



2nd MEGHALAYA STATE DENTAL CONFERENCE 2018



Progressive Dentistry... A Smile And Beyond

IDA Meghalaya State Branch
Venue : City Hut Dhaba, Shillong
Date : 6th October, 2018

IDA, Meghalaya State Branch



IDA Meghalaya State Branch



SOUVENIR

2nd Meghalaya State Dental Conference 2018

“Progressive Dentistry ... A Smile And Beyond”

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Shri. A.L. Hek

Minister I/c
Health & F.W., I.P.R., Arts & Culture
Meghalaya, Shillong.



सत्यमेव जयते

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MESSAGE

It gives me an immense pleasure to learn that the Indian Dental Association (IDA) is organizing the 2nd State Dental Conference on the 6th October, 2018. the Association which was formed in the year 2006 comprises of dental surgeons serving under the Government of Meghalaya and private practitioners in different areas of the State have done tremendous job in the past 10 years.

The hard work and strong determination of the doctors in and around the state both rural and urban areas to strive and provide good and achieve oral health for all the people and creating oral health awareness to all is the greatest way of moulding the oral education to each and every child and to the family as a whole.

I congratulate all the members of the Indian Dental Association for organizing such an event and I urge upon all the people of the state to join hand together in wishing a Celebration a grand success.

(A.L. Hek)

Shri. P.W. Ingty, IAS

Additional Chief Secretary,
Government of Meghalaya,
Shillong.



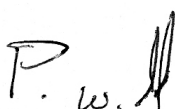
सत्यमेव जयते



MESSAGE

It gives me a great pleasure to know that the 2nd State Dental Conference, Indian Dental Association (IDA) Meghalaya State Branch is being held on the 6th of October, 2018. We hope that this Dental Conference will go a long way in taking the Dental Service provided to the public of the State to a higher level.

I wish the Conference all success.


(Shri. P.W. Ingty, IAS)

Dr. (Mrs). B. Mawlong

Director of Health Services (MI)
Meghalaya, Shillong.



सत्यमेव जयते



MESSAGE

*I am immensely pleased to learn that the Indian Dental Association Meghalaya State Branch is organizing the 2nd State Dental Conference at Shillong on 6th October, 2018 with the theme **"Progressive Dentistry..... A Smile And Beyond"***

I hope the deliberation of the Conference will benefit the profession of the State and also inspire great commitment in bringing about delivery of dental excellence to the people of the State.

On this special occasion, I convey my best wishes to all the members of the Association and also wish the Conference a grand success.

Dr. (Mrs). B. Mawlong



Dr. B.R. Bhuyan, MBBS, BDS, MDS, FICD

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MESSAGE

Dear Dr. N. D. Mawrie,

Thank you very much for asking me a good will message for the souvenir being published on the occasion of the 2nd Annual State Conference of I D A , Meghalaya State Branch on 6th October this year. I take immense pleasure in recollecting my memory of forming a branch of Indian Dental Association in 1969 with only 11 members hailing from different states of the North East region. Today, I am proud to see that besides the original I D A state branch of Assam; all the States of this region are having their own I D A branches. To have a close association of all the I D A branches of the N E States; we formed a coordination committee in 2010. We are getting together in the North East Regional Dental Conference being hosted by the participating states under the aegis of the Coordination Committee. I pleasantly remember the Regional Dental Conference organized by the I D A , Meghalaya State Branch in 2011.

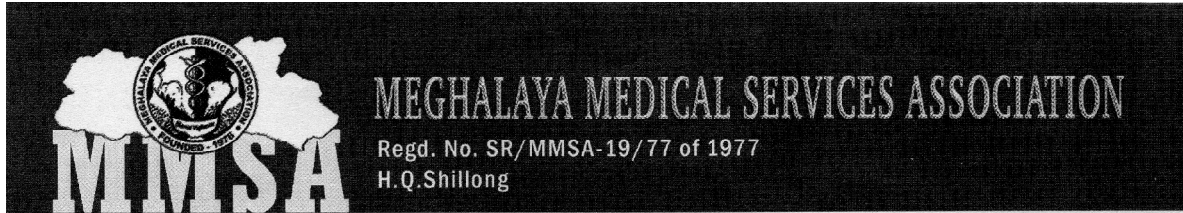
You may be aware that all the I D A Branches of this region join hands for organizing the F D I C D E , 2018 at Guwahati on 24th & 25th November, 2018. There will be series of lectures and demonstrations to be delivered by a host of imminent speakers of national and international repute. I take this opportunity to invite all the members of the I D A , Meghalaya Branch to actively participate and register their names for successfully hosting the programme.

With this few words, I extend my heartiest good will and wish a grand success of the conference.

B. R. Bhuyan
(B. R. Bhuyan)

President, Coordination Committee
I D A , State Branches of N E Region





MESSAGE

The Meghalaya Medical Service Association (MMSA) is glad to learn that, Indian Dental Association, Meghalaya Branch, is holding the 2nd State Dental Conference at City Hut Dhaba, Shillong on the 6th October 2018 and a souvenir is being brought out to commemorate the occasion.

We are sure the distinguished Dental surgeons assembling in this scientific forum will deliberate upon various issues with the current development in the field of dentistry and come out with solutions which will be beneficial to the patients in the state and the region as a whole.

We wish the organisers all the success in their endeavour towards the grand success of this scientific event, and hope that all participants will greatly benefit from this conference.

(Dr. B. Pohchen)
President, MMSA

(Dr. M. Surong)
General Secretary, MMSA



Dr. Nathaniel Kharumnuid

President of Indian Dental Association (IDA)
Meghalaya State Branch, Shillong.



MESSAGE

Greetings to all my friends and colleagues,

I take this opportunity to thank all my colleagues and friends who have come together to organise the 2nd State Dental Conference 2018.

It has been a long gap since we had our first State Dental Conference in Shillong.

IDA Meghalaya State Branch was started on August 17, 2006, which was initiated by Col. Dr. Darekar.

Since then our association has been organising a number of CDE and CDH Programmes in our State, through which we have been able to update our practices with modern technology and knowledge as well as awareness programme relating dentistry in schools and other various social activities.

I am honoured to have a team of dedicated EC members, who have worked hard to make this event successful.

This programme will give each and everyone of us an opportunity to expand our knowledge in our day to day practice for better services to our society.

Under the banner of IDA Meghalaya State Branch, we have been able to host the North East Dental Conference on 17 and 18 October 2011 which was a huge success.

I Sincerely call each and everyone of us to come together to make this conference successful.

As our Motto state "Progressive Dentistry.....A Smile and Beyond"

With these few words, I wish this Conference a grand success.



Dr. Kyrpang Passah

General Secretary, Indian Dental Association (IDA)
Meghalaya State Branch, Shillong.



MESSAGE

Dear Colleagues,

Let me begin by Welcoming you to the "2nd Meghalaya State Dental Conference" we from the Meghalaya I D A State Office, hope you have an interactive platform with our Esteem Speakers who will enlighten us with their expertise in their respective subject and wish you have a wonderful evening with other colleagues during the banquet.

The need to update ourselves in an expanding world of dental science needs no exaggerated Emphasis. It goes without saying that to be competitive, we need to constantly keep ourselves abreast of the latest development, in dental science to enhance knowledge and skills which will have substantial use in day today clinical practices.

Toward, this objective, we the I D A Meghalaya branch Focus on dental education through C D E Programs to the dentists in our State and conducting C D H Programe to create dental awareness to the general public.

I thank each and every one of our sponsors, who has contributed toward the 2nd Meghalaya State Dental Conference and to our Esteem Speakers who had spared their value time to be with us for the conference.

I wish the 2nd Meghalaya State Dental Conference a grand success.

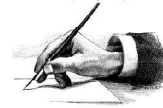
K hublei Shibun.

Dr. Kyrpang Passah





FROM THE EDITOR'S DESK.....



Greetings Everyone !!!

Once again from the office of I D A Meghalaya B ranch, I extend a warm welcome to all our members and non members.

Ten years being so closely associated with the branch, it is indeed a pleasure to see our family grow with each passing year. As they say "the more....the merrier".

Time has flown no doubt and from the time the Meghalaya chapter of the Indian Dental Association was formed till date, we have come a long way.

The past years have showed us organizing our 1st Meghalaya State Dental Conference, followed by mega events like hosting the N.E. Dental Conference, organizing a Dental Council Meet and of course multiple CDE programmes.

*Conferences and CDE programmes helps us to upgrade ourselves in our field which is always evolving and progressing every day. To keep ourselves abreast with the latest developments, it is important to attend such programmes which serves as a platform to hear and exchange expertise with our friends and colleagues. Thus the motto for this conference being **"Progressive Dentistry...a smile and beyond"**.*

A souvenir is being published to commemorate the event. Therefore I take this opportunity to thank all our well wishers for their encouraging messages, doctors for contributing articles, guest speakers, participants and all those who have been associated with me in this souvenir.

And finally as I end my editorial note, it would be incomplete on my part not to thank Mr. Donovan Wanshong of Vanrica Printing Press for being so patient with me as I sit to do the layout for the magazine.

Last but not the least, though this is my third editorial work for our association, am yet to be the "perfect editor". Hence may all my short comings be forgiven.

I wish this conference a grand success.

Thank you

Khublei Shibun

Mitela

Dr. N.D. Mawrie





2nd Meghalaya State Dental Conference Committee (Committee Members)

ORGANISING COMMITTEE



ORGANISING CHAIRMAN
DR. NATHANIEL KHARUMNUID
9856041885/8837368262



ORGANISING SECRETARY
DR. KYRPANG PASSAH

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DENTAL COUNCIL OF INDIA MEGHALAYA STATE TRIBUNAL

Dr. Livandee Lyngdoh

Meghalaya as a State, now has a huge number of dentist and the strength goes on increasing every year with more graduates passing out. All along, our State never had a Dental Council, so each of us are registered in the states from where we completed our various Dental courses. As a member registered under Uttar Pradesh Dental Council, it troubles me every time I have to renew my registration, and I believe it's a common feeling with all the other dentist registered in other states of India. In this regard, the formation of the Meghalaya State Tribunal will be a thing of great relief for the dental fraternity of our state.

The Dental Council of India was incorporated under the Dentist Act, 1948 to regulate Dental Education and Profession throughout India- Registrations of dental degree holders and monitoring dental practice.

The government of Meghalaya, as per the provision under Section 32 of the Dentist Act, 1948 has formed the Dentist Registration Tribunal on the 17th October 2017.

A relevant extract of the Dentist Act, 1948 is reproduced hereunder:-

“32. (1) For the purpose of first preparing the register of dentist, the [State] Government shall, by a notification in the Official Gazette, constitute a Registration Tribunal consisting of three persons and shall also appoint a Registrar who shall act as Secretary of the Tribunal.”

Present members of the State Registration Tribunal:

1. DR LIVANDEE LYNDOH

Registrar, Meghalaya State Tribunal



2. DR LANA EMIKA LYNDOH NONGBRI

State Representative to the Dental Council of India

{U/S 3(a) of the Dentist Act 1948-one registered dentist possessing a recognized dental qualification elected by dentist in Part A of each [State].}



3. DR NATHANIEL KHARUMNUID

State Representative to the Dental Council of India

{U/S 3(e) of the Dentist Act 1948-one member to represent [each State] nominated by the Government of each such State from among persons registered either in a medical register or a dental register of the State.

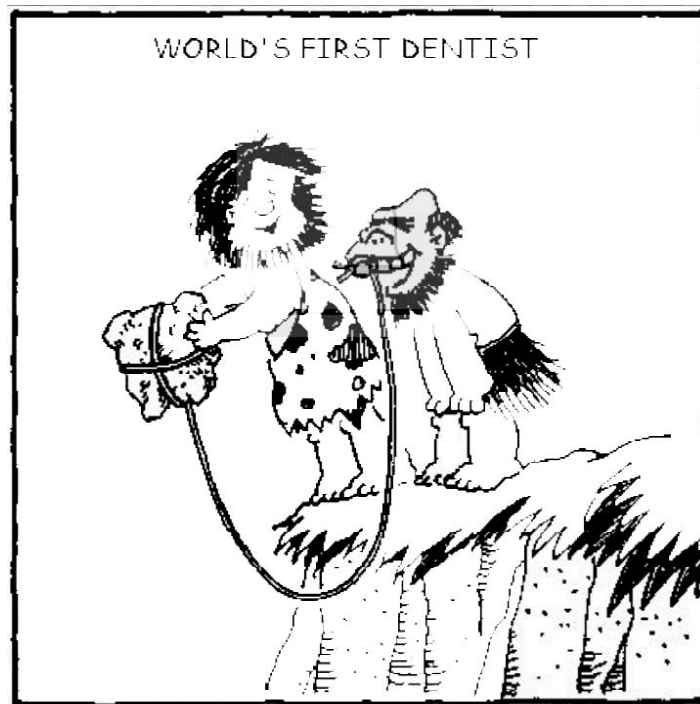




Beyond the formation of the tribunal, a bigger task lies ahead for the [State] Government to constitute a [State] Council as per section 21 of the Dentist Act 1948, and upon the constitution of the [State] Council the "register" shall be given into its custody.

As we move ahead maintaining of the "first register" of Dentist in the state would soon come about and along with the sincere efforts of the State Government and the State Council that is to be constituted, registration procedures would no longer be an inconvenient task.

~*~*~*~*~*~*





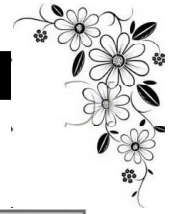
2nd State Dental Conference

Date : 6th October, 2018

Programme

- | | |
|---------------------|---|
| 10:00 am | - Felicitation of the Guest |
| 10:15 am | - Welcome Song |
| 10:15 am | - Welcome Address by the Chairman Organising Committee,
Dr. Nathaniel Kharumnuid |
| 10:20 am | - Lighting of the Lamp |
| 10:25 am | - Speech by the Guest of Honour, Shri P.W. Ingty,
Additional Chief Secretary, Govt. of Meghalaya |
| 10:35 am | - Releasing of Souvenir and Address by the Chief Guest,
Shri A.L. Hek, Honourable Minister of Health & Family
Welfare to the Govt. of Meghalaya |
| 10:50 am | - Vote of Thanks followed by light refreshment |
| 11:00 am
onwards | - Scientific Session |





Scientific Session I

Speaker 1 : Dr Apurva Garg

Topic : Diagnosis and management of oral Malignant and Pre Malignant Lesion in Dental OPD

Abstract :

Oral cancer is the second most common cancer in India according to GLOBOCAN-2018 with about 1,20,000 new cases and 71,000 deaths annually. It is more common in areas where tobacco and arecanut chewing is very prevalent. Oral squamous cell carcinoma (OSCC) are generally preceded by premalignant lesions like leukoplakia, erythroplakia and oral submucous fibrosis. Dentists play a very important role in screening high risk cases who are either tobacco users or have oral pre-malignant lesions. This will help in reducing the morbidity and mortality associated this disease. Biopsy is the first step in diagnosis of OSCC and can be safely done in OPD. Cases with any suspicious findings should be referred to higher centers for appropriate management.



Speaker 2: Dr Aditya Kanoi

Topic: Reconstructive Surgery in Head & Neck Cancer

Abstract:

In the last 3 decades, although survival rates in Head & Neck cancer patients have remained largely stable, patient outcomes and quality of life (QoL) has seen a significant improvement, mainly as a result of advances in reconstructive surgery. This talk aims at exploring the role of reconstruction in Head & Neck oncosurgery in addition to introducing the basics of reconstructive surgery. A brief overview of some of the commonly performed reconstructive procedures with emphasis on current gold-standards in the field as well as the importance of dental rehabilitation using osseointegrated implants are also discussed.



Scientific Session II

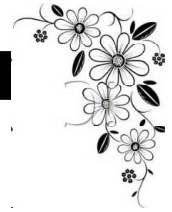
Speaker : Dr. Niladri Maiti

Topic : Phase shift in Endodontic Instrumentation from CM to EDM

Abstract :

There has been a dramatic change in the concept of endodontic instrumentation. With changes in design & taper of instruments, now it's the era of surface modification in terms of file metallurgy. The lecture highlights are the changing concept of endodontic instruments, irrigation protocol, sonic activation, as well as judicious use of apex locators in clinical use.





Closure of Oroantral Communications: A Review



*Dr. (Mrs) Bobby L. Majaw, MDS,
Oral & Maxillofacial Surgeon & Implantologist*

An oro antral communication (OAC) is an open connection between the oral cavity and the maxillary sinus. The maxillary sinus takes up a large part of the body of the maxilla, generally extending into the alveolar process bordering the apices of the posterior teeth. OACs are usually caused by extraction of maxillary posterior teeth. The thinness of the antral floor in that region ranges from 1 to 7 mm. Although the incidence is relatively low (5%), OACs are frequently encountered due to the large number of extractions.

OACs may close spontaneously especially when the defect has a size smaller than 5 mm. Nevertheless, to our knowledge, it has never been actually proven that small OACs (<5mm) will heal by themselves. Also, it is difficult to determine the size of the OAC clinically. To prevent chronic sinusitis and the development of fistulas, it is generally accepted that all of these defects should be closed within 24 to 48 hours. Currently, closure of OACs is usually performed by a surgical procedure. In case of a small OAC, suturing the gingiva might be sufficient to close the perforation. When this does not provide adequate closure, a flap procedure is the treatment of choice. Flap procedures can be divided into local flaps and distant flaps. Local flap procedures include palatal flaps and various buccal flaps, of which Rehrmann's and Môczáir's techniques are widely known. When deciding how to treat an OAC, several aspects should be taken into account:

1. The size of the communication,
2. The time of diagnosing, and
3. The presence of an infection.

Furthermore, the selection of the treatment strategy is influenced by

1. The amount and condition of the tissue available for repair and
2. The possible placement of dental implants in the future.

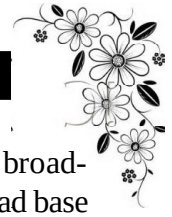
Surgical therapy of OACs has several disadvantages, such as the need for surgical expertise and equipment, postoperative pain and swelling, and possibly a permanent decrease of the buccal sulcus depth. Several alternative techniques have been presented throughout the years. An overview of these treatment modalities is given in Figure 1.

The goal of this review is to provide an overview of the most common surgical treatment strategies of OACs and the alternative treatment options, including their advantages and disadvantages.

I. AUTOGENOUS SOFT TISSUE FLAPS

Although many surgical methods have been described throughout the years, only a few seem to have gained wide acceptance. The most common surgical treatment of an OAC is the buccal advancement flap procedure designed by Rehrmann.





1. Buccal advancement flap procedure designed by Rehrman: In this procedure a broad-based trapezoid buccal mucoperiosteal flap is created and sutured over the defect. Its broad base assures adequate blood supply.

Disadvantages:

The risk of reduction of the buccal sulcus depth and post operative pain and swelling.

2. Môczáir flap: This method involves a buccal mucoperiosteal flap that is displaced 1 tooth width distally. This flap is recommended for edentulous patients because the large denuded area, which is the result of the distal displacement of the buccal sliding flap, may give rise to periodontal disease in dentate patients. In addition, buccal sulcus depth is minimally influenced by advancement of the Môczáir flap in comparison with the Rehrmann method.

3. Palatal flaps : Instead of buccal tissue, mucous membrane of the hard palate may be used to close an OAC. Full-thickness mucoperiosteal palatal flaps in various forms may especially be useful for closure of OACs larger than 10 mm. Lee et al reported a success rate of 76% of random palatal flaps in 21 patients. Furthermore, they concluded that an appropriate length–width ratio is the most important factor determining the clinical outcome of palatal flaps.

A palatal flap, anteriorly based or posteriorly based, contains a large palatine vessel to ensure adequate blood flow. It is less vulnerable to rupture than a buccal flap because of the thickness of the palatal mucosa. Further more, the buccal sulcus depth remains intact.

Disadvantages:

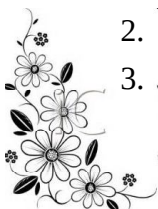
1. The denuded palatal donar area remains until secondary epithelialization occurs. This causes relative greater discomfort for the patient
2. A soft tissue bulge at the axis of rotation.

Many surgeons prefer the palatal flap over the buccal flap procedure.

4. The buccal fat pad (BFP) is a lobulated mass of fatty tissue surrounded by a slight capsule, located inside the masticatory spaces. The size of the BFP has proved to be constant among individuals, regardless of the fat distribution and bodyweight. Blood supply to the BFP depends on branches of the superficial temporal, maxillary, and facial arteries. Its use as a pedicled graft for reconstruction in oral surgery, including the closure of OACs, was first described by Egyedi in 1977. One of the advantages of the BFP is the proximity of the BFP near the recipient area, permitting quick grafting. Clinical findings showed that the BFP, after grafting, changed into granulation- like tissue over a period of 14 days, followed by complete epithelialization. Furthermore, the buccal sulcus depth is not affected by the BFP technique.

Advantages:

1. Easy mobilization
2. Its excellent blood supply and
3. Minimal donor-site morbidity.



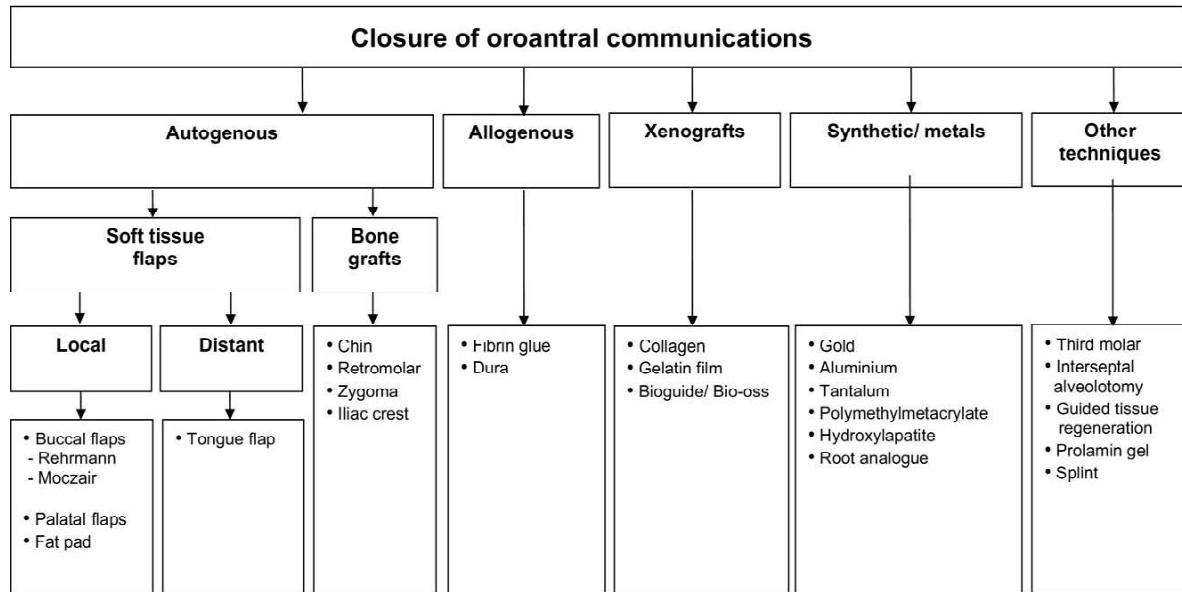


Figure .1: Different strategies for closure of oro antral communications.

Disadvantages:

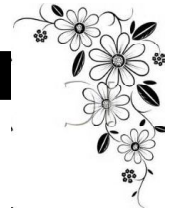
The BFP requires very careful manipulation, and although success rates in the literature are high (close to 100%), closure of large defects could involve complications such as graft necrosis or new fistulas.

According to several investigators, the indication for use of the BFP occurs especially in cases with damage to the alveolar buccal or palatal muco- periosteum or cases that have failed with other methods..

5. Tongue flaps are suitable for reconstruction in various areas, including lip, cheek, and palatal or oroantral fistulas, because they offer rich blood supply and pliability. Tongue flaps can be created from the ventral, dorsal, or lateral part of the tongue. In general, the location of the defect dictates the choice of tongue flap. Especially the lateral tongue is suitable for closure of OACs. Siegel et al used a full thickness pedicled flap from the lateral border of the tongue to close a large OAC after partial maxillectomy. Healing was uneventful in this patient. The investigators stated that the lateral tongue flap is suitable for large oro antral defects in general, allowing instant repair with rare failure. Kim et al also used a posteriorly based full-thickness lateral tongue flap to close an OAC, with success.

Disadvantages :

The requirement for general anesthesia, although the cutting of the pedicle 14 days after attachment may be performed under local anesthesia, and the requirement for a 2-stage or 3-stage procedure to gain ultimate results.



II. AUTOGENOUS BONE GRAFTS

Proctor first suggested bone grafts harvested from the iliac crest for closure of large OACs in 1969. Nevertheless, bone grafting for closure of OACs has the disadvantage of requiring a second surgical procedure for bone harvesting. This second procedure elongates surgical time and increases patient morbidity. Despite these disadvantages, bone grafting for closure of OACs has gained attention over recent years, because of the rising demand for implant rehabilitation.

1. Iliac crest :

Harvesting bone from the iliac crest involves significant donor site morbidity, such as prolonged postoperative pain and possible sensory disturbance.

Harvesting bone from intraoral donor area significantly reduces the demands made on the patients postoperatively and can be performed under local anesthesia. Therefore, alternative donor areas have been investigated, including bone grafts from the retromolar area, zygomatic process, and the chin.

2. Retromolar area :

Watzak et al harvested retromolar bone for pressfitted closure of OACs in 4 patients. After placing the bone graft, soft tissue closure was realized by a Rehrmann buccal flap. No reopening of the sinus was observed.

A limiting factor of the retromolar donor area is the confined amount of bone available. However, in most cases only a small amount of bone will be needed for closure of OACs. Further, retromolar bone seems to form a solid base for implant rehabilitation.

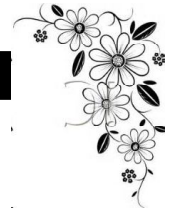
3. Chin bone :

Chin bone for oroantral fistula closure was studied in 5 patients by Haas et al. In 3 patients a stable press-fit of the bone graft in the OAC was accomplished. In 2 patients additional plates and screws were used to obtain a rigid fixation of the graft. A Rehrmann flap was used in all patients for soft tissue closure. Wound dehiscence occurred in 1 patient, but the sinus remained unaffected. The use of a monocortical (chin) bone block for closure of an OAC is recommended for patients affected by maxillary atrophy requiring sinus augmentation before implant placement.

4. Zygomatic bone:

Peñarrocha-Diago et al used zygomatic bone as a bone graft for closure of an OAC in 1 patient. Subsequently 2 dental implants were placed. This technique offers the advantage of the proximity of the donor area to the recipient area, which minimizes surgical time and patient discomfort. As in retromolar bone grafts, limited bone is obtainable from the zygomatic process. Furthermore, accidental sinus membrane perforation may occur.





III. ALLOGENOUS MATERIALS

1. Lyophilized fibrin glue of human origin:

Kniha et al and Gattinger used the fibrin glue in combination with a collagen sheet. Preparation of the fibrin glue takes about 15 to 20 minutes. The glue is then applied in the socket with a syringe, together with the collagen sheet. Thereafter, the oral surface is sealed with the rest of the fibrin glue. After 2 hours the glue has reached its maximum strength. Investigators using fibrin glue in combination with collagen reported high success percentages.

Advantage: No flaps need to be raised. Therefore, intraoral anatomy remains intact.

Disadvantages: A small risk of transmitting viral hepatitis and the preparation time needed for the fibrin glue.

2. Lyophilized dura:

Kinner and Frenkel used lyophilized dura to treat OACs in 29 patients. The sterilized dura is placed in a saline solution to regain its flexibility. Then it is cut to size to make it cover the bony margins of the defect. Sutures are placed at the corners of the graft after which it is covered with a plastic plate for protection. The dura is exfoliated after 2 weeks. Uncomplicated healing was observed in 28 of 29 patients. This successful and simple technique involves no surgical intervention, which makes it an attractive strategy. However, the small risk of transmitting pathogens cannot be ruled out completely.

IV. XENOGRAFTS

1. Lyophilised Porcine dermis:

Mitchell and Lamb and Shaker et al used lyophilized porcine dermis (Zenoderm; Ethicon LTD, Edinburgh, Scotland) for closure of oro antral perforations. Mitchell and Lamb left the porcine graft exposed to the oral environment. Conversely, Shaker et al placed buccal and palatal sliding flaps over the porcine collagen. Both groups reported good results (1 failure in 10 patients and 1 failure in 30 patients, respectively).

The collagen does not have to be removed because it is ultimately replaced by fibrous tissue. Nevertheless, it remains in place for a sufficient length of time to allow for mucosal overgrowth across the communication.

Mitchell and Lamb showed that covering the graft by buccal and palatal flaps is not necessary to obtain optimal results, apparently offering a far more straight forward strategy than Shaker et al.

2. Bioguide & Bio Oss:

Ogunsalu used Bio-Guide (porcine collagen membrane) and Bio-Oss (bovine bone grafting material) (Geistlich Pharma AG, Wolhusen, Switzerland) to close an OAC in 1 patient. For this purpose the Bio-Oss granules were sutured in a prefabricated Bio-Guide envelope. A full-thickness mucoperiosteal flap was then raised and the Bio-Oss–Bio-Guide sandwich placed underneath. Then the flap was





repositioned, resulting in primary closure. Healing was uneventful in this patient. According to the researcher, the radiograph showed bony healing of the defect 8 months after closure, permitting placement of an endosseous implant. Nevertheless, bony regeneration was not objectively quantified in this patient.

Advantage: The fact that seemingly both soft and hard tissue closure are achieved, without donor site surgery.

Disadvantage: The need for a mucoperiosteal flap to cover the sandwich.

V. SYNTHETIC CLOSURE:

Various synthetic materials have been described in the literature for closure of OACs.

1. **Gold foil:** The gold foil is burnished into place with its edges on healthy bone, thus acting as a bridge for overgrowing sinus mucosa. The mucoperiosteal flaps, which were raised to expose the bony margins of the defect, are sutured across the gold foil without attempting to realize primary closure. In general, the gold foil exfoliates after a period of 6 weeks.

Disadvantage :

- expensive technique
- the relatively long period needed for complete closure and healing.

2. Aluminium plates .

Steiner et al proposed 36-gauge pure aluminum plates for closure. In line with the gold technique, an aluminum plate is used as a protective plate to aid in closure. Sutures are placed only for approximation of the buccal and palatal tissues; the aluminum plate is therefore visible at all times. After 6 weeks, the aluminum plate is displaced from its initial position due to the reparative tissue formed underneath. Healing was uneventful in all 8 patients.

Advantages:

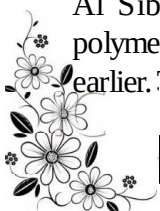
- its malleability and softness and its low cost compared with gold.

3. Tantalum foil:

Tantalum foil was used by McClung and Chipps for closure of 4 OACs in edentate patients, using the same method as in the gold technique. No complications were observed. The tantalum foil was exfoliated after 9 weeks, revealing new granulation tissue across the defect.

4. Polymethylmethacrylate :

Al Sibahi and Shanoon described a technique for closure of OACs using self-curing polymethylmethacrylate in 10 patients. The technique resembles the methods using metals as described earlier. The polymethylmethacrylate plate is immersed for 24 hours in a sterilizing solution, cut to size,





and placed over the defect. Mucoperiosteal flaps are then replaced without attempting to cover the acrylic plate. After 3 to 4 weeks the polymethylmethacrylate plate becomes visible and is removed as soon as the edges become exposed. Results were satisfying for all 10 patients.

Disadvantage:

compared with the use of gold or aluminum, is the needed preparation in advance, eg, mixing the power and liquid, allowing it to set, and sterilizing it for 24 hours.

5. Hydroxylapatite:

Zide and Karas used hydroxylapatite blocks that were carved to fit the defect and encircled with a wire for stability when needed. The investigators observed natural extrusion of the blocks without recurrence of a fistula in all 6 patients.

Becker et al used hydroxylapatite implants in 5 different sizes for closing oroantral defects. Hydroxylapatite granules were used to fill any remaining space in the socket. Oral mucosa was approximated without complete closure. Healing was uneventful in all 20 patients. In contrast, these researchers observed no extrusion of the hydroxylapatite implants. Due to this, dental implants could not be placed at a later stage.

Disadvantages:

the expense of the material and the need for a variety of implant sizes to allow for size selection.

6. A root analog made of β -tricalcium phosphate:

was used by Thoma et al in 20 patients with OACs. The root replicas were fabricated chair side, using a mold of the extracted tooth. Replicas could be placed in only 14 of 20 patients due to the necessity of a proper recipient socket to ensure tight fitting of the root replica. No complications were observed. This technique proved to be fast and simple, but cannot be performed in all patients due to technical limitations.

OTHER TECHNIQUES:

1. **Third molar transplantation** for closure of OACs has been described where endodontic therapy of the donor teeth was performed after 3 weeks and the researchers concluded that third molar transplantation is a successful but challenging procedure.

2. **Interseptal alveolotomy** for closure of small OACs. This technique is derived from the Dean preprosthetic technique and originally designed for smoothing the alveolar ridge. In the extended Dean technique the interseptal bone is removed, followed by fracturing of the buccal cortex in the direction of the palate. Sutures are used for soft tissue closure.

3. **Guided tissue regeneration** was described by Waldrop and Semba. The technique involves an absorbable gelatin membrane, allogenic bone graft material, and a non resorbable polytetrafluoroethylene (ePTFE) membrane. A flap is reflected and an absorbable gelatin membrane





is placed over the OAC with its edges on the bony margins of the perforation, to act as a barrier for the bone graft material. A layer of allogenic bone graft material is put on the membrane. The non resorbable ePTFE membrane is used to cover the bone graft material, and the soft tissue flap is placed over the membrane. Eight weeks after placement, the ePTFE membrane is removed, after removal of the inner aspect of the flap adjacent to the ePTFE membrane, and the mucoperiosteal flap replaced.

4. **Prolamin occlusion gel** is an alkaline alcoholic solution based on corn protein. The solution is injected in the perforation and hardens within a few minutes. After a week, granulation tissue is formed and the prolamin gel completely dissolves after 2 to 3 weeks.

5. **Laser light** was suggested by Grzesiak-Janias and Janasto establish closure of OACs without surgical intervention. They used a biostimulative laser of 30-mW power for 3 cycles of extraoral and intraoral irradiation. In this study, 61 patients were exposed to the laser light for 10.5 minutes for 4 consecutive days.

6. Logan and Coates proposed a treatment strategy for OACs in immune compromised patients. One patient with human immune deficiency virus was treated with this technique. First, the OAC was deepithelialized under local anesthesia. Second, an acrylic surgical splint was fitted that covered the fistula and the edentulous area including the hard palate. The patient wore the splint continuously over a period of 8 weeks, removing it only for cleaning. An oral candidiasis developed, probably in relation to xerostomia, which was successfully treated with miconazole oral gel. Complete healing was established after 8 weeks.

DISCUSSION:

All of these studies included in this article is to provide a complete overview of the treatment strategies of OACs. Ideally, treatment of OACs is quick, safe, straight-forward, well tolerated by patients, has low costs, and results in good bony and soft tissue healing with a low complication rate.

Soft tissue closure using a buccal or palatal flap still seems to be the treatment of choice for OACs, in case primary suturing of the gingival does not provide adequate closure of the communication. The buccal flap, despite its risk of reducing the buccal sulcus depth, appears more popular than the palatal flap, which results in a denuded palatal donor area requiring secondary epithelialization. Nevertheless, many surgeons seem to prefer the palatal flap because of its excellent blood supply and the fact that the buccal sulcus remains intact. In contrast, a reduction of the buccal sulcus depth is currently becoming less of a problem with the possibility of implant-retained overdentures.

At the present time, bony closure of OACs seems to gain interest. This is probably, as stated earlier, a result of the rising demand for implant rehabilitation. When placement of an endosseous implant is desired, bone grafting for closure of the OAC might be the best option. Intraoral bone harvesting is the current strategy of choice for bone harvesting, reducing patient morbidity compared with extraoral bone harvesting.

There is a tendency in medicine to prefer synthetic materials above materials of animal-derived origin. The reason is possible transmission of pathogens of animal-derived products.





Based on this review it may be concluded that a wide range of techniques has been proposed in the literature, of which only a few have gained wide acceptance. The reason for this may be found in the costs of the proposed method, where other alternative treatments did not offer any simplification compared with the standard closure. Surgical closure of OACs by a buccal or palatal flap therefore remains the treatment of choice.

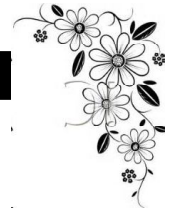
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ON A CASE OF INTERNAL BLEACHING



Dr. Biswapriya Purkayastha

Aesthetics, as we all know, have become an increasingly vital part of contemporary dentistry. We still occasionally come across anterior restorations done, invariably by quacks, with silver amalgam; but in standard dentistry even such materials as silicate cements and self-curing composites are now so obsolete that nobody even remembers them any longer.

In addition to restorations, the options include veneers and crowns, and, of course, the internet makes them aware that such treatment modalities actually exist – and that they could benefit from them.

We're also familiar with the experience of encountering patients who want their "teeth whitened" (or, as one particular young man once told me, "whitewashed") not just to get rid of stains on their teeth, but to lighten the colour. And invariably they know, or have heard of, someone who has had this done.

Today, therefore, the patient has not just a choice of multiple treatment modalities but knowledge that they exist, and more often than not an exaggerated idea of what that treatment might be able to achieve. This becomes a problem when it comes to situations where the patient imagines one particular treatment can work miracles, but the dentist is well aware that it will not....and, try as he or she might, he or she can't convince the patient of this.

This is especially the case with bleaching. As we all know, bleaching has the following limitations:

First, and the patient usually will refuse to accept this, the amount of bleaching achievable is not predictable. Especially with regard to very dark stains, any lightening of colour that can be achieved will still be far short of satisfactory.

Second, it is not permanent, and with patients who are heavy smokers or tobacco/betel nut chewers, any effect achieved can disappear within an extremely short period of time.

Third, it's of course not without side effects, most importantly sensitivity, which the patient will more likely than not blame on the dentist even if he or she has been repeatedly warned of this possibility in advance.

Keeping these factors in mind, many teeth are veneered or even crowned that otherwise might have been treated by bleaching. This is expensive in terms of time for the dentist and financially for the patient. And, keeping the average oral hygiene standards and substance chewing habits of people in this part of the country, this creates its own problems in the medium to long term.

On the other hand, there are single discoloured teeth that can be relatively safely, reliably, and economically treated by *internal* bleaching. This is, of course, only possible in endodontically treated





teeth, thereby precluding its use in most instances; but in particular cases it can give very satisfactory results indeed.

Internal bleaching, as with external bleaching, depends on the action of oxygen ions to oxidise stained tissue and thereby lighten its colour. It is more effective because:

First, it acts from within the tooth, and thus the oxygen does not have to penetrate through the hydroxyapatite barrier created by enamel. The dentinal tubules are easily accessed by the oxygen, which can therefore spread to the entire coronal section of the tooth from within.

Secondly, since it can only be performed in endodontically treated teeth, there is no question of tooth sensitivity.

Third, since the action is entirely inside the tooth, as long as there is no further insult to the integrity of the tooth by abrasion, attrition, or caries, any result achieved is long lasting and may be permanent.

In this article we shall discuss such a case.

The patient was a 28-year-old male who presented with a badly discoloured maxillary left central incisor, which he was extremely self-conscious about. He gave a history of having had endodontic treatment performed on it elsewhere several years ago, following which it had got progressively darker, until he thought he had no other option than to have it extracted and get an artificial replacement.

On radiographic examination the tooth showed an incompletely and poorly obturated root canal, but lacking any periapical pathology. There was caries on the lingual fossa of the tooth. This, with leakage of fluids into the incompletely obturated pulp chamber, causing extensive secondary caries inside the coronal section of the tooth, was responsible for the staining.

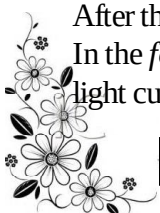
After discussion, the patient agreed to have the tooth treated by a combination of endodontic therapy and internal bleaching.

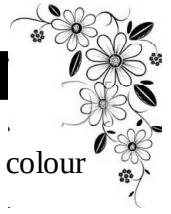
In the *first step*, the gutta percha that had been used elsewhere to obturate the root canal was removed. The canal was cleaned, shaped, enlarged and obturated (with Gutta Percha cone size F3).

In the second step, the carious dentine within the coronal section of the tooth was removed with a round diamond point on an airtor handpiece, being careful not to penetrate the enamel on the facial surface at any point. This also removed a great part of the staining.

In the *third step*, the gutta percha in the coronal part of the pulp chamber and the apical third of the canal was removed. A cotton wool pledget soaked in hydrogen peroxide was inserted into the pulp chamber and sealed inside using Cavit temporary restoration material (in order to prevent oxygen ions escaping into the oral environment instead of penetrating into the dentinal tubules). This procedure was repeated every alternate day for a period of three weeks.

After three weeks, the patient professed himself satisfied with the amount of tooth lightening achieved. In the *fourth step*, therefore, the pulp chamber and apical third of the root canal was restored with light cured resin of appropriate shade.





The patient has since reported by telephone that the tooth has given no trouble and that the colour remains completely satisfactory.

Here is the photographic evidence, because seeing is believing:

Before and After



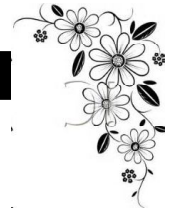
It's to be noted, of course, that this is not a suggestion to endodontically treat a vital tooth in order to perform an internal bleach on it. That's all kinds of malpractice, and we don't do malpractice.

Do we?

~*~*~*~*~*~*

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Re-mineralizing Agents: To arrest and reverse the initial caries Lesions.



Dr. Alice Lyngdoh
Deptt. of Dentistry, NEIGRIHMS Shillong.

Abstract: Dental caries is a major health problem affecting people of all socioeconomic status. Treating caries at its initial stage or non-cavitated is very beneficial as it will reduce the cost and time of treatment. Most importantly retaining the natural state of enamel which is highly caries resistant. This article highlights the different re-mineralizing agents that are used in treating the early carious lesion non-invasively. The application of these agents will arrest the carious process and re-mineralize the initial caries.

Keywords: Caries, Re-mineralization, Demineralization, re-mineralizing agents.

Introduction

Dental Caries is the most prevalent disease with a multi-factorial cause, its prevention becomes more or less a complicated process. For dental caries to occur, three essential factors must be present at the same time.

Agent: *S mutans*, *Lactobacillus*.

Host: Enamel, Dentin & Cementum.

Environment: Fermentable carbohydrates.

The carious process can be prevented or interrupted if any one of the conditions does not exist or is modified. Currently, there has been increasing awareness that caries is a dynamic process characterized by a cycle of demineralization and re-mineralization in which tooth loses and gains calcium and phosphate ions based on micro-environment of oral cavity. Hence, a biological approach using bio-mimetic materials should be incorporated in reversing the subsurface enamel carious lesion.

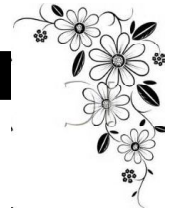
IDEAL REQUIREMENTS OF REMINERALIZING AGENTS^{1,2}

1. Should deliver calcium and phosphate into the subsurface.
2. Should not deliver excess of calcium.
3. Should not favour calculus formation.
4. Should work at an acidic pH so as to stop demineralization during a carious attack.
5. Should work in xerostomic patients also, as saliva cannot effectively stop the carious process.
6. Should be able to boost the re-mineralizing properties of saliva.
7. For novel materials shows benefit over fluoride.

Re-mineralizing Agents

Re-mineralizing agents are agents used for stabilization of bioavailable calcium, phosphate and fluoride ions and the localization of these ions to non-cavitated caries lesions for controlled re-mineralization





The current re-mineralizing agents that are being used are :

Fluoride

Fluorides have been the gold standard in re-mineralizing the de-mineralized enamel and is continuing till today. Topical fluoride is effective in three basic ways:

1. Inhibition of demineralization
2. Enhancement of re-mineralization.
3. Bacteriostatic/ bacteriocidal effects on bacteria.

The antibacterial action of fluoride is by impairing glycolysis and other metabolic processes within the bacteria, forming HF that lowers bacterial intracellular pH, interfering with bacterial membrane permeability to ionic transfer, and inhibiting enzyme systems³.

The fluoride ion is uptaken by hydroxyl groups at the enamel surface creating fluoridated hydroxyapatite and fluorapatite, which is more difficult to de-mineralize than non fluoridated enamel. Fluoride also enhances the precipitation of calcium and phosphate ions into subsurface enamel lesions.

Professionally applied fluoride products are those medicaments dispensed by dental professionals in the dental office settings and usually involve the use of high fluoride concentration products that is from 5000 to 22600 ppm fluoride. Self-applied fluoride products are usually bought and dispensed by the individual patient but at the recommendation of dental personnel. These products include fluoride dentifrices and mouths rinses and typically are low fluoride concentration products in the range from 200 to 1000 ppm.

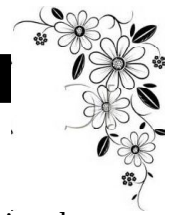
Fluoridated dentifrices have proved to be as an effective anticarious agent. Caries reduction of fluoridated dentifrices is approximately 25%.^{4,5} Fluoride is available as sodium fluoride, stannous fluoride, sodium monofluorophosphate. Most dentifrices have fluoride level of 1000 ppm or 1100 ppm.

Professionally applied fluoride are varnishes, gels and foams. Fluoride varnish is available as 5% sodium fluoride (22,600 ppm fluoride) and 1% difluorosilane (1000 ppm fluoride). The slow release of fluoride from fluoride varnish provides a sustained fluoride release over a couple of days and provide an excellent safety since the release is slow.

Fluoride gels are 1.23% acidulated phosphate fluoride, 2% sodium fluoride and 8% stannous fluoride. All these have shown success in reducing caries. However their application is difficult in young children therefore fluoride varnish is more preferable.

The availability of topical fluorides in the oral environment whether applied professionally using concentrated solution and gels or self applied using rinses and dentifrices with a lower fluoride concentration on a daily basis applied for many years helps to increase the resistance of the teeth against dental caries.





Casein Phosphopeptides & Amorphous Calcium Phosphates (CPP – ACP)

CPP- ACP is one of the novel material that is currently prove to be very effective in reversing the white spot lesions. CPP- Group of peptides derived from casein- part of the protein that naturally occurs in milk. CPP binds to dental plaque, tooth enamel, bio film, bacteria and hydroxyl apatite. CPP bind and stabilize the calcium and phosphate in solution (localize bio available calcium and phosphate). CPP- Keeps the calcium and phosphate in an amorphous non-crystalline state, ie ACP without precipitation. In this state, calcium and phosphate ions can enter the tooth enamel, thus promoting remineralization.

CPP-ACP paste is available in paste form with the product name as MI paste, GC tooth mousse. The paste can be applied gently with the rubber cup or gloved finger by the dental professional. It can also be applied at home by the patient or parent of the patient by using a finger or a toothbrush⁶.

It can be used after bleaching, scaling, post orthodontic treatment, in patients with caries, erosion, xerostomia etc. The paste is recommended to be placed on the labial surface of the teeth in a pea size amount everyday before bedtime. The paste would have a greater contact time on the teeth surfaces since there is decrease salivary flow while sleeping. Ingestion of this agent is considered to be safe for all age groups.

CPP-ACP paste containing an added fluoride of 900 ppm commonly referred to as MI paste plus, GC tooth mousse plus. This fluoridated paste has bioavailable calcium and phosphate and yet also same amount of fluoride as that provide in dentifrices. MI Paste plus when compared to MI Paste remineralizes subsurface lesions of the enamel better⁶. The presence of fluoride enhances the precipitation of calcium and phosphate. Although Fluoridated CPP-ACP is more effective in remineralizing early caries lesion it is not indicated in younger children because of the possibility of ingestion of the fluoride content.

CPP-ACP Gum contained in sugar free gum has been shown to be effective in remineralizing early enamel lesion⁷. The trademark name for CPP-ACP is Recaldent TM. Gums containing CPP-ACP offers delivery of bio-available calcium and phosphate as well as improving salivary flow which is supersaturated with calcium and phosphate.

Tricalcium Phosphate (TCP)

TCP is a new hybrid material created with a milling technique that fuse Beta tricalcium phosphate and sodium lauryl sulphate or fumaric acid. This blending results in “functionalized” calcium and free phosphate, designed to increase the efficacy of fluoride remineralization⁸. It has been suggested that the organic coating prevents undesirable interactions with fluoride, but may dissolves away when particles contact saliva. This is the basis for the 3M Espe ClinPro TM fluoride dentifrices. According to the manufacturer, this organically modified TCP technology should operate best as a remineralizing agent at neutral or slightly alkaline pH.

Calcium Sucrose Phosphate

Calcium sucrose phosphate is an organic phosphate that have a potential for anti- caries effect. Toothmin tooth cream (Abbot Healthcare, Mumbai, India) based on anticay technology having potential of re-mineralization is available in India.





This anticay technology has been commercialised by Biodental Remin, an Australia based Biotechnology Company. Anticay is a mixture of calcium sucrose phosphates and inorganic calcium phosphates consisting of 10–12% calcium and 8–10% phosphorous by weight. Calcium sucrose phosphate decreases tooth enamel demineralization, inhibits plaque formation and promotes enamel remineralization. Its effective remineralizing action is because of its solubility in water providing high concentrations of free calcium and phosphate ions several times higher than normally present in saliva.⁹

Calcium Sodium Phosphosilicate

NovaMin™, a bioactive glass, containing calcium sodium phosphosilicate, which comprises of 45% SiO₂, 24.5% Na₂ O, 24.5% CaO and 6% P₂ O₅ that result in the formation of new hydroxyl carbonate apatite crystals.¹⁰

Novamin has been incorporated into toothpastes, gel and prophypastes. The calcium phosphate complexes crystallizes into hydroxycarbonate apatite, which is chemically and structurally similar to biological apatite. In the presence of water or saliva Novamin rapidly releases sodium ions. This increase the local pH and initiates the release of calcium and phosphate. Shy NM and Sensodyne utilize Novamin technology and is widely used for tooth repair.

Xylitol

Xylitol is believed to be a “tooth-friendly”, non-fermentable sugar alcohol. The main properties of this sweetener is that it is not fermented to acids, less formation of plaque and reduced number of Mutans streptococci in saliva . It is suggested to have non-cariogenic and cariostatic properties.¹¹

A minimum of 5-6 grams and three exposures per day (from chewing gum and/or candies) is required for clinical effect. Use of xylitol is associated with a significant reduction in caries incidence and increased tooth remineralization. The xylitol coating prevents early reaction and produces a sustained release of the remineralizing ions. Saliva exposure dissolves the xylitol and frees the calcium and phosphate ions. A novel method of delivering remineralizing ions (calcium and phosphate) in combination with xylitol has been developed using a NaF varnish with the brand name Pulpdent Embrace Varnish.

Conclusion

The re-mineralizing agents provide a new avenue for re-mineralization of non-cavitated and early carious lesions. These agents played a significant role in caries prevention and aim at controlling the demineralization/re-mineralization process. The modern dentistry focus at minimal intervention, treating the early carious lesion non-invasively. Early detection and intervention of the non-cavitated lesions will help to retain the enamel in its healthy state. Availability of more research and knowledge, easier implementation of the re-mineralizing tools will enable the clinician to work more towards prevention rather than correction.





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Sequelae of Tooth Loss and Rehabilitation of Tooth Loss related Quality of Life

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Introduction:

Dental and oral health is well recognized as an integral part of the general health and well-being. “Health” as ‘WHO’ defined (1948) is the “complete state of physical, mental, and social well-being and not merely the absence of infirmity”. Well-being is assessed considering its three dimensions. Physical well-being assumes the ability to function normally in activities such as bathing, dressing, eating and moving around. Mental well-being implies that cognitive faculties are intact and there is no burden of fear, anxiety, stress, depression or other negative emotions. Social well-being relates to one’s ability to participate in society, fulfilling roles as a family member, friend, worker, or citizen or in other ways engaging in interactions with others. The Quality of Life (QoL) in broader meaning represents the abilities of individuals to live healthy with a state of physical, mental and social well-being in context of their culture and value system. So the present Health Care Systems aim not only to cure diseases to extend life expectancy but also to enhance QoL.

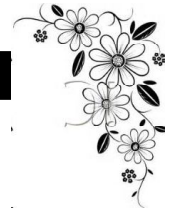
Common oral diseases like Dental caries and Periodontal diseases, if not treated adequately on time lead to tooth loss. Tooth loss consequently causes functional impairment with regard to chewing and esthetics, depending on its location and number of missing teeth and period of edentulism which might ultimately affect quality of life. The socio- economic condition, cultural and behavioural attitude of the patient may also complicate the edentulous situation which becomes challenging for quality rehabilitation to the dental professional with conventional prosthesis. Besides the common oral diseases, the increasing rate of occurrence of oral cancers and accidental traumas for example road traffic accident may lead to physical, psychological and social impairments due to acquired oro-facial disfigurements including tooth loss causing more challenges to restore normal form and functions and oral health related QoL.

Recent studies ¹⁻⁴ have shown that mastication is of great importance, not only for the intake of food but also for the systemic, mental and physical functions of the body. Mastication has been shown to promote and preserve general health, especially the cognitive function of the brain ^{5,6}, beyond its primary functions of food intake and digestion. So like the other health care systems, there is a paradigm shift of the goal of modern dentistry to restore the patients’ stomatognathic system to normal function and improve the oral health related QoL.

Consequences of tooth loss:

Loss of one or more natural teeth may eventually affect the health and integrity of all the components of the masticatory system leading to a sequel response.



**i). Effects on residual alveolar ridge and Jaw bone:**

This close relationship between the tooth and the bone continues throughout life. Loss of tooth results in lack of proprioceptive stimulation to the surrounding bone which increases the osteoclastic activities surpassing the osteoblastic phenomenon. This may inevitably lead to a decrease in dimensions and density of the residual alveolar bone, progressively affecting the jaw bone. Therefore, a tooth is necessary both to the development of the bone around the tooth, and is also necessary for the stimulation of this bone to maintain its strength, density and shape. Loss of all of the teeth slowly, but eventually, leads to jaws with almost complete bone loss. The rate and amount of bone loss may be influenced by gender (females lose more bone), hormones (lack of estrogen causes more bone loss), metabolism, medications, parafunction (grinding the teeth) and poorly fitting dentures. It is reported in one study that about 40% of denture wearers have been wearing the same denture for more than 10 years. Although the fact that wearing dentures day and night places greater forces on the bone and mucosa, and accelerates bone loss, 80% of dentures are worn both day and night. More the wearing of ill fitting conventional removable prosthesis, the more detrimental mechanical forces are exerted resulting severe resorption of jaw bone over time.

ii). Effect tooth and bone loss on soft tissues:

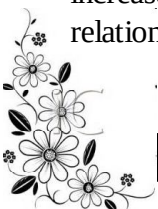
Continued loss of width and height of the supporting bone eventually affect the health of the overlying mucosa. The mucosa become atrophic and prone to injuries, patients often complain of pain and discomfort due to denture sore caused by their dentures. Loss of large number of posterior teeth or complete edentulous situation affect on the size and position of the tongue. The tongue enlarges to accommodate the space previously occupied the teeth and spread over the edentulous ridge, over time it might roll back changing its normal position which creates more difficulties in attaining retention and stability of the conventional removable prosthesis.

The progressive bone loss affects the muscle attachments making them nearer to the crest of the ridges and/or over the depressed basal bone leading to a more compromised situation for rehabilitation. Gross reduction of supporting bone with aging gradually decreases neuro-muscular control further complicates the traditional denture services.

iii). Effect of tooth and bone loss on facial appearance:

Age related facial changes though occur naturally, loss of all or more numbers of missing teeth accelerates the aging process. Due to lack of proprioceptive stimulation from the PLD and surrounding bone during mastication, the orofacial muscles undergo degeneration and lose its tonicity. Gradually they started sagging forming wrinkles on the face.

A decrease in face height occurs as a result of the collapse of bone height when teeth are lost. This results in several facial changes. The decrease in the angle next to the lips and deepening of vertical lines on the lips create a harsher appearance. As the vertical bone loss progressively and rapidly increases, the mandible moves downward and forward deteriorating the normal maxillomandibular relationship creating a pseudoprognathic relation. Over the time, the chin rotates forward and come





closer to the tip of the nose and gives a poorer facial appearance. These conditions also result in drooping of the corner of the mouth leading to an unhappy appearance when the mouth is at rest.

iv). Effect of tooth loss on general health:

It is generally understood and accepted that loss of more or all functional unit of teeth lower down the chewing efficiency. Masticatory performances reduce up to 47% even with the conventional complete denture prosthesis⁷. These people bent toward more intakes of processed carbohydrate and fatty food increasing the risk factors for diabetes, cardiovascular diseases including heart attack and stroke. At the same time lower intake of fruits, vegetable and other fibrous food impair digestion, induces stomach and bowel problems. Several studies in the literature have reported that poor dental function may negatively affect the overall health deteriorating the balanced supplement of vitamins, minerals and other nutritional supplements which favours illness, debilitation and shorten life expectancy. These scientific evidences prove that restoring normal oral health and function may enhance the span and quality of life.

V). Psychological aspect of tooth loss:

There is a variation in attitude amongst individuals towards tooth loss influenced by their socio-cultural believe and behaviours, age, gender and socioeconomic condition. Majority of the population find it difficult in accepting the loss of the first tooth. Over the time they may accept and get adapted to partial edentulism due to loss of one or few teeth. Many of them are bound to accept the edentulism as the natural phenomenon with ageing and cope up with the orally handicap situation due to non availability of oral health services and non affordability for the modern treatment modalities. However, most of the people equate edentulism with changes in their lifestyles, feelings of bereavement, loss of self-confidence and concerns about their appearance. About 80%, of them feel that their facial appearances have changed. These patients restricted their food choice, avoided eating and/or laughing in public⁸. They hesitant about forming new relationships and refuse to let friends or relatives see them without their dentures. Quality of life in terms of their psychological health and social well-being thus get affected by the loss of their teeth.

V. Effect of tooth loss on memory and cognitive response:

Accumulating evidences from several studies^{5,6,9,10} suggest that occlusal harmony and mastication is effective in sending an enormous amount of sensory information to the brain and in maintaining learning and memory functions of the hippocampus. The ameliorative effect of mastication on cognitive function may be negligible in the young, highly functioning hippocampus, but it becomes evident in the hippocampus whose function is attenuated by ageing or by stress inducement. A recent study in functional magnetic resonance imaging (fMRI) and positron emission topography (PET) revealed that mastication increases cortical blood flow⁵ and widely activates various cortical areas of the somatosensory, supplementary motor, and insular cortices, as well as the striatum, thalamus and cerebellum^{6,9}. Mastication immediately before cognitive task acquisition further increases blood oxygen levels in the prefrontal cortex (PFC) and the hippocampus during the task, which is essential for the learning and memory processes, and improves performance of the tasks^{9,10}. These data suggest that mastication is a medication-free and simple way to prevent senile dementia and stress-





related disorders, which are often associated with cognitive dysfunctions such as impaired spatial memory and amnesia. A number of epidemiological studies have reported that a decreased number of residual teeth, decreased use of dentures, and a small maximal biting force are directly related to the development of dementia.

Rehabilitation of Oral function and Esthetics:

Complete functional and esthetic rehabilitation of edentulous patients is near impossible and it is a challenging task to the part of dental professionals as total edentulism may be compounded with multiple factors to make the condition severely compromised. Conventional Removable Prosthodontics cannot totally fulfill the functional and psychological expectation of the patients. The average biting force in relation to first molar of a normal built person with healthy occlusion is 150 to 250 psi which is reduced to less than 50 psi after loss of all the natural teeth. Conventional complete denture cannot restore the individual biting force; it can rehabilitate only 25 to 30 % of the masticatory performances as compared to a dentate individual which is even reduce as the edentulous period increases⁷. Patients wearing complete denture prosthesis for more than 15 years may exert a maximum biting pressure of 5.6 psi because of loss of muscles strength and tone. So the acceptance of removable prosthesis is being reducing amongst the patients. Acceptance of the removable partial denture is reported as the lowest; as more as 20% of the patients who received removable partial denture stop wearing their denture after one year which rises up to 40% after 4 years. The patient wearing the partial dentures often exhibit greater mobility of the remaining teeth, greater plaque retention, increased gum bleeding around the remaining teeth, more incidences of decay and accelerated bone loss of the residual ridge. Completely tooth supported partial denture shows better patients compliance and functions comparing to distal extension base partial denture prosthesis. The 5-year survival rates of partial dentures based upon tolerance and use of the dentures is approximately 60% when replacing molars and 80% for partials completely supported by teeth. This is reduced to 35% and 60% at 10 years respectively. The masticatory performance of conventional complete denture prosthesis is as low as 25 to 30 % compared to natural dentition⁷. Therefore, alternative therapies which improve the oral conditions and preserve residual alveolar bone are often more desirable.

Tooth supported over denture therapy can be a better alternative option which can preserve the neurological perceptions of retaining teeth, prevent resorption of supporting alveolar bone around the remaining tooth root and also maintain neuromuscular control mechanism and mandibular movements. Stability and functional efficiency of conventional complete denture prosthesis can be doubled with attachment retained tooth supported over denture prosthesis which is comparable to implant supported over denture prosthesis. Implant supported or retained prosthesis though lack of mechanoreceptor can improve the biting force, masticatory performances and patients' comfort and satisfaction up to 50% compared to conventional complete dentures⁷. Rehabilitation of oral functions with removable mandibular complete denture is more challenging than with the maxillary removable complete denture. Therefore, the World Health Organization (WHO) recommends two implants supported mandibular over denture as the basic standard of oral rehabilitation of edentulous patients.

It is an established fact that fixed dentures exhibit better efficiency compared to removable dentures supported by soft tissue. Tooth supported fixed dentures can restore up to 60 % of the masticatory





function compared to natural dentition. However, the average life of fixed tooth supported prosthesis is 11 years and the morality rate is influenced by caries and periodontal diseases. Besides, inclusion of healthy tooth as abutment often demotivates the patient in accepting fixed partial denture prosthesis. Implant supported fixed prosthesis as an alternative treatment modality has gained well acceptance by both the patients and restorative dentists in developed countries as it can restore the lost oral function to near normal. It is considered as the third dentition to restore patients functional and esthetics requirement besides improving psychological comfort and social wellbeing. The popularity and acceptance of implant prosthesis as the versatile treatment option in oral rehabilitation from replacing a single tooth to rehabilitation of severely compromised complete edentulism is gaining its momentum even in the developing countries like India. “ALL ON FOUR” and “ANGULATED” active or SLA-active Implant systems have been well accepted for rehabilitation of severely atrophic maxillary and mandibular edentulous arch as they claimed to restore the lost oral function and comfort with early functional loading. Basal Implant systems are also new additions which are being practiced as an alternative approach to conventional implant prosthetic therapy to rehabilitate the atrophic arches to nearly full function with immediate functional loading.

Conclusion:

There are immense technological advancements in the field of Implant dentistry which can satisfactorily rehabilitate tooth loss related quality of life. However, the high burden of treatment expenses is not affordable to common people even in the developed country. Moreover, there is no any comprehensive Government Oral Health Policy with a goal of prevention of the common dental and oral diseases and insurance coverage for oral rehabilitation. There is every doubt that the presently launched highly ambitious National Health Policy “Ayushman Bharat” will not overlook the inclusion of dental treatment and rehabilitation of edentulous condition. So the conventional treatment approaches to retain as many numbers of healthy teeth in mouth to maintain the oral function and esthetics should be revisited so that treatment expanses can be reduced and make them available and affordable to the common people. Government should be proactive to fulfill the fundamental treatment needs of its population for maintaining and improving the oral health as an integral part of the general health and wellbeing.

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Management of Gingival Inflammatory Hyperplasia of patients suffering from systemic diseases. Report of two cases.

*Dr. (Mrs) Daity Jyrwa. BDS, MDS.
Sr. Dental Surgeon.*



Introduction:

Inflammatory Hyperplasia was used to describe large firm nodular growths of oral Mucosa. It represent fibrous and granulation tissue. Clinical epulis, Fibroma, giant cell granuloma, pregnancy Epulis and piogenic granuloma fall under the umbrella of fibrous inflammatory Hyperplasia. The lesion maybe sessile or pedunculated type. The lesion usually developed slowly and asymptomatic . However in some cases

it developed fast, reaches its full size, and remain stable. The size ranges from a few millimeters to several centimeters.

A surgical excision of the lesion is the usual treatment. During the excision irritant agents such as dental plaque, calculus, defective restoration and a source of trauma should be eliminated. The recurrence rate of gingival growth or gingival hyperplasia is much higher in patients suffering with systemic diseases.

Drugs induced gingival enlargement or gingival over growth is a well documented unwanted side effect reported in the literature. Calcium channel blockers such as amlodipine, Nifedipine and others which are used widely in the management of hypertension and in the prophylaxis of Angina. For substantial period of time, this drug was considered a “safe drugs” having relatively less adverse drug reaction (ADR). In conjunction with an increase in the usage of amlodipine, however, an adverse effect of gingival over growth has been reported and evidence has come from several case reports.

Among calcium antagonists nifedipine-induced hyperplasia has been the most frequently encountered gingival enlargement in clinical practice. Lederman et.al. in 1984 were the first to report negative oral effect of nifedipine. Numerous report on gingival hyperplasia with newer generation of calcium channel Blockers, such as felodipine, nicardipine, manidipine and diltiazem, has been documented.

Case Repot -1

A 58 years old female patient reported with a chief complaint of multiple gingival swelling. The lesion was painless but caused discomfort and often bleed during chewing. After Clinical examination and proper Medical History, the patient gave the history of kidney transplant and hypertension for the last two years. She was on medication and after two years the gingiva start swelling in multiple areas of the oral cavity. The swelling increases in size slowly. The patient was explaint about the nature and etiology of the lesion and also the possible reasons for the frequent recurrence of the lesion. Conventional surgical procedure by scalpel method chosen for the excision of the lesion.





Fig I: Preoperative view of the growth in different sites.

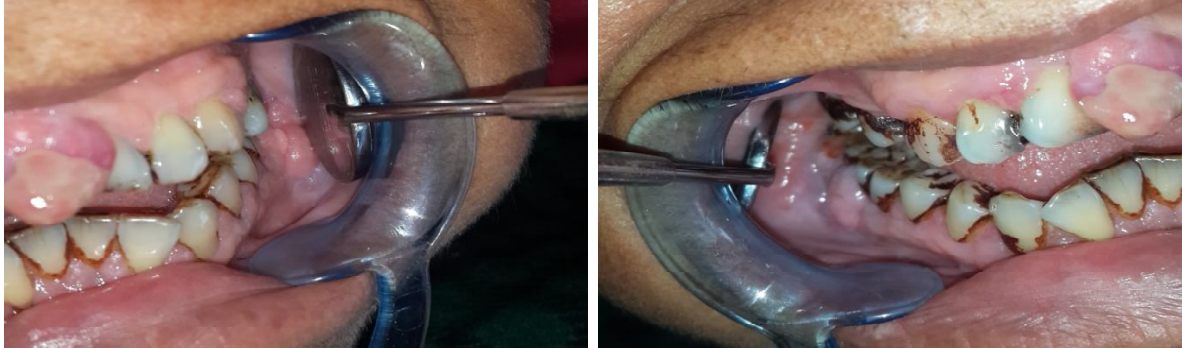


Fig II: During Surgery and excised tissue.



Case II

A 66 years old male report with a history of Type 1 diabetes Mellitus and hypertension. He was on medication for the last 10 years. He reported with a small swelling initially and increased in size gradually.

On proper examination it has been found out that a big swelling more than 2 cm arising from the gingiva. It might be a gingival over growth or an Epulis which is inflammatory in nature, red and bleed on slight provocation. The patient was sent for an X-ray like OPG, RVG, IOPA view, and Blood test to rule out the glucose level. The report shows that the glucose level was so high with 625 mg/dl. The patient was sent to consult with Diabetologist immediately. After 4 months of proper treatment the glucose level reduces to 254 mm/dl. Excision of the growth was done and surgical site healed properly. No recurrence with 3 years follows up.





Fig.I : Preoperative view of the growth measuring more than two cm.



Fig II: During Surgery incision by scalpel method.



Fig III: Placement of coepack.



Fig IV: Two weeks follow up.

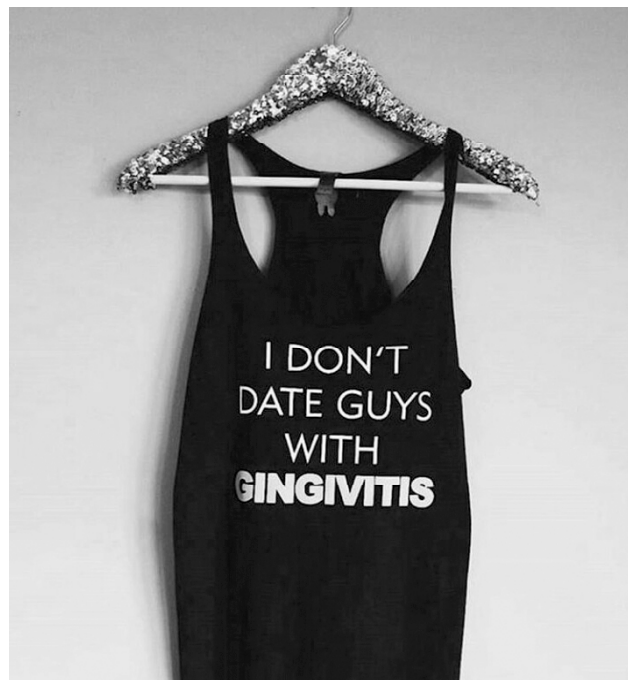


**Conclusion:**

Drug induced gingival enlargements and gingival over growth are usually seen in patients suffering from Hypertension, Diabetes, Leukemia, Cardiac problem, Epilepsy etc. Good oral hygiene should be advice for the patient suffering from systemic diseases, because poor oral hygiene increased the risk of carrying the bacteria from the oral cavity to the whole body through blood streams. Also plaque, calculus and other local factors like trauma from occlusion, habits of chewing bettlenut, consuming tobaccos of any form, all these acts as irritant in the oral cavity which could worsen the problem. Regular visit to a dental surgeon is necessary and routine oral prophylaxis should be done regularly.

(Key words: Condition gingival enlargement, pyogenic granuloma, gingival hyperplasia, inflammatory hyperplasia, complication HBA1c, metabolic control, type 1 diabetes.

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NATIONAL ORAL HEALTH PROGRAMME (NOHP) IN MEGHALAYA

Dr. Lana Emika Lyngdoh Nongbri
State Nodal Officer



INTRODUCTION:

According to World Health Organisation (WHO) Oral Health is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal disease, tooth decay and tooth loss and other diseases and disorders that affect the oral cavity.

Oral health has been neglected over the years especially in the underprivileged areas. Amongst many reasons, low level of awareness among the population and the care providers even, has led to the continued neglect of dental care.

Taking into account the oral health situation in the country, Government of India has decided to assist the state government in initiating provisions of dental care along with other ongoing health programmes implemented at various levels under the National Health Mission (NHM), umbrella.

The government of India has envisaged the National Oral Health Programme (NOHP) for an affordable, accessible and equitable oral health care delivery in a well co-ordinated manner. Funding has been made available through state PIPs for establishment of dental unit, which is equipped with manpower, equipment and consumables.

ORGANISATIONAL STRUCTURE OF NATIONAL ORAL HEALTH PROGRAMME (NOHP):

1. National Oral Health Cell – Chief Medical officer and National Consultant are in charge at National level.
2. State Oral Health Cell – State Nodal officers are in charge at State level.
3. District Oral Health Cell – District Nodal Officer is in charge at District level.

NATIONAL ORAL HEALTH PROGRAMME (NOHP) IN MEGHALAYA:-

Programme was implemented in the year 2015-16 and the programme is active until date.

CENTRES:-

There are 17 functional National Oral Health centres in Meghalaya with Human Resources in position, equipments and consumables 10 more new centres have been approved and yet to be implemented.

ACTIVITIES:-

1. **Infrastructures :** Setting up of fully equipped NOHP centres in all the Districts with human resources in position to cater to all OPD patients as well as screened patients from outreach activities.
2. **Training :** Conducting training to school teachers, health workers, dental surgeons.





3. **Observation of World Oral Health Day :** Observes WOHD independently or in collaboration with IDA: Meghalaya across the state on the 20th of March every year and activities continued for 1 week with effect from 20th – 27th March.
4. **Outreach activities :**
 - Conducting Outreach activities in School and communities
 - Collaborates with RBSK teams, NUHM
 - Distribution of pamphlets, advertisements, Radio jingles etc conducted

REPORTING:-

All the activities are reported to the state Nodal officer every quarter and the State Nodal officer reports to the Ministry. The National Oral Health cell monitors the implementation and progress of the programme from time to time.

CONCLUSION:-

Oral health is integral to overall health and good quality of life. Therefore, Oral Health Care delivery of the country needs to be strengthened for efficient oral health care delivery and improvement of Oral Health indicators and overall health of the population of the country.

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OUR IDA ACTIVITIES

A brief report from the Chairman of the CDH

The Community Dental Health (CDH) is one of the units that is part of the field of dentistry. Through CDH, a team of dentists make community visits to schools and colleges, especially in rural areas, to conduct awareness programmes based on dental and oral hygiene and most specifically on how to care for their teeth and mouth as a whole.

IDA Meghalaya branch, with the assistance of the CDH team, has been able to hold different dental hygiene awareness programmes by visiting schools and colleges in and around the urban and rural areas, focussing more on schools and colleges in the rural locations. We, the CDH team, have conducted many dental camps as part of these awareness programmes. These camps focuses not only on giving awareness but also allows us to contribute our share of kindness by distributing free dental care products such as toothpastes and toothbrushes to these children, the teachers and the parents as well.

In the year 2018, we, along with the collaboration of the National Oral Health Programme (NOHP), have had the opportunity to visit a good number of schools on 20th March, 2018, which is also part of the celebration of the World Oral Health Day. It was a huge blessing not only for the team but also for the people of the community; the children, teachers, parents, who have been able to gain the benefits of such camps and awareness.

As the CDH team, we are glad and grateful to have experienced in the joy of giving and helping out in every way we can to these communities. It inspires and motivates us to do our bit for our society and community and also to do more, help more and work more for the well-being of the whole society.

To conclude, I would like to express my gratitude to Dr. (Mrs.) N. Mawrie, Dr. (Mrs.) Lariker Lyngdoh, Dr. (Miss) Phibankara Marbaniang, Dr. (Miss) Phibaiahun C. Dohling, Dr. Sauraj Dey who have extended their help and assistance and supported us as a team.

“Let us always meet each other with a smile, for the smile is the beginning of love.”

Mother Teresa

Thanking You
Dr. Freddie Kharmawlong
CDH Chairman (2013-2018)

