



IMPRESSIONS

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IMPRESSIONS

JOURNAL OF INDIAN DENTAL ASSOCIATION ATTINGAL BRANCH

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IDA ATTINGAL BRANCH

IDA Attingal Branch was established on January 14th, 2001. Since then, the branch has symbolized unity. The harmony among its members made the branch popular. Over time, the untiring efforts of eminent office bearers and members reached the branch to its current heights. The branch is always promised to deliver something to the community. Certainly, the plethora of programs organized by the branch over the past two decades has impacted the community's oral health. The branch and its members are always there to share knowledge among the dental fraternity and are the torchbearers of ethical dental practice.

IDA Attingal branch is involved in all the national and state activities of the association with great spirit and won many titles too. The branch organizes a multitude of programs including oral health screening camps, oral cancer detection camps, oral health awareness talks, free denture camps for the needy, continuing dental education programs and workshops for the dentists, training programs for the dental assistants, fun activities for its members, observance of important days, distribution of pamphlets and public awareness materials to the community, spreading awareness talks and videos via various social media platforms, financial support to the poor and a free active dental clinic at an orphanage. The branch is always committed to dental excellence and our journal 'Impressions' is its humble attempt to spread scientific communications among the dental fraternity.



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Dr. M. Raveendranath
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Dear Dr. Nripan,

I am extremely happy to note that IDA Attingal branch is bringing out the new edition of "Impressions" its scientific publication. I am very proud to be a part of the journal. My association with IDA Attingal branch is very deep and unforgettable since the support they extended to me, during my term as office bearer in IDA Kerala state especially the state conference held at Varkala, is beyond words. I am aware of the positive contributions by the branch to IDA all these years. I am sure that the branch will continue justice to its members in the future also and the journal is a medium for that for sure. Knowledge sharing and skill enhancement are the must-do activities by the branch for members, especially for budding doctors. I hope IDA Attingal will carry out this sincerely and I wish all the very best for the branch activities.

Thanking you.

Dr. M. Raveendranath



Dr. Terry Thomas Edathotty

President,
IDA Kerala State.

Dear Dr. Nripan,

Very proud to learn about IDA Attingal branch's journal named "IMPRESSIONS." As the name suggests, you have been able to create a big impression with the launch of the 14th volume and first issue. I wish to take this opportunity to congratulate the entire Attingal branch including the President Dr. Deepa G and Secretary Dr. Roshith S Nath for this excellent initiative.

This journal will play a significant role in updating scientific communication among the dental fraternity and help all dental professionals be abreast with the newer advancements in the field of dentistry. IDA Attingal branch always comes out with innovative ideas and journals such as these help in effective communication between branches and strengthen the bond between them. This is highly commendable and I wish you all the very best for a very productive IDA year ahead.

Dr. Terry Thomas Edathotty



Dr. Deebu J. Mathew

Secretary,
IDA Kerala State.

Dear Dr. Nripan T, Editor, Dr. Deepa G, President and Dr. Roshith S Nath, Honorary Secretary and the entire team of IDA Attingal,

Heartfelt congratulations on the inaugural issue of Volume 14 of the Journal of IDA Attingal, "Impressions." Your dedication to updating scientific communication within the dental fraternity and incorporating the latest advancements is truly commendable. As Honorary Secretary of IDA Kerala State, I am proud to witness your efforts in advancing our field. Thank you for your valuable contributions to dental research and practice.

Best regards,

Dr. Deebu J. Mathew



Dr. Deepa. G
President,
IDA Attingal Branch

Dear team,

Season greetings to all of you. I consider this opportunity to share a president's message as one of the most key privileges I had in my career. I also hope that with this leadership role, I will learn a lot about team building and we all together can make a wonderful change in our society. One of the main challenges I have seen in many dentists across the spectrum is the timely decision to ensure continued ethics in community practice. Through this humble opportunity to share my ideas about the same, let us look into how ethical dentistry benefits in the long run, not only in terms of goodwill of the surgeon but also the whole fraternity of practitioners. Ethical dentistry in India is all about doing what's right for the patient. It means always putting their needs first, being honest about their treatment options, and making sure they understand what's going on every step of the way. While being a practicing dentist, there's massive responsibility because people trust you with their health. This is very much in extensive nature due to our civilians and citizens being more prone to lifestyle-dependent chronic diseases. This means you've to treat them with respect, listen to their concerns, make them stay informed on how procedures function, make decisions together, and at times have to pay closer attention depending on the nature of the patient while pitching dental products. You've to be careful and skilled in your work to make sure that all your patients get a seamless experience. Being an ethical dentist means caring about your community too. It's about ensuring everyone has access to good dental care, no matter where they live or how much money they have. Treat your patients well, be honest and careful, keep their information safe, and look out for the whole community. That's how you uphold ethics as a dentist in India, and that's how you make a real difference in people's lives. As an effective team, we can ensure that safe oral hygiene practices are pitched and can also invite collaborations with local bureaucrats. Being an ethical dentist pays off in the long run as even in local communities, word-of-mouth publicity can still contribute 30% of revenue streams. Let us join hands to ensure that our community is safe from the ill effects of lack of proper oral care.

Dr. Deepa. G



Dr. Roshith S. Nath

Hon. Secretary,
IDA Attingal Branch

Seasons greetings to all my friends.

I am very fortunate that I am serving IDA Attingal branch in the capacity of Hon. Secretary. First of all I congratulate our branch CDH Convenor and Editor Journal for earning the State and National Awards in the year 2023.

This year, we are trying to conduct maximum CDE programmes to enhance the knowledge and skills of our dear members. Also we are conducting maximum CDH programmes in our territorial area to create awareness among public and thus increasing the patient flow of our members.

We are proud to say that we were able to help all our members in registering process of Provisional Registration of Clinical Establishment Bill. We will continue to serve our members in the same way.

All the best to Dr. Nripan, Editor Journal 2024 and his team. We appreciate their efforts to put up such magnificent journals.

Dr. Roshith S. Nath

AUTHOR GUIDELINES

About the Journal : Impressions is the official scientific publication of IDA Attingal Branch, which publishes in every four months period.

Aims and Scope : The aim of Impressions is to publish all forms of scientific articles including systematic reviews, original articles, case reports, and review articles pertaining to dentistry. Those articles bring new knowledge to the field are welcomed.

Ethical Considerations : Manuscripts submitted for publication must comply with the following ethical considerations: Written informed consent must be obtained from the subjects before their data included in the study and the informed consent must be archived with the authors. Any data from the patient must be submitted by hiding their identity. All the research should be carried out with prior approval from the institutional or national ethics committee and should be in accordance with the Helsinki Declaration of 1964 (revised in 2008). If animals are using for the research, the authors must follow the institutional or national guidelines for the care of use of laboratory animals.

Manuscript Submission : All the manuscripts should be in English language and are to be submitted electronically at: journalidaatl@gmail.com The manuscript must be original and submitted only to Impressions.

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Abstract : Must include an abstract of not more than 250 words that describe the significance of the article.

Manuscripts : The manuscripts should be of maximum of 3500 words excluding the references.

Illustrations : High-quality digital images must be submitted with a file name matching the manuscript reference.

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Dr. Nripan. T
Editor-in-Chief
Impressions

READING A CASE REPORT BEFORE DOING A CASE

Dear colleagues,

I am happy to present the 14th volume of our scientific publication “Impressions” to you all. This is the first volume edited by our new editorial board for the term 2024 and we are committed to improve the quality of the journal with each new volumes. I thank my office bearers and branch members for continuously supporting me.

Science is dynamic and scientific publications always pave a path for better clinical outcomes. The habit of reading a case report similar to the case you are about to perform can improve the outcome of the procedure. The clinician may be well-versed in the procedure and may have years of experience in doing the same. But with each new patient, there is always something new to learn. A case report includes the step-by-step procedures, photos, and a review of the literature. Case reports are easier to understand than other forms of scientific publications. So I recommend reading a good-quality case report before starting a new case. With the advent of technology, information is at your fingertips. We have to make use of it which can benefit us professionally which in turn improves the quality of life of our patients.

Enjoy reading, Enjoy learning, Enjoy doing!

Dr. Nripan. T

REJUVENATING AESTHETICS USING FLANGELESS DENTURE: A CASE REPORT

¹ Abin A, ² Deekshitha N.G.

ABSTRACT

Complete denture fabrication is challenging when the intra oral conditions of the patient turn out to be less than ideal. Patients may appear with different ridge contours. Ridge contour varies with patients and excessive bulky maxillary ridges often have compromised facial aesthetics as well as retention. Restoring labial fullness in a completely edentulous patient is a sensitive procedure. The thickness of the labial flange further compromises the labial fullness and results in an un-aesthetic maxillary denture. Surgical intervention is required for such clinical conditions. However, sometimes patients are unwilling to undergo any surgical procedure. Hence, to confront such perplexity, an unconventional approach is required in which a prosthetic modification is done in the complete denture. In this article, a non surgical treatment approach with a flangeless complete denture is considered in a patient with severely proclined premaxilla with severe maxillary labial undercuts to achieve comprehensive rehabilitation with the greatest regard to aesthetics.

Keywords : flangeless-denture, proclined premaxilla, prosthodontic rehabilitation

INTRODUCTION

It is inevitable for a prosthodontist to come across patients with different ridge contours in our daily routine clinical practices. These different ridge forms may vary from severely resorbed ones to extensively bulky ridges. An excessively prominent ridge is more commonly seen in the maxilla than the mandible.¹ Pre-prosthetic surgery is mandatory for such cases before proceeding with the fabrication of complete dentures.^{2,3} Such bulky contours of the ridge pose a threat to the aesthetic outcome of a denture. Arrangement of artificial denture teeth becomes difficult due to lack of space and eventually results in an overtly un-aesthetic swollen lip appearance. Pre-prosthetic surgery can of course be a corrective option for such cases, though a major criterion of it includes patient consent. The patient's mental attitude and health

might not always permit the thought of surgery. Hence, in such clinical conditions, when the patient is not very keen on undergoing surgery for an over-contoured ridge, the prosthodontist can modify the art of a conventional denture, and restore it with the help of a flangeless denture, keeping in mind all the basic requirements to be fulfilled by the prosthesis to achieve the optimum result.

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Fig. 1. Pre-operative extra-oral frontal view



Fig. 2. Pre-operative intra-oral frontal view

This case report presents a non-surgical procedure of treating and producing optimum aesthetics in an overly contoured maxillary ridge with severe labial undercut with the help of a flangeless denture to fulfill the patient's needs.

CASE REPORT

A 56-year-old female patient reported the need to replace her missing teeth with dentures. On extra oral examination, the patient had a tapered face with a convex profile, and normal muscle tone (Fig 1). Intra oral examination revealed a U-shaped maxillary arch accompanying a severe labial

undercut and a partially edentulous mandible (Fig 2). The patient had a severely proclined pre-maxilla with bilateral labial undercuts and a prominent labial frenum. The patient was advised alveoloplasty for correction of unfavorable ridge contours followed by the fabrication of maxillary complete dentures. However, the patient was reluctant and refused to undergo any surgical intervention.

Hence, keeping the patient's desire in mind, it was decided to proceed with a flangeless maxillary denture opposing a conventional mandibular removable partial denture.

PROCEDURE

Impression compound was used to make the primary impression of the maxillary arch and alginate impression of the mandibular arch was also made. The custom tray was fabricated on the primary cast. Border molding was done utilizing green stick compound and the final wash impression was done by using light body polyvinyl siloxane. Once the master cast is ready jaw relation was done. Articulation was done and teeth setting was completed. After trial, during the wax-up, the labial flange was completely removed from canine-to-canine. After the trial putty addition silicone impression material was placed over the labial flange area and dewaxing procedure was performed. Packing and curing of heat cure acrylic resin was done in a conventional manner. The final flangeless denture was polished and attempted in the patient's mouth for assessment (Fig 3,4,5,6). Occlusal corrections were done and, the denture was delivered. The patient was reviewed following 24 hours, a week, and one month for post-insertion checkups. The patient was satisfied and had no critical dissensions.



Fig. 3. Finished dentures



Fig. 4. Flangeless maxillary denture



Fig. 5. Dentures in situ



Fig. 6. Post-operative extra-oral frontal view

DISCUSSION

Loss of dentition affects the facial appearance and also creates psychological trauma to the patient. Hence, aesthetic needs and demands are highly subjective.¹ Facial and dental aesthetics significantly influence the prosthetic treatment also.^{3,4} Residual alveolar ridge forms vary from patient to patient from severely resorbed to widely massive ridges.⁴ Some of these abnormal and unfavorable conditions that exist in the edentulous arch may require surgical correction, before the fabrication of dentures, to enable the patient to function more comfortably and efficiently following prosthetic restoration. The overall goal of reconstructive pre-prosthetic surgery is to provide an environment for prostheses that should restore function, be stable, aid retention, preserve associated anatomic structures, and satisfy aesthetics.

However, the use of surgical aid is not always possible, which may be due to the patient's unwillingness or due to certain associated medical conditions (uncontrolled diabetes, hypertension, heart ailments.) that restrict surgical rehabilitation of compromised edentulous ridges.^{2,5,6} Due to the differential resorption pattern of residual alveolar ridges, an excessively prominent ridge with labial undercuts is more commonly seen in a completely edentulous maxilla. Hard tissue undercuts cause the negative effect of the retention of the prosthesis, which is obtained buccolingually and is the most commonly available mechanical means of retention in completely edentulous patients. A flangeless denture is one of the non-surgical convention approaches to preserve the ridge.

Many authors have referred to this as "gum fit dentures" and "ridge grip esthetic prosthesis".⁷ The flangeless dentures also known as a "wing denture"

in which the labial flange is segmented in the labial frenum area and two wings show up from either side, which provides adequate space for the labial frenum.^{8,9} Another conservative treatment option includes the use of soft liners that can easily adapt to the undercut area without causing trauma to underlying mucosa.¹⁰

CONCLUSION

Flangeless dentures provide an easy, simple, conservative, economical, and painless substitute to conventional dentures to improve the facial aesthetics of patients with excessively proclined pre-maxillary ridges with associated severe maxillary labial undercuts. They prove to be successful in providing satisfactory aesthetics and better patient acceptance.

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LIGAPLANTS : A MISSING LINK REPLACED IN IMPLANT DENTISTRY

¹Sneha, ²Deepika C.S, ³Remya Ravi, ²Dhanya V.H

ABSTRACT

Dental implants are excellent solutions to replace missing teeth, if the cases are selected wisely. However, the absence of a periodontal ligament between the osseointegrated dental implant and the alveolar bone is one shortcoming. This can be overcome by the use of tissue-engineered periodontal ligament along with suitable dental implant material.

Keywords : ligapplants, periodontal ligament, tissue engineering, osseointegration.

INTRODUCTION

Dental implants have revolutionized modern dentistry, providing a durable and esthetically pleasing solution for missing teeth. One of the primary advantages of dental implants is their ability to mimic natural teeth and they also contribute to oral health by preventing bone loss. Despite the numerous benefits, it is essential to consider the potential challenges. The implant treatment process requires careful planning, and not everyone is a suitable candidate. Factors such as bone density, overall health, and oral hygiene play crucial roles in the success of the procedure. When the natural teeth are lost, the periodontal ligament cells are also lost. Therefore, these cells cannot participate in the wound healing process around the implant. So at present optimal healing around implants is considered to be intimate bone-to-implant contact, called osseointegration.¹

Osseointegrated implants are the most widely used because of their longevity. The main

disadvantage of these implants is that they lack periodontal ligament as that of natural dentition. These implants are ankylosed and lack physiological mobility and shock-absorbing capacity as compared to natural teeth. Such problems could be resolved if an implant with periodontal ligament could be developed, which can be achieved by ligapplants, which integrates periodontal ligament cells with the implant biomaterial.²

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DISCUSSION

'Ligaplasts' a term derived from 'ligature' and 'implant' takes a step further by incorporating ligature elements, enhancing the implants connection with the bone and surrounding tissues. The innovative design not only promotes stability but also improves biomechanics, mimicking the natural tooth's support system.³

In ligaplasts, the cells prepared in laboratory, cultured on biodegradable scaffolds cultivated by in vitro techniques are incorporated to the implant surface.^{4,5} Buser D et al., showed that titanium dental implants when placed in contact with retained root tips, the periodontal ligament of these roots served as a source for cells which could populate the implant surface during healing.⁶ In another study, Gault et al. used ligaplasts for tooth replacement.⁴ The study involved animal experiments on mice and canine models as well as human clinical trials. In the canine model, periodontal ligament formation was observed and a new layer of tissue resembling repair cementum was formed on the ligaplast surface. Nyