). Teratogens like drugs, alcohol and viruses can also affect the craniofacial development. Abnormal pressures during intrauterine molding or trauma during development may

also result in abnormal jaw growth (Proffit, Fields, & Sarver, 2007). Chronic illness, prolonged starvation and excessive stress are other factors that can hinder growth and development (Mossey, 1999a). Both genetic and environmental influences play a role in the development of Class II malocclusion. Studies of Class II division 1 patients have shown that this condition is heritable and is consistent with a polygenic mode of inheritance. A polygenic model implies that a number of genes with small additive effects provide geneticpredisposition to the phenotypic expression observed in the class II division 2 malocclusion. There is a definite environmental contribution to this malocclusion as well. Disparate muscular pressures, including the tongue and lips, can enhance proclination of maxillary incisors or retrocline lower incisors, creating a larger horizontal distance between the maxillary and mandibular incisors, also known as increased overjet (Mossey, 1999b). Class II division 2 patients have more definable characteristics commonly occurring together, which helps elicit a more obvious genetic component than Class II division 1 patients (Mossey, 1999b). Thicker upper and lower lips were found in Class II division 2 patients compared to Class I controls (McIntyre& Millett, 2006). In addition, the Class II division 2 subjects had greater lower lip contact and thus increased resting pressure on the maxillary incisors than the controls. This could be a causal effect in producing maxillary incisor retrusion and can be a concern with post-treatment stability (Lapatki, Klatt, Schulte-Monting, & Jonas, 2007; McIntyre & Millett, 2006). Habits such as mouth breathing, thumb-sucking, lip sucking, or an aberrant swallowing patternare local factors often associated with the initiation of a Class II division 1 malocclusion or that may exacerbate the already existing malocclusion. To successfully treat these cases and prevent relapse these local factors must be removed (Smith, 1938). In addition, any factor disrupting the nasopharyngeal pathway, including allergies or enlarged adenoids can possibly affect the occlusion adversely.

To aid in the prevention of malocclusion it is crucial to begin identifying and correcting the environmental factors that contribute to a disharmony in the face and jaws (Ionescu, Teodorescu, Badarau, Grigore, &Popa, 2008).[12]

In McNamara, 1981 longitudinal study the measures of the craniofacial region has been divided into 4 sets based on different antero-posterior criteria, maxillary skeletal position, maxillary dental position, mandibular skeletal position, mandibular dental position. He also included vertical configuration of class II patient.

After his study on lateral cephalometric radiographs of 277 individuals between ages of 8-10 yrs, he came to a conclusion that

1. Class II malocclusion is not a single clinical entity. It can result from numerous combinations of skeletal and dental components.

2. Only a small percentage of the cases in this study exhibited maxillary skeletal protrusion relative to cranial and cranial base structures. On the average, the maxilla was in a neutral position, and when not in a neutral position, it was more often in a retruded than protruded position.

3. The degree of maxillary dental protrusion observed in this study was less than that reported by most previous investigators.

4. The lower incisors were usually well positioned, but cases of mandibular dental retrusion and protrusion were also noted.

5. Mandibular skeletalretrusion was the most common single characteristic of class II.

6. Although a wide variation in vertical development was observed, almost half of the sample exhibited excessive vertical development. Abnormalities in both the horizontal and vertical development of the mandible are the most common components of class II malocclusion.

Maxillary skeletal protrusion is not a common finding, in fact more cases of maxillary retrusion were observed. Thus, it appears that is designing the ideal treatment regime, those approches which might alter the amount and direction of mandibular growth could be more appropriate in many cases than those which restrict maxillary development[13].

► Treatment of class II malocclusion

Treatment of patients with Class II malocclusion depends on the severity, the growth potential, and the patient's desires. The options for correction of mild to moderate jaw discrepancies are a combination of growth modification and orthodontic treatment (Bailey, Proffit, & White, 1999). Although the growth potential of patients is unknown, the presence of a distal step (Class II) in the primary dentition almost always elicits a Class II malocclusion in the permanent dentition (Bishara, 1981).

If there are inadequate amounts of growth remaining, orthodontic camouflage of the underlying skeletal discrepancy could possibly be an option. The effect, however, of extractions or camouflage treatment on a person's facial esthetics must be considered (Bailey, Proffit, & White, 1999)[12].

The retrognathic mandible, maxillary prognathism and reduce vertical skeletal jaw relationship is the most common characteristics of Class II division1 malocclusion[14].

According to McNamara the most frequent skeletal problem in class II malocclusion in preadolescents is mandibular retrognathia[13,15].

Hence, any appliance that demonstrates the ability to stimulate significant mandibular growth would be an important asset to a clinician's armamentarium. Animal studies have demonstrated that appliances which position the mandible anteriorly can stimulate significant mandibular growth, primarily by enhanced remodelling response at the condylar region[15,16,17].

The purpose of functional therapy is to change the functional environment of the dentition to promote normal function18. Most of the functional appliances are designed to enhance the forward growth of the mandible by encouraging a functional displacement of the mandibular condyles downward and forward in the glenoid fossa. This is balanced by an upward and backward pull in the muscles supporting the mandible. Adaptive remodelling may occur on both articular surfaces of the temporomandibular joint to improve the position of the mandible relative to the maxilla[17,18]. Two of the most widely used functional appliances for orthopaedic correction of class II skeletal malocclusions used functional appliances are the activator and the twin block[19].

In the Inclined plane appliance used by Emami Meibodi Shahin[23], and that used by Roa. SA etal, the inclined plane is not large enough to guide mandible while closing. The overjet can be up to 10-15mms. The KMCT inclined plane is modified so that the mandibular incisors touches the inclined plane upon closing of the mandible and it guides the mandible to slide on the Inclined plane and reach the desired new anterior positioning of the mandible. In this Inclined plane appliance there is no occlusal interference in canine- premolar area and the bite opening is minimal. This is because the Inclined plane slopes laterally also[20].

EmamiMeiboidiShahin et al studied on 25 children in early mixed dentition period and found that the conventional inclined plane is effective as an alternative to complicated functional appliances in the treatment of class II div I malocclusion[23]. A modified anterior inclined plane incorporating a double cantilever spring was used by Roa S.A et al to treat a class II div II patient[24].

Our modified and improved new inclined plane appliance is simple in design, contained in one arch, least bulky and becomes practically more acceptable for the child and parent. The principle of functional therapy is to reposition a retrusive mandible to a forward position by constructing an appliance with a protrusive bite when the appliance is placed in the mouth. Repositioning the mandible in a downward and forward position by the inclined plane appliance stimulates a proprioceptive response in the muscles of mastication. The purpose is to encourage adaptive skeletal growth by maintaining the mandible in a corrected forward position for a sufficient period of time to allow adaptive skeletal changes to occur in response to a functioning stimulus in the temporomandibular joint area.

The inclined plane is modified so that the mandibular incisors touches it upon closing of the mandible and it guides the mandible to slide on it and reach the desired new anterior positioning of the mandible. In this Inclined plane appliance there is no occlusal interference in canine- premolar area and the bite opening is minimal. This is because the Inclined plane slopes laterally also.

► Conclusion

Poor co-operation from children in wearing bulky and complicated myofunctional appliances for correction of class II division I malocclusion gave poor results. Here a new simple, improved inclined plane appliance is described.

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Electronic apex locators

* Amal Sidharth, **E Ramakrishnan, ***Natta Sreelakshmi ****Ershad Ahammed

Abstract

Success or failure of endodontic treatment depends on an accurate determination of the working length. Electronic apex locators (EALs) are a routinely used procedure in endodontic practice; yet their accuracy has been reported to vary from 35% to 100%. Electronic apex locators reduce the number of radiographs required and assist where radiographic methods create difficulty. They may also be indicated in cases where the apical foramen is some distance from the radiographic apex. This review article includes the genearations, types, cost and availability of different Electronic Apex Locators.

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Introduction

Working length has been defined as "the distance from a coronal reference point to the point at which canal preparation and obturation should terminate". The determination of accurate working length is one of the most critical steps of endodontic therapy. Failure to accurately determine and maintain the working length, might result in the length being too long and might lead to preparation through apical constriction, causing over preparation and over filling. Failure to determine the working length (WL), might also lead tocleaning and shaping short of apical constriction causing under filling.[1]

Retained pulp tissue may persist and cause prolonged pain. Several techniques have been proposed to determine root canal length, but the ideal procedure is yet to be identified. Traditionally, radiographs were the primary tool for determining primary root canal lengths for pulpectomy procedures. Dental radiography enabled the clinician to visualize the extent of the tooth, the obturating material and the periradicular structures. Radiographic determination of canal lengths, however, is subject to several problems. Radiographs are two dimensional images of a three dimensional structure. It is often impossible to locate structures in the buccolingual aspect due to superimposition. Root resorption and superimposition of permanent successors over the primary root apices very well obscure canal length determination. Radiographic distortion also compromises accurate location of root apices. In addition, radiographs are highly dependent on patient cooperation, especially in child patients. Radiographs lengthen appointment time, and most importantly, expose patients to ionizing radiation. In spite of these drawbacks, it still remains the most commonly used method to determine the root canal length.[2]

An electronic apex locator is an electronic device used in endodontics to determine the position of the apical foramen and thus determine the length of the root canal space. The apex of the root has a specific resistance to electrical current, and this is measured using a pair of electrodes typically hooked into the lip and attached to an endodontic file. The electronic principle is relatively simple and is based on electrical resistance; when a circuit is complete (tissue is contacted by the tip of the file), resistance decreases markedly and current suddenly begins to flow. According to the device this event is signalled by a beep, a buzz, a flashing light, digital readouts, or a pointer on a dial. Electronic apex locators reduce the number of radiographs required and assist where radiographic methods create difficulty. They may also indicate cases where the apical foramen is some distance from the radiographic apex. Other roles include the detection of root canal perforation. The development of the electronic apex locator has helped make the assessment of working length more accurate and predictable[3].

This review article includes the various generations,cost,types and availability of different apex locators.

History of apex locators

The original electronic apex locators operated on the direct current principle. A problem with these devices was that conductive fluids such as haemorrhage, exudate, or irrigant in the canal would permit current flow and therefore gave a false reading. Newer devices are impedance-based, using alternating current of two frequencies; these measure and compare two electrical

*PG Student, **Senior Professor, ***Professor and HOD, ****PG Student, Dept. of Prosthodontics, KMCT Dental College, Kozhikode. • Corresponding Author: Dr Amal Sidharth E-mail: amal186629@gmail.com

impedances that change as the file moves apically. The benefit is that these devices are much less affected by fluid conductive media in the canal. An electronic method for root length determination 2 was first investigated by Custer (1918). The idea was revisited by Suzuki in 1942 who studied the flow of direct current through the teeth of dogs. He registered consistent values in electrical resistance between an instrument in a root canal and an electrode on the oral mucous membrane and speculated that this would measure the canal length (Suzuki 1942). Sunada took these principles and constructed a simple device that used direct current to measure the canal length. It worked on the principle that the electrical resistance of the mucous membrane and the periodontium registered 6.0 kΩ in any part of the periodontium regardless of the person's age or the shape and type of teeth (Sunada 1962).[3]

► Apex locator generations

The first generation

They are Resistance based apex locator. It Measures opposition to the flow of direct current or resistance. It is based on the principle that resistance offered by the the periodontal ligament and the oral mucosa is the same 6.5 K ohms. Root canal meter was developed in 1969,but pain was felt while using because of high currents around 150hz in original machine Endometer and endodontic meter S2 was brought into use with improved adjustments which exhibited less current around 5micro ampere (1995)

In 1985 DENTOMETER and ENDORADAR were also found to be unreliable when compared with the actual radiographic readings.[4]

The second generation

They are Impedance based apex locators. It measures opposition to the flow of alternating current or impedance. This apex locator indicates the apex when two impedence values approach each other. Root canal has to be free of all the electro conductive materials to obtain accurate Endo color,endoanalyzer (combination of apex locator and pulp tester)[3]

The third generation

Third generation apex locators are similar to the second generation except that they use multiple frequencies to determine the distance from the end of the canal. These units have more powerful microprocessors and are able to process the mathematical quotient and algorithm calculations required to give accurate readings[3]

The fourth generation

These measure the resistance and the capacitance separately rather than the resultant impedence value. Hence better accuracy and thus less chance of occurrence of errors. RAYPEX 6 is a 4th generation apex locator which uses two separate frequencies. Disadvantage of the fourth generation

Fig. 1 Endometer

Fig. 2 Endoradar

Fig. 3 Endoanalyzer

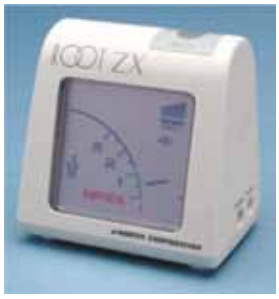

Fig. 4 Root ZX

Fig. 5 Raypex 6

Fig. 6 i Root

Fig. 7 Adaptive

apex locators is that they need to perform in relatively dry or partially dried canals.[3]

The fifth generation

5th generation apex locator was developed in 2003. It measures the capacitance and resistance of the circuit separately. It is supplied by diagnostic table that includes the statistics of the values at different positions to diagnose the position of the file. Devices employing this method experience considerable difficulties while operating in dry canals[3]

The sixth generation

Adaptive Apex Locator overcomes as the disadvantages of the popular apex locators 4th generation low accuracy on working in wet canals, as well the disadvantages of devices V th generation difficulty on working in dry canals and necessarily of compulsory, additional wetting[3]

Studies on apex locators

Conventional radiography as a method of determining the working length has shortcomings in that it depends on the child's co-operation as well as the operator's proficiency. In addition to this, minor degrees of resorption may not be visible, and overlapping by adjacent anatomical structures can obscure the clarity of the image (Priya et al 2005).

Katz et al(1996) performed study to determine working length in dry and wet environment. No significant difference was found in dry or wet canal condition.[5]

Number of in vitro and in vivo comparative studies have been performed to evaluate accuracy of apex locators with radiographic, tactile sense, visual method & digital radiographic method(Katz et a 1996, Priya et al 2005, Sara et al 2008, Neena et al 2011, S. Saritha et al 2012). No significant difference is found in between the methods compared.

Bodur et al. (2008) used primary teeth with resorption not more than one third and found that Root ZX (J. Morita, Tokyo, Japan) and Endex (Osada, Tokyo, Japan) exhibited only 63.4% and 48.4% accuracy within 1 mm of the visually determined root canal measurements in resorbed roots, respectively.[6]

Angwaravong & Panitvisai (2009) performed study onprimary teeth with one sixth to one third resorption and concluded that using a criterion of ± 0.5 mm, the accuracy of the Root ZX was high and not affected by root resorption.[7]

Sara Ghaemmaghami et al (2008) used Root ZX to measure the canal lengths of 150 primary incisors in vivo. After the teeth were extracted, a standard ruler was used to measure the canal lengths to the nearest 0.5 mm and found that Root ZX was able to locate the apex within this clinically acceptable range in 143 (95%).[8]

Leonardo et al (2008) using criteria 1mm short of apical foramen found accuracy in apical foramen location using Root ZX II & Mini apex.[9]

Fig. 8 Root Zx MINI

Fig. 9 i-Root

Fig. 10 DPEX-3

Fig. 11 Joypex 5

Fig. 12 APEX ID

Fig. 13 I-PEX 2

Fig. 14 Dental Allure

A. C. V. Mello-Moura et al (2010) used Root ZX in determining root canal of primary incisors with least two third resorption and found EAL method performed best for root canal length determination in primary teeth.[10]

P. C. A. Beltrame et al (2011) found Root ZX apex locator was accurate in determining in vivo and ex vivo the working length ±1 mm in primary molar teeth in over 90%.[11]

S. Saritha et al (2012) used Root ZX II EAL to determine the electronic working length in forty primary maxillary central incisors and concluded Root ZX II EAL can be used as a reliable device for obtaining root canal length in primary maxillary incisor teeth.[12]

Most in vitro investigations reported the high accuracy of different types of EALs at different levels of resorption.

Various generations of EALs have tested in primary teeth out of these Root ZX & Root ZX II(J. Morita, Tokyo, Japan) have given more reliable results compared with others.

Many studies have been already conducted on many apex locators and many are still ongoing. It is a device which even though had good results according to studies, many pedodontists are still refusing to have a glance at it. Cost of the product is a factor,but there are products available in lesser prices in the markets which will be worth a try.

Availability and prices

ROOT ZX MINI-Rs 55,000 (Marketed by Bombay Dentals,Mumbai) Fig. 8 (Root Zx MINI)

iROOT APEX LOCATOR - Rs 52500
(Marketed by Bombay Dentals,Mumbai) Fig. 9 (i-Root)

DPEX 3 APEX LOCATOR - Rs 11,500
(Unicord Dentmart.net) Fig. 10(DPEX-3)

Intello Joypex 5 apex locator by PYREX- Rs 10999
Fig. 11 (Joypex 5)

Kerr Apex ID - Rs 47000 (www.dentbay.com)
Fig. 12 (APEX ID)

NSK Ipex 2 APEX LOCATOR- Rs 45500
(www.dentbay.com) Fig. 13(I-PEX 2)

Prime Dental Allure Apex Locator - Rs 13000
(www.dentbay.com) Fig. 14 (Dental Allure)

Conclusion

Acceptable accuracy in measuring working length in primary teeth can be achieved by using electronic apex locator. With continuous advancements in the technology of EALs, the correct use of apex locators has a definitive place in clinical Pedodontics and their day to day use in clinics can reduce chairside time, limit radiation and achieve more cooperation from the children.

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Microsurgery in dentistry

* Faisal M.A. Gaffoor, ** Ravisankar M. S., *** Sabari Girish, ****Arya K.S., ***** Subbalekshmi

Abstract

Microsurgeryrefers to a surgical procedure performed under magnification by a microscope. It offers more efficiency,improved ergonomics,minimal invasiveness and less fatigue. This review article highlights the various magnification systems,principles and applications of microsurgery in various fields of dentistry.

Key words: Magnification,Operating microscope, Loupes,Microsurgical instruments.

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► Introduction

Microsurgery is defined as the refinement of basic surgical techniques which is made possible by improved visual acuity gained with the use of surgical microscope.[1] It incorporates three important principles. First is enhancement of motor skills thereby improving surgical ability. Second is decreased tissue trauma at the surgical site, which is apparent in the use of small instruments and a reduced surgical field. Third is the application of microsurgical principles to achieve passive wound closure. The main aim is to eliminate the dead spaces at the wound edge to circumvent new tissue formation needed to fill surgical voids. The concept of microsurgery offers three distinct elements referred to as microsurgical triad (Fig.1); that includes illumination, magnification and increased precision in the delivery of surgical skills.[2]

► History

In 1694, Anton van Leeuwenhook constructed the first compound lens microscope. Magnification for microsurgical procedure was introduced to medicine during the late nineteenth century.[3] Saemisch, a German ophthalmologist introduced simple binocular loupes to ophthalmic surgery in 1876. Carl Nylen in 1921 conducted the first surgical operation to correct otosclerotic deafness using binocular microcope.[4] During 1950s, Barraquer began using the microscope for ophthalmological surgery.[5] Microscope had been introduced to dentistry in 1978 by Apotheker and Jako.[6] During 1992, Carr published an article outlining the use of the surgical microscope during endodontic procedures.[7] Later in 1993, Dennis A Shanelec adopted the use of magnification in the field of Periodontology.[1]

Types of magnification systems

There are two types of optical magnification systems available.8

A. Loupes (Fig. 2)

B. Operating Microscope (Fig. 3)

A. Loupes

The most common magnification system used in dentistry is magnification loupes. Loupes are fundamentally two monocular microscopes,with side-by-side lenses angled to focus on an object. The magnified image that is formed has stereoscopic properties by virtue of their convergence. A convergent lens optical system termed as Keplerian optical system. The main disadvantage is eye strain, fatigue and even vision changes with prolonged use of poorly fitted loupes. Loupes are of 3 types: Simple loupes, Compound loupes and Prism loupes. In dentistry,mainly Prism and Compound type are used. For periodontal surgical procedures, loupes of 4X to 5X is commonly used which will provide increased visual acuity.

Simple loupes

Simple loupes consists of a pair of single meniscus lenses. Each lens has two refracting surfaces. The magnification can be increased by increasing lens diameter and its thickness. The main disadvantage of using simple loupes include: 1. They are highly subjected to spherical and chromatic aberration 2. Because of their size and weight limitations,they have no dental applications beyond a magnification range of 1.5 diameters.[9]

Compound loupes

Compound loupes consists of converging multiple lenses with intervening air spaces to gain additional refracting power, magnification, working distance, and depth of field. They are achromatic and these lenses consists of two glass pieces bonded together with clear resin. The specific density of each lens counteracts the chromatic aberration of its paired lens to produce a color correct image.[10] They are commonly mounted on eye glasses.

Prism loupes

The most advanced loupe is the prism telescopic loupe. Prism loupes are low power telescopes containing Schmidt or Rooftop prisms that lengthen the light path through a series of mirrors reflections within the loupe.11 This will

* Professor, ** Reader, ***Senior Lecturer, Dept. of Conservative Dentistry & Endodontics, ****Senior Lecturer, Dept. of Periodontics, Noorul Islam College of Dental Sciences, Neyyatinkara, Thiruvananthapuram; *****Senior Lecturer, Dept. of Pedodontics & Preventive Dentistry, Faculty of Dental Sciences, Sri Ramachandra University, Porur, Chennai 600 116
• Corresponding Author: Dr. Faisal M.A. Gaffoor, Email: drfaizalgaffoor@rediffmail.com

folds the light sothat barrel of loupes can be shortened. Prism loupes produces better magnification,wider depths of field,longer working distances and larger fields of view. The barrels of prism loupes are short enough to be mounted on eye glasses,but at magnifications of 3.0 diameters or greater the increased weight often results in headband-mounted loupes being more comfortable than those mounted on glasses.

B. Operating microscope

The operating microscope offers flexibility and comfort superior to magnifying loupes. They are designed on Galilean principles. They combine the magnification of loupes with a magnification changer and a binocular viewing system,which will protect against eye strain.[12] They also incorporate fully coated optics and achromatic lenses, with high resolution and good contrast stereoscopic vision. To be used in various areas of mouth,the microscope must have extensive horizontal and vertical maneuverability. Surgical microscopes use co-axial fibre-optic illumination. This type of light produces an adjustable, bright,uniformly illuminated, shadow-free, circular spot of light that is parallel to the optical viewing axis. Ergonomic and body posture advantages also occur when using the microscope. For periodontal surgical procedures,operating microscope has got a magnification from 10X to 20X appears to be ideal.

Microsurgical instruments

An important characteristic of microsurgical instruments is their ability to create clean incisions that prepare wounds for healing by primary intention.[13] Microsurgical instruments should be approximately 15cm in length and should be placed in pen grasp position which will improves the surgical ability. The weight of each instrument should not exceed 15–20 g to prevent muscular fatigue. They should be circular in cross-section. Working tips are much smaller when compared to standard sized ones. Titanium instruments are used for strength and lightnessand are made with round handles to allow for high precision movements. A basic set comprises of a needle holder, micro scissors, micro scalpel holder, anatomic and surgical forceps, and a set of various elevators. Several types of ophthalmic knives such as the crescent, lamellar, blade breaker, sclera and spoon knife can be used in the field of Periodontics. Ophthalmic knives offer the dual advantages of extreme sharpness and minimal size. This helps limit tissue trauma and promotes faster healing.

Microsurgical knots

Two basic knots used in microsurgery are the square knot or reef knot and surgeon's knot. The reef knot is composed of two single loops thrown in opposite directions. It is ideal for passive wound closure.[14] The surgeon's knot is composed of two double loops thrown in opposite directions. The first double throw is less likely to loosen when performing the second throw, making it is easier to control tissue apposition.

Microsurgical needles

The needle diameter is slightly larger than the suture size. Sutures used in microsurgery are swaged, making the needle and the suture continuous.[15] Needles with a diameter of less than 0.15mm are used in microsurgery.

Microsurgical sutures

The suture of choice is a monofilament suture material such as polypropylene or polydioxanone. These materials are bacteriostatic and non-inflammatory. In periodontal microsurgery the suture size ranges from 6-0 to 9-0.16

► Applications of microsurgery

Microsurgery in endodontics

Microscope helps to identify caries, insufficient crown or restorative filling margins and fracture lines. During root canal therapy, magnification and illumination provided by the operating microscope aids with caries removal. High magnification allows localization and instrumentation of calcified canals, identification of canal bifurcations, removal of canal obstructions such as denticles and calcifications and obturation. Regenerative endodontics can also be done with the help of microscope. It also aids in nonsurgical perforation repair, allowing the clinician to clean the perforation site and place the perforation repair material more precisely.[17] In case of endodontic retreatments, microscope helps in identifying and removing leftover filling materials such as sealer remnants, guttapercha, silver points and carrier-based materials, posts or fractured instruments.[18] Surgical endodontics has been completely transformed by microscopic procedures.

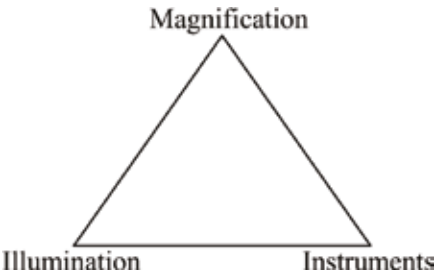

Fig. 1 Microsurgical triad

Fig. 2 Magnification loupes

Fig. 3 Operating microscope

All steps of endodontic microsurgery are carried out under varying degrees of magnification including flap preparation, identification of root apices, root-end resection, inflammatory tissue removal, root-end preparation, root-end filling, and suturing.[19]

Microsurgery in periodontics

The introduction of surgical microscopes led to less invasive surgical incisions and flap reflections; thereby creating a bloodless field which helps the clinician to work. Microsurgical principles have applications in resective and regenerative procedures,extractions and ridge preservation procedures,sinus augmentations and large soft tissue transfers. Periodontal microsurgery found to be effective in treating recession with less trauma.[20] In Millers Class1 and 11 recession,complete root coverage can be achieved; but in case of Class III & Class IV recession, only partial root coverage is achieved.[21] Ridge augmentation includes guided bone regeneration,block and particulate grafts,soft tissue grafts and a combination of these. To establish adequate vertical height, sufficient soft tissue thickness must be created to provide an emergence profile for pontics or a dental implant prosthesis. Papilla reconstruction may be viewed conceptually as a microsurgical variation of ridge augmentation periodontal plastic microsurgery between two adjacent teeth.[22] Microultrasonics are instruments used for the removal of supragingival and subgingival calculus. They are probe-like measuring 0.2 to 0.6 mm in diameter and moves with an ultrasonic speed of 25,000 to more than 40,000 cycles per second.[23] The periodontal endoscope helps in better visualization of root surface at magnifications of 24x to 48x and is achieved through a 0.99 mm fiber optic bundle. This fiber is delivered to the gingival margin coupled into an instrument called an Explorer. The captured image will be then relayed on to the screen. The explorers are of shielded or nonshielded ones. The Shielded explorers are used for periodontal debridement and helps in subgingival visualization.

Microsurgery in implant therapy

All phases of implant treatment can be performed under microscope. One of the novel applications of microsurgery is in the sinus lift procedure. The surgical microscope can aid in visualization of the sinus membrane.[24]

Advantages of microsurgery

- Surgical decision making is enhanced
- Reduced Neuromuscular fatigue
- Less post-operative inflammation and pain
- Reduced tissue trauma
- Healing by primary intention.
- Ergonomics and good body posture.

Drawbacks

1. Technique sensitive
2. High cost
3. Restricted areas of vision
4. Time consuming

► Conclusion

Microsurgery is technique sensitive and more demanding than macrosurgery, but it results in more rapid healing because it is less invasive and less traumatic. The operating microscope provides a microsurgical triad of illumination, magnification and an environment of increased precision in which surgical skills can be refined. Microsurgery facilitates enhanced vision and ergonomics, thus resulting in better therapeutic outcome.

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Diagnose the following Case

* Preeja Premakumar, ** Deepa, ***Joseph Edward ****Jacob John

A 16 yr old boy presented with an asymptomatic swelling on the right side of the face, diffuse swelling in relation to right side of the face, extending from right preauricular region to submandibular region. Skin over the swelling appears normal. [Fig 1] Patient noticed the swelling since 4 months, which slowly increased in size. There was intermittent pain over the jaw. No paresthesia or any discharge externally or intraorally. Buccal and lingual bony cortical expansion extending from distal of lower right mandibular second premolar to ascending ramus. The mandibular right second premolar and first molar demonstrated grade 1 mobility.

On intraoral examination obliteration of the right buccal vestibule was noticed in the lower right premolar and molar region [Fig 2]. Orthopantomograph [Fig3] showed multilocular radiolucency involving the body and ramus of mandible on right side extending to coronoid and condylar process. Lower right third molar was displaced towards the angle of mandible. Root resorption was present in relation to mandibular right second premolar and mesial root of first molar. Loss of lamina dura in relation to second molar, first molar, second premolar. What is the provisional diagnosis and differential diagnosis?

Histopathology showed large cystic space lined with odontogenic epithelium resembling ameloblastoma with cells showing reversal of polarity and subnuclear vacuolation. Thin overlying layer of stellate reticulum like cells can also be seen in relation to the odontogenic epithelium. A few ameloblastomatous follicles also can be seen scattered in the stroma.

Fig 1

Fig 2

Fig 3

PD: Odontogenic cyst

DD: ameloblastoma, OKC, central giant cell granuloma

Final diagnosis: unicystic ameloblastoma.

* Senior Lecturer, ** Professor and Head, Department of Oral Medicine and Radiology; *** Professor and Head of Department of Oral and Maxillofacial Surgery, **** Professor of Department of Oral and Maxillofacial Surgery, Azeezia College of Dental Science and Research,Meeyyanoor,Kollam.

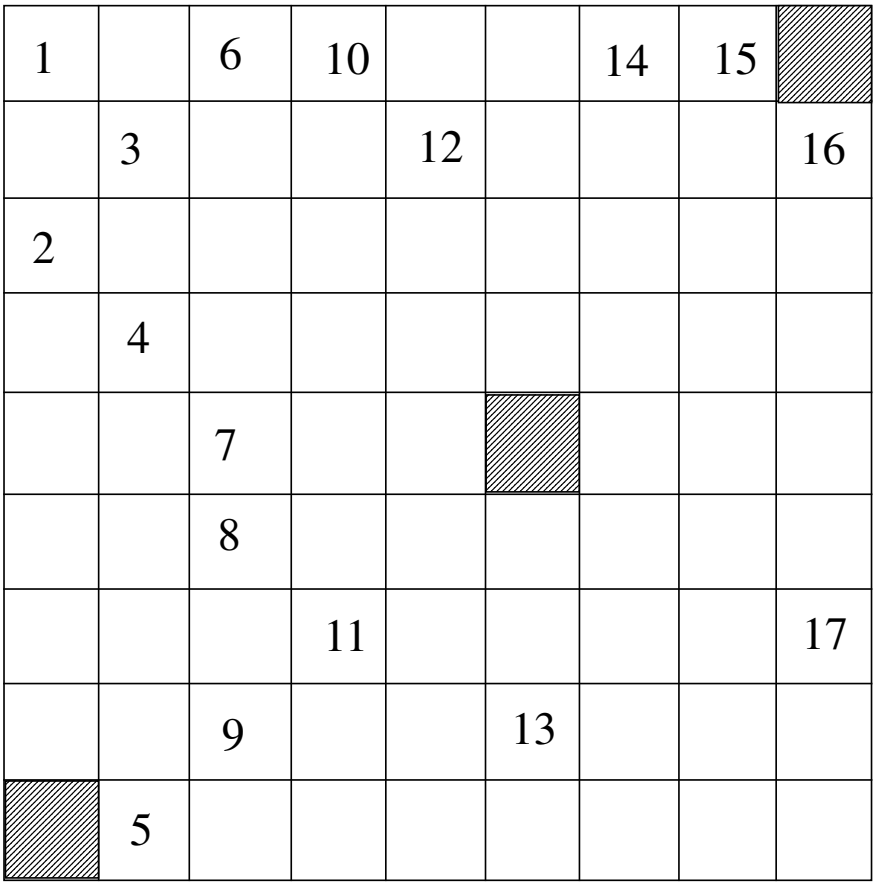
Dr. George Nirmal

DOWN

1. Numerous projection on the dorsum of tongue (8 Letters)
3. Who introduced the term height of contour (Dr. Laju. S) (7 Letters)
6. A lesion on the surface of skin or a mucous surface caused by superficial loss of tissue (5 Letters)
7. Curved bones forming the main portion of the bony wall of the chest (3 Letters)
10. Bicuspid value otherwise called (6 Letters)
11. Temporalis is a.....shaped muscle (3 Letters)
14. A physiological state of relative unconsciousness and inaction of involuntary muscle the need for which recurs periodically (5 Letters)
15. A liquid to revise the mouth wash that freshens breath (Dr. Rahul) (9 Letters)
16. An indentation at the edge of any structure (5 Letters)
17. One or Two muscular folds with an outer mucosa having a stratified squamous epithelial surface layer which surrounds the mouth anteriorly (3 Letters)

ACROSS

1. Burtonian line seen in (Dr. Rahul) (8 Letters)
2. An enzyme present in fruits that convert peptin to peptic acid (7 Letters)
4. A bundle composed of one or more fascicles of myelinated / non myelinated / both fibres usually accompanying with connective tissue or blood vessels (5 Letters)
5. Mineralized organic tissue forming the body of the tooth (5 Letters)
7. A measure of the dose absorbed from lonizing radiation (3 Letters)
8. Flaring portion of hip bone (5 Letters)
9. A sharp tooth (old term for tooth root) (4 Letters)
11. Artery that supplies submandibular salivary gland (Dr. Leeba Varghese) (6 Letters)
12. Prominent accesory cusp on the lingual surface of maxillary incisor (Dr. Rahul) (5 Letters)
13. Concept of lingualised occlusion was given by (Dr. Laju. S) (4 Letters)



General Rules and Regulations for CROSSWORD CHALLENGE

1. IDA Kerala State is the only organisation responsible for, this prize puzzle competition
2. will not consider entries submitted after the closing date and time.
3. The closing date and time for this competition is on the thirty first of march2017.
4. All contestants should participate individually in the event
5. The competition carries prize for 1st2nd3rdplace holders only
6. Contestants must mention their name and submitIDA membership number.
7. There will be a unique solution for a crossword will be declared as the winner.
8. In case none of the contestants are able to solve the crossword completely, the contestant with the maximum number of correct answers will be selected as the winner.
9. In the event of a tie, the contestants who have tied for the winner will be selected from them by lot system.
10. . Unnecessary overwriting, lack of clarity, incomprehensibility can lead to cancelation ordisqualifying the participant.
11. In case of any divergence regarding any clues or else, decision of the jury panel will be final.
12. Any type of false move/ adopting unfair means by any participant will lead to disqualification of him/her immediately.
13. All entries can send through whatsapp or by mail to editors office
14. . The winner of this prize puzzle competition will be decided by the Editor and CDE chairman
15. The decision, or decisions, of the Editorand CDE chairman in all and every matters, pertaining to this prize puzzle competition, are, final.

Completed Crossword send to the following address: The Editor, KDJ, Neelambikam, Attukal, Trivandrum - 695 009 editorkdj@gmail.com, 9447066100

* Jayanthi, ** Varun B.R.

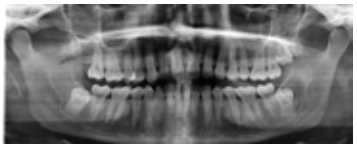
1. The most common type of oral lichen planus is
   a. Bullous
   b. Erosive
   c. Reticular
   d. Papular

2. Topical steroids are contraindicated in
   a. Recurrent apthous major
   b. Recurrent apthous minor
   c. Herpetiform ulcer
   d. Herpetic ulcer

3. Geographic tongue is also referred to as
   a. Erythema migrans
   b. Erythema multiforme
   c. Lupus erythematosus
   d. Erythematous candidiasis

4. An 8 year old boy presented with a swelling on the lower labial mucosa for the past 6 months. The swelling is soft, fluctuant and had a bluish hue. Histopathological examination revealed numerous blood capillaries in the connective tissue. The diagnosis is:
   a. Mucous extravasation phenomenon
   b. Mucous retention phenomenon
   c. Hemangioma
   d. Cystic hygroma

5. A 25 year old female patient presented with pain in relation to mandibular third molar region. OPG showed a well defined radiolucency attached to the neck of the impacted 38 and histopathology revealed a cystic lining resembling reduced enamel epithelium. The diagnosis is:
   a. Odontogenic keratocyst
   b. Gorlin cyst
   c. Eruption cyst
   d. Dentigerous cyst

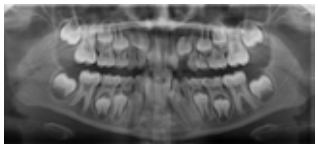


6. Bifid uvula is a minimal manifestation of
   a. Palatine tori
   b. Cleft palate
   c. Palatal cyst of newborn
   d. Median palatal cyst

7. Condensing osteitis is a form of
   a. Sclerosing osteomyelitis
   b. Suppurative osteomyelitis
   c. Fibro osseous lesion
   d. Cementoblastoma

8. Exuberant tissue surrounding an intro oral sinus opening that is associated with a non vital tooth is referred to as
   a. Phoenix abscess
   b. Periapical abscess
   c. Parulis
   d. Pyogenic granuloma

9. The most common congenitally missing tooth following third molars is
   a. Maxillary canine
   b. Mandibular canine
   c. Maxillary lateral incisor
   d. Mandibular central incisor



10. A 55 year old female patient complained of severe lancinating pain on the right side of the face. Intra oral examination did not reveal any abnormalities. The pain was relieved on taking carbamazepine. The most probable diagnosis is:
    a. Parotiditis
    b. Maxillary sinusitis
    c. TMJ dislocation
    d. Trigeminal Neuralgia

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

* Professor, Dept. of Oral & Maxillofacial Pathology, Azeezia Dental College, Kollam; **Associate Professor, Dept of Oral & Maxillofacial Pathology, PMS Dental College, Trivandrum
E-mail: drjayanthip@gmail.com

49th IDA Kerala State Conference

January 20th, 21st & 22nd, Kottayam

The 49th IDA Kerala State conference,KODACKK'17,hosted by IDA Central Kerala Kottayam branch was held on January 20th, 21st& 22nd in Hotel Windsor Castle Kottayam under the leadership of Dr Mathew Joseph as the organizing chairman and Dr Eapen Thomas as the Organizing Secretary. The theme of the conference was "Together Towards Tomorrow". The conference had an excellent attendanceof 2700 delegates from across the State,neighboring states and from other parts of the country. Kottayam has played host to such a didactic event after a long gap of 22 years.

The highlights of the conference include 10 Preconference courseswith hands-on on Friday 20th January, coordinated by Dr Augustine Cherukara and team,12 Keynote lecturescoordinated by Dr Antony P.G and team, covering all specialty from national and internationally renowned faculties, largest Tradefair with state of the art facilities coordinated by Dr Robin Theruvil and team, more than 200 scientific paper and poster presentations coordinated by Dr NithinPratap, Dr Vinesh and team, efficient and hassle free registration process coordinated by Dr Sherry Joseph, Dr Cherin John and team, two Gala banquets, cultural and entertainment programmes coordinated by Dr Mathew V Joseph and team above all, topped up with warm IDA CKK hospitality. Accommodation was arranged efficiently for most of the participants by Dr Renju Titus and team. Round the clock transport for all the participants were coordinated by Dr NidhishMoulana and team. Finance was managed efficiently by Dr Aby Jose.

Inaugural Ceremony: The inaugural meeting on 20th January was presided by IDA Kerala State President Dr Mohamad Sameer. The conference was inaugurated by Sri Anto Antony MP. The programme was attended by various other dignitaries. The formal function was followed by variety entertainment programmes and inaugural banquet.

Scientific Sessions & Deliberations: The scientific programme was inaugurated on 21st Saturday by Sri. ThiruvanchoorRadhakrishnan, MLA. "Dr Jacob Zacharia Memorial" Oration was delivered by Dr B Eqbal, former Vice Chancellor of MG University. He gave an inspirational and thought provokingtalk on "Kerala Health Model – from success to crisis". A book about late Dr Jacob Zacharia, compiled by Dr Joji Thomas was released on this occasion. There were 25 renowned speakers who enlightened the delegates about the current concepts and cutting edge technologies in dentistry with lectures and preconference courses.

Tradefair and expo was inaugurated by Sri. V.N Vasavan, MLA on Jan 21st Saturday morning. One of the largest tradeexhibition was arranged with state of the art facilities and lots of gifts for the participants. Certificate of participation was distributed to all the exhibitors. It was one of the most appreciated trade fair of all the times by both the delegates and the traders' community.

Meetings and Elections: The IDA HOPE AGM& IDA AGM was convened on 22nd January, Sunday. The process of elections of office bearers of 2017 and Installation of new team was done. Two State EC meetings were also held, one on 2oth Friday and other on 22nd Sunday.

Hospitality and Dinners:Central Kerala hospitality and rich Kottayam cuisine and all other varieties was offered in full throttle at the inaugural and the banquet dinner for all the delegates.






Association News

CDE Report

Dr Anil Thunoli
Chairman CDE

Dear colleagues,

First of all let me thank all of you for selecting me as the CDE chairman for the year 2017. With the support and co operation of all branches of IDA Kerala I promise I will try to fulfill my duties as the CDE Chairman and uphold the dignity of this post and our profession.

We have planned to conduct the first state CDE program on February 26 th. Moreover we are trying to increase the number of state level CDE s so that more members will get updated and be benifitted. And will make sure that the topic of the CDE s will prove to be useful for day to day clinical practice. CDE Wing also wish to conduct clinical courses in Basic Implantology and Lasers in Dentistry which will be in modules. And also I request all local branches to make the members updated with Asepsis and Basic Life Support once in every 2 to 3 years.

We wish to continue with the IDA faculty hunt program which was started by our predecessors. Applications to enroll as official speaker of IDA Kerala will be sent to all branches very soon. And we also wish to continue with more of Webinars..

As we celeberate the Golden Jubilee year of IDA Kerala CDE wings hopes to gift you all with a national and an international CDE program. We have approached the head office to request for the same.

Let me stop my pen with request to all members to attend as many CDE programs as possible and get updated to take your clinical practice to a higher level.

Your's in IDA

Dr Anil Thunoli

CDH Report

Dr. Rajesh V.
Chairman CDH

Message from CDH Chairman

Being elected as the CDH Chairman of IDA Kerala state is a great honour and privilege. The CHD wing of the state branch has been on a roll for quite a while now with the chairmen of previous years doing an excellent job of introducing innovative projects and programmes and implementing them to perfection. The projects like PRATHYASHA and MUKTHI gained appreciation from all corners and have helped boost the image of the association in the general public. It will be a great challenge for me to be a successful successor of the likes of Dr. Subash Madhavan and Dr. Joji George. One positive aspect is that the CDH wings of all the local branches are very active now and they have already started conducting excellent programmes and also launched projects of social importance. So, I have a great team to work with and hope the year will be a fruitful one as far as the CDH Wing of IDA Kerala state is concerned.

I am hopeful of continuing on with the successful ongoing projects like MUKTHI in the coming year also. We have already conducted three Teachers Training Programmes as part of this project in this year at Pathanamthitta, Kattappana and Kottayam. I thank Dr. Saji Kurian of IDA Thiruvalla branch, Dr. Sherry M Joseph and Dr. Linu Ninan of IDA Central Kerala branch for conducting classes at these venues respectively. The next stage of the programme in which classes will be held at schools of the local areas is scheduled to be inaugurated in the month of February. The sheer magnitude of this project requires more IDA members to rise to the occasion by being an active part of this project as faculties in the schools which are to be covered in this stage. Branch level co-ordinators are the need of the hour for conducting this programme successfully throughout the state. Hope we can finalise a plan of action in the next state executive committee meeting. Dr. Subash Madhavan and Dr. Mohammed Sameer have expressed their willingness to contribute to these projects in the next year also and it will be a great relief for the CDH Chairman.

The state level day observation programmes will be limited to nine this year and we have already received a few requests from branches to host these programmes. A few other projects for the year are waiting in the wings. I hope the State President Dr. Sabu Kurian and Hon. State Secretary can give guidance and directions.

Expecting whole hearted support from all the members of IDA Kerala State for a successful IDA year.

Thanking you,

Yours in IDA,

Dr Rajesh.V

IDA Hope Report

Dr. Joseph C.C.
Hon. Secretary

Hope to Convince not to Convinct

Someone had blundered
Theirs not to make reply
Theirs not to reason why
Theirs but to do and die
(The charge of the light –Alfred Tennyson 1880)

Hope is conceptualized with you (the dentist)at the pivot. The word itself resonates positiveness. The motto of HOPE is to promote quality ethical practice and protect the dental surgeon during a litigation as inadvertent and mistakes are quite common in dental practice. Your patient is armed with actual and fictious information from different reliable and unreliable sources. If we need to help you in an eventful situation you need to help us with a quality transparent practice with good record keeping.

Hope has an immediate positive answer.

Hope is to convince your patients that you are right in thought and deed, because we are with you are the PIVOT of Hope

Not you but- we should understand that the days of Lord Tennyson are gone-

Theirs not to reason why,
Theirs but to do and die…
are obsolete now

Your patient is now armed with all sorts of factual and fictitious information from every corner and has the power to reason.

At this point ida Hope needs your support; to be with you always and the support is the transparency of the treatment, to cut diamond with diamond.

Transparency is a multi compound concept with mal and bene qualities, like knowledge, skill, sincerity, tenderness, sublimation, greed, empathy, jealousy, social contacts, politics, experience, communicative skill, body

language, mutual confidence, clarity, voice modulation, and the list goes on.

Nurture the good and rip off bad so as to make your practice more transparent.

"The more transparent you are
The more acceptances you have"

This is based on the assumption that the winter is highly opaque and the reader is translucent to transparent in all their works.

Here we begin with fables, parables, sweet and sour memories of the past which is useful to anyone at least once in life, I am contented and between each and every lines you should read

"The greatest trust between man and man is the trust of giving counsel"

Recently there is a spurt in Indemnity cases IDA HOPE is handling more often it is observed the litigation has risen due to inapt handling of treatment procedures which could have been easily avoided through better counseling of patient, better understanding of patient need, opting for better treatment procedures, maintaining proper records of treatment rendered with patient consent for treatment as a must. Our members understand in case of a litigation by patient it is easy to prove a wrong doing in treatment simply because these days many options for diagnosis and verification of treatment like better radiography and imaging are available.

A large percentage of litigation is due to Root canal treatment failure, were again it is observed has risen out of inadequate treatment. Example Pic below.

As the IDA HOPE secaratry it s my sincere request to all members to follow instructions

1. Follow proper procedures to avoid and minimize the claims.
2. Maintain proper case history, Write details of clinical findings, Diagnosis,
3. Advice pre and post operative instructions properly.
4. Explain the treatment options, advantages, disadvantages and complications of each.
5. Medical / Dental / Allergy History (even if no relevant history – note that) in the case sheet
6. Avoid unnecessary assurances and words like Guarantee, life long, permanent etc and do not give any guarantee cards to Patients.
7. Inform patient and relative or bystander about treatment complications.
8. Pre operative IOPA is essential for RCT especially in case in history of anterior trauma
9. Give a short brief about medicines prescribed
10. Renew your clinic registration, dental council registration, IDA & HOPE Membership on time. Ensure that your consultants and assistants maintain the same. - Keep copies of their renewed certificates in the clinic
11. Advice proper Investigations prior to surgery. Do not undertake any surgical procedure without proper pre operative investigations.
12. Get a singed consent from patient or bystander, Also note bystanders name and relation with the patient.
13. Get radiographs, other investigations, consents from relevant medical specialist in writing whenever necessary.
14. Be attentive to the treatment while doing procedures - Avoid phone calls during procedure
15. Do not hesitate to refer cases for a second a opinion or a specialist advice.
16. Do not render wrong or inappropriate treatment. Our philosophy should be DO NO HARM,
17. Behave calmly with patient and relative and never provoke the patient or tell them to go for case if they are aggrieved.
18. Listen to the patients complaints carefully and try to redress the complaint and convince the patient and bystander.

Proper records and case history will help us to defend effectively in majority of the indemnity cases..

All dentists are advised to maintain IDA HOPE prescribed format for maintaining case records or computerize the clinical records and give printed prescriptions to the patients.

HOPE – HIGHLIGHTS

Premier benefit programme of IDA Kerala State aimed for the members of all branches

Benefits : -

Social security

- Death Benefits of upto 10 lakhs for the dependence
- Accident and permanent disability benefits of upto 15 lakhs.

Professional protection

- Legal support in medico- legal issues
- Monitory assistance for court cases.
- Compensation upto Rs.2,00,000 in convicted cases.
- Eligibility for joining Hope Medi.

IDA Hope Joining formalities.

Joining fees corresponds to age category.

Upto 30 yrs.	-	Slab 1
31 – 40 yrs.	-	Slab 2
41 – 50 yrs.	-	Slab 3

Eligibility to join ceases beyond 50 years of age.

Eligibility to join Hope :

- Bachelor Degree in Dentistry from any recognised institution in the Indian union.
- Valid registration from the Dental Council.
- Certificate to verify proof of age
- Valid membership in any local branch in IDA Kerala State certified by Branch Secretary.
- Documental proof of address. For any redressals contact your local branch Hope. Representative. For further clarifications, Contact IDA Hope State Office.

HOPE MEDI – HIGHLIGHTS

Medical Insurance Policy (Group Insurance Format) Group Insurance - Major advantages

- - More members, means greater bargain - greater the advantage.
  - Policy premium in shared and hence the lowest figure quoted
  - Broader parameters included for maximum coverage.
  - Minimum exclusion applicable for payment denial.
  - Premium paid is eligible for income tax exemption under section 80D
  - Can be used as leverage for negotiating for other avenues to the brought under insurances other than health.

ADVANTAGES FOR HOPE MEDI

- All Hope Members are automatically eligible.
- Tailor-made policy for dental fraternity.
- 2nd term running with minimum glitches and complaints.
- No age limit for joining.
- No change in premium based on age.
- No medical checkups prior to joining \
- All pre existing illness covered.
- No additional premium for pre existing illnesses.
- Hospital room rent provided*
- Cashless facility available*
- Standard treatment charge reimbursed*
- Parents of primary members are also covered.
- No age limits for parents
- Pre existing illness of parents also covered*
- Additional expenses bound to occur for treatment in higher centres also covered*
- Premium subject to revision each year in accordance to cash out flow.

Nearly 1,50,00,000 disbursed to our members as claim settlements in the year 2015-16. Not a member yet ? Join Hope Join Hope Medi today. Contact IDA Hope Office for assistance for your branch Hope Representatives.

Claim settlements assistance : 9447608146

Chairperson
Dr.Mercy Joji
Neyyan's House, Arthat.P.O
Kunnamkulam-680521
Mob : 9495416452
Email :mercymathewm@gmail.com

WDC Report

Secretary
Dr.Sapna Sreekumar
Associate Professor
Dept.of.Periodonits
Pariyaram Dental College
Pariyaram.P.O, Kannur,
Mob : 9496237720
Email : sapnamds@yahoo.co.in

WDC of IDA Thrippunithura, Kollam, Malabar, Coastal Malabar, Pathanamthitta & Kunnamkulam branches secured IDA Kerala State Awards during IDA Kerala State conference 2017, KODACKK 2017 at Kottayam.

WDC of IDA Ernad, Attingal, Kochi, North Malabar, Palakkad & Mavelikkara branches conducted various activities during 2016-2017.

WDC IDA Kerala State has secured best outstanding performance and contribution National award by IDA head office for 2016-2017.

Forth Coming Event

- WDC of IDA Kollam has planned to conduct a Cancer detection cum awareness programme for women and hepatitis vaccination in association with WDC of IDA Kerala State tentatively in the month of March.

Wayanad Branch

The installation Ceremony of IDA Wayanad branch for the year 2017 was held at THE HILL DISRICT CLUB, Sulthan Bathery, Wayanad on 5th FEB. Dr. P. Rajendran, Direrctor Agriculture Research station, Ambalavayal was the chief guest and Dr Sabu Kurien, President IDA Kerala State was the guest of honor. The meeting was well attended by members of wayanad branch, neighbouring branch and other organisations. Dr Sabu Kurien installed Dr George Abraham as the president of IDA Wayanad for the year 2017 and the president installed his team of office bearers. Meeting was followed by cultural programmes.

Tellicherry Branch

Installation of New office bearers 2017: Installation of office bearers of IDA Tellicherry Branch was held on 5th February 2017 at Lions Hall, Thalassery, program started at 7pm. Dr. Alias Thomas, Past IDA National President was the Chief Guest. Dr. Ravindranath was the guest of honor. Dr. Ratnakaran welcomed the gathering. Dr. Alias Thomas installed Dr. P urushothaman as the president of IDA TellicherryBranch. Other office bearers were also installed. Felicitations were given by Dr. Roopesh, Dr. Saji Paul, Dr. Sajeev Kumar, Dr. Johny Sebastian. Mementos and gifts were presented. Dr. Libin Chandra, the secretary delivered vote of thanks. Installation was followed by entertainment programmes, music night etc.

Malabar Branch

Installation of the office bearers of IDA MALABAR Branch 2016 -17 was held on 15th January 2017 at Hotel Malabar Palace Kozhikode at 6.30pm. Dr. Binu Purushothaman was installed as the new president of IDA Malabar Branch by Dr. Mohammed Sameer (Hon President IDA Kerala State) was the Guest of honour and installation officer. Outgoing President Dr. Dinesh KR handed over the President's Collar to newly installed President. Followed by the installation of other office bearers. Shri. Thottathil Raveendran (Hon Mayor Kozhikode) was the Chief Guest of the occasion, who innagurated the Organ Donation campaign, the new project of IDA Malabar branch. Guest of Honour Dr. Suresh Kumar Hon. Secretary IDA Kerala state released the IDA Telephone Directory with blood groups. Felicitations were given by Past Presidents IDA Kerala State Dr. Joy Philip, Dr. Vishwanath, Dr. Antony Thomas, Dr. Nizaro Siyo. Many important Dignitaries like Dr. Subhash Madhavan CDH Convenor IDA Kerala state witnessed the occasion including members from other neighbouring branches like Malappuram, Vadakara and North Malabar. Vote of Thanks were delivered by Dr. Hussain Manikfan Hon. Secretary IDA Malabar branch followed by dinner and many colourfull cultural programmes by members and their families.

Pathanamthitta Branch

Installation of IDA branch for the year 2017 was held on 1st January 2017 at Hotel Hills Park, Pathanamthitta. Chief guest of the program was Dr Sameer PK StatePresident of IDA. President Elect of IDA Kerala state, Dr. Sabu Kurian was the guest of honor. Dr. Sameer PK inaugurated the program and activities for the year 2017. President Dr Manoj M Kumar installed the newly elected President Dr Hema Rajesh and his team of office bearers. The logo for the CDH,PUNYAM was released by Dr Sabu Kurian. Annual edition of the journal "EXRACT" was released by President Dr. Manoj M Kumar by handing over the journal to Dr. Antony John Mathew. 100 individuals attended the program including the branch members, their families, neighboring branch members and special invitees from various clubs like Lions and JCI. IDA members from neighboring branches like Central Kerala, Kottayam, Mavelikara and made their presence to make the event a grand success, the meeting was followed by dinner, fellowship and various cultural programs by members and their families.

Thiruvalla Branch

The Installation of IDA Thiruvalla was held on 27 November 2016 at 6:30pm at Vaidyan's Auditorium Manakichira. The Chief Guest was Adv. Mathew. T. Thomas(Minister of Water Resources Kerala State), Dr Samuel. K. Ninan (Past President IDA Kerala State) was the Installing officer. Metropolitan Bishop Dr. K.P Yohannan and George Mammen Kondoor was the Guest Of Honour. Dr. Saji Kurian took oath as President, Dr. Simon George as Secretary and Thomas Jacob as Treasurer. Other Office Bearers were Dr. Saji Cherian President Elect, Dr. Seema Joseph CDE Convener, Dr. Mathew P.C CDH Convener. Past President Dr. Rajeev Simon K addressed the gathering and congratulated the Office Bearers for their support. Dr. Saji Kurian after taking oath as President addressed the gathering and emphasised on unity and friendship. Mementos were given to students who have completed 10th, 12th and Professional Courses. Representatives from various organisations felicitated Dr. Saji Kurian and his new team. Dr. Simon George Secretary Proposed Vote of Thanks. It was followed by a Sumptuous Dinner.

Kottarakkara Branch

IDA Kottarakkara had its installation ceremony on the 14th of January 2017. The new President Dr. Sandeep N took office from Dr. Paul. K in a very simple and solemn function attended by members and their family. The venue was hotel Kumar Palace, Punalur.

Nedumbassery Branch

Installation of Prof. Dr. PJ Antony and Team of Office bearers took place, in the presence of Chief Guest, Dr Shaji K. Joseph, president Kerala Dental Council and Guest of Honor, Dr Subash K. Madhavan, former CDH and Present Vice President. The theme of year 2017 is "Education, Empowerment & Entertainment"

Tripunithura Branch

The installation of IDA Tripunithura was held on January 14, 2017 at Hotel Hill Palace, Irumpanam. The State IDA President Dr. Sameer P. T. was the chief guest and the State Hon. Secretary Dr. Suresh Kumar was the Guest of Honour. Dr Saji K.took oath as the President,Dr. Sabu K.R. as the Hon. Secretary and Dr. Anoopkumar as the Treasurer. Past President Dr. Biju C.N. congratulated his team and thanked the members for their wholehearted co-operation. The branch activities was inaugurated by Dr. Sameer P.T.. The newly introduced cultural programme 'Chilambu' was inaugurated by Dr. Suresh Kumar. The WDC team was honoured for getting the award for the best WDC in the state. It was then followed by felicitations, and vote of thanks by Dr. Sabu K.R.. Installation ceremony was followed by entertainment programmes and dinner.

Quilon Branch

INSTALLATION CEREMONY & FAMILY MEET-2017

The 25th installation ceremony and family meet of IDA Quilon branch was held on 14th January 2017 at The Hotel Sea Palace kollam. The president Dr Nizamudeen and his team of office bearers were installed. The chief guest, LIMCA BOOK OF RECORDS holder Dr N N Murali MBBS MS inaugurated the meeting and president elect of IDA Kerala state Dr Sabu Kurien was the guest of Honour.

Malanadu Branch

The installation Ceremony of office bearers of 2017 IDA malanadu branch was held at Hotel Kabani international, Muvattupuzha on 29.01.2017. Dr. Arun George presided the function. Dr. Shaji K Joseph, President Kerala Dental council was the chief guest and he installed the incoming president Joby j Parappuram and his team. Dr. Alias Thomas IPP Head Office distributed Paul G vadathu and DrP I kochukunju Memorial Awards to meritorious students of the colleges coming under ida malanadu territory. Dr. Ciju A Paulose president elect ida kerala state branch Inaugurated the IDA malanadu activities for the year 2017. Dr. Rony David Raj, Actor inaugurated the silver jubilee year projects. Charter members were Honoured during the function. Dr. Litto Manuel presented the secretary's report. Dr. Jayan Jacob Mathew IPP welcomed the gathering and Dr. Terry Thomas President Elect proposed vote of thanks. The meeting was followed by gala banquet and entertainment programmes. Around 200 members attended the programme.

Trivandrum Branch

Installation Ceremony 2017

The installation ceremony of IDA Trivandrum Branch for 2017 was held on January 29,2017 at Hotel Pattom Royal,Trivandrum.

The Chief Guest of the event was Dr. Asha Thomas I.A.S and Guest of Honour was Dr. Sabu Kurien,President IDA Kerala State. Felicitation was given by Dr. Suresh Kumar,Hon. Secretary IDA Kerala State.

The installation of the new President Dr. Sony Thomas was done by Imm: Past President Dr. Mathew Jose. The President installed his team of office bearers. Dr. Aseem Hassali,Hon. Secretary IDA Trivandrum delivered the vote of thanks.

The function was well attended by 300 guests including IDA Members,their families and other distinguished guests. The installation ceremony was followed by gala dinner and various entertainment programmes

Attingal Branch

Installation ceremony of IDA Attingal branch held at LakePalace Kadinamkulam on 11/12/2016. Dr Deepak S Das has installed as new President. Dr Anil Kumar D and Dr Arun as Honarary Secretary and Treasurer respectively.

Dr Sabu Kurian President Elect KSB was the chief guest. Dr Sreejith Past President of IMA was tha guest of Honour.

Installation ceremony was conducted along with family get together. 72 IDA members with their families attended the programme

Valluvanad Branch

IDA VALLUVANAD BRANCH installation of new president, Dr. SAJOY.C. MATHEW AND HIS TEAM of office bearers was conducted on 28th Saturday 2017 at GAZEBO HERITAGE, KULAPULLY. Dr. SURESH KUMAR.G(Hon. Secretary,IDA Kerala state) has kindly consented to be the chief guest.

Dr. MOHAMMED SAMEER P. T(immediate past president,IDA kerala state) was the installation officer. Dr. SUBASH MADHAVAN(1st vice president,IDA kerala state) was the guest of honor. Dr. rajarajan (treasurer, IDA valluvanad) welcomed the gathering. Dr. Vishaksreekumar, introduced the new president.

Branch report was read by Dr. Shoukathali,(secretary IDA valluvanad). Presidential awards given to Dr. shoukathali, Dr. Rajarajan, Dr. Subashmadhavan, Dr. Haristp, Dr. Deepakkalathil and Dr. Sreeshgopal for the outstanding performance in the year 2016. New president Dr. SAJOY.C. MATHEW is been installed by taking the oath administered by installation officer. After that the new team of office bearers was installed by the newly installed president

The new president was felicitated by members from rotary club shornur and pattambi. Vote of thanks delivered by secretary. Then meeting adjourned for dinner and entertainment after national anthem

about 100 members participated in the function including family.

Coastal Malabar Branch

The installation ceremony was held on december 11th 2016 at yamunatheeram resorts kanayi, kannur. Dr a. V. Sreekumar welcomed the gathering and secretary dr rahul nandakumar presented the report of activities for the last year. President dr. Suja vinod in her farewell address thanked each member for their overwhelming support and installed dr. Rajesh. E as new president of our branch. Dr. Rajesh. E intallated the new office berarers for the year 2017.

Hon. Secretary of ida kerala state dr. Suresh kumar.G was the chief guest for the function. Past president, ida kerala state dr santhosh sreedhar and dr. K. T. Suresh were the guests of honour. Mr. Prabhakaran, senior manager, federal bank payyanur and dr anil. M, president spick felicitated the gathering. Hon. Secretary dr. Sreejan.C.K. Proposed the vote of thanks.

Mavelikkara Branch

The installation ceremony of the new office bearers of IDA Mavelikara was held on 15th Jan 2017 at Hotel Sougandhika Residency, Haripad. Dr. Ciju A Poulse was the Chief Guest. Film Director Mr. K. Madhu was the guest of honour. Actor Mr. Ullas Pandalam was the Special Guest. D r Seethi Begam Immediate Past President delivered the welcome speech. Dr. Ciju A Poulose installed Dr. Sajeev S as the new President of IDA Mavelikara for the year 2017. The official program was followed by an Orchestra conducted by Mr. Anilkumar B'lore and team which was followed by dinner. Around 160 members and family attended the program.

Alappuzha Branch

The report of installation program of IDA Alappuzha office bearers for the year 2016-17

The installation ceremony of the new office bearers for the year 2016-17 under the leadership of President Dr Rupesh was organized at the rotary club of alleppy east hall on 18.12.2016 from 7pm with the IDA Kerala State President Elect Dr Sabu Kurien as the chief guest.

The function began with a ceremonial parade of the chief guest and other dignitaries followed by lighting the ceremonial lamp. Once the dignitaries occupied their seats on the dais President Dr Joe called the meeting to order and also delivered the welcome speech. In the absence of Hon Sec Dr Tijo Alex the annual report was presented by Asst Joint Sec Dr Mili James. This was followed by presidential address by Dr Joe Bijoy and handing over a token of appreciation to all ALOHA 16 chair persons by Dr Joe. Before the installation of new office bearers, to celebrate the Christmas Season cake cutting was done by the chief guest of the day.

The introduction of the incoming president Dr Rupesh was done in a memorable manner by none other than Dr Venugopal G following which the new president was installed in office by the chief guest of the day Dr Sabu Kurien. The newly installed president conveyed his dreams and activities planned for the branch in the coming year in his acceptance speech. President Dr Rupesh installed his team of office bearers.

Introduction of the Chief Guest Dr Sabu Kurien was done by the senior member and advisor of our branch Dr Chandy Joseph and it was followed by the address by the chief guest. Our member and past president Dr Venugopal G was appreciated by adorning a ponnaada by president Dr Rupesh for his exemplary works in the field of arts, and for his achievement in writing a playback song for a new Malayalam movie. The senior members of our branch who have completed 25 years of practice was honored by the president Dr Rupesh.

There wre many eminent personalities from different walks of life who felicitated the new leader as well as his team of office bearers

In the absence of Hon Sec Dr Tijo Alex, Asst Sec Dr Mili James delivered the vote of thanks.

The meeting was adjourned by President Dr Rupesh after the national anthem for dinner & fellowship.

Malappuram Branch

Installation ceremony of IDA MALAPPURAM for the year 2017 -18 done on 8 january 2017 at hotel rydges inn kottakkal 8 pm

IDA KEARLA STATE BRANCH President Dr Sameer P T was the chief guest for this function. The meeting started with prayer. The president Dr sujith M J welcomed the gathering and deliverd the presidential adreess

The secrtary Dr muhammed haris k t presnted the secrtary's report. Dr bushara introduced the chief guest Dr sameer p t. Dr Deebu J Mathew intoduced the president elect Dr SASIKUMAR T P. Chief guest addressed the gathering and installed the new president.

The new president adressed the function and spoke in detail about the planns and programmes in his acceptance spech. The president Dr sasikumar installed the new office bearers of ida malappuram. Hon secretary Dr mahesh k joy deliverd the vote of thanks. President adjourned the meeting for dinner and cultural programmes. More than 50 members with thier family attended the function

North Malabar Branch

INSTALLATION CEREMONY OF IDA NORTH MALABAR BRANCH 2017

The installation ceremony of office bearers of IDA North Malabar Branch for the year 2017-18 was held on January 24th at Sunshine Royal Hertage, Kannur. The chief guest for the day was Sri P C Vijayarajan, Chairman, Bharathya Vidya Bhavan and Dr O V Sanal,Member,Kerala Dental Council was Guest of Honor. During the day Dr. Valsalan K V. the incoming President, IDA North Malabar branch and his team of office bearers were sworn in. The ceremony was followed by variety entertainment and dinner.

Central Kerala Kottayam Branch

Installation Ceremony: The Installation of Dr. Linu M Ninan and his team of office bearers were held on Decenber 4th 2016 at Kottayam Club Annex at Kumarakom. Dr. Sabu Kurian IDA Kerala State President Elect was the Chief Guest., Adv Sri Suresh Kurup MLA, Dr. Shaji K Joseph Kerala Dental Council President, Dr. George Varghese Principal, Gov Dental College Kottayam were the Guests of Honours.

Ernad Branch

Ida ernad installation program was conducted on 5th Sunday evening 6:30 at hotel Hiton Perinthelmenna. Installed Dr sangeetha B as president of Ida ernad. Dr suresh kumar(Hon secretary)of Ida kerala state was cheif guest. Mr O Abdulla (senior journalist)was guest of honour. Dr Subhash madhavan (1st Vice President)of ida kerala state was guest of honour. Installation followed by cultural programs by members. Office bearers are Dr Sabhish sivadas (Hon secretary), Dr shanib(CDE chairman),Dr assainar (cdh chairman),Dr muhsin (Treasurer), Dr Hifz (join secretary),Dr sumod (1st Vicepresident),Dr sanal (2nd Vicepresident)

Kasargod Branch

1. Executive committee meeting was held on 27th December 2016, at IMA hall Kasargod. Issues and programmes to be conducted in the year 2017 were discussed.
2. Installation ceremony was conducted for the office bearers of 2017 on 8th January 2017, Sunday, at IMA hall Kasargod
3. CDE programme was conducted on Basic life support on 8th January 2017, Sunday at IMA hall Kasargod. Total of 51 members participated in the programme.

Palakkad Branch

Installation cermony of president Dr Sharath K B Menon and new office berears of IDA Palakkad branch for the year 2017 held on 8 th jan 2017, at Udaya Ayurvedic Resort,palakkad.

President Dr Sharath K B Menon

Secretary Dr Shivaramakrishnan S Iyer.

Chief guest Dr Jaganmohan (cardiologist) presided over the funtion.

Dr Allias thomas (past president IDA HO) was our installing officer.

Official part of the cermony was followed by variety entertainments and dinner for all the invities.

Kochi Branch

This is to inform you that ida kochi branch, had its installaion of new office bearers(2016-17) on 17/12/16 at ima house,kaloor,kochi,kerala.

Dr Mohd Sameer P T - IDA Kerala state president was he chief guest of the day.

Dr sabu kurien (president elect ida kerala),Dr shaji k joseph (president KDC) and mrs sheela kochouseph was guests of honours.

Installation ceremony started at 7.30 pm after the AGM, around 200 members of ida kochi were present.

The newly installed office bearers of ida kochi 2016-17 are the following

PRESIDENT - DR ANJANA G; PRESIDENT ELECT - DR ARUN BABU; IPP - DR JAYAKUMAR; 1s vice president - DR SAJIL JOHN; 2 vice president - DR BINDHU RACHEAL; Hon SECRETARY - DR BALU SOMAN; Joint Secretary - DR NEVIN THOMAS; Asst Secretary - DR DOMINIC ALEXANDER; TREASURER - DR AJIT P; CDE convenor - DR PRASHANH PRATAP; CDH convenoor - DR JITHIN; Editor - DR VIVEK NARAYAN; Rep to state - DR ANJANA G, DR ARUN BABU, DR AJIT P, DR BALU SOMAN,DR JAYAKUMAR, DR SIBY T CHENNANKARA, DR VINOD MATHEW, DR AFZAL V A, DR K R VIJAYASHANKAR; Lady Reps - DR MEERA GOPALAKRISHNAN AND DR SEEMA GEORGE

Executive committe members - Dr Mathew varghese, Dr Noorudeen A M, Dr Prashanh antony, Dr Sajith, Dr Tony cherian, Dr Lijo paul and Dr Vinod thampy

Advisors to Executive comitte - Dr K L Baby, DR V I Paul,Dr Jose julian, Dr Vijaya shankaran AND Dr P C Sunil.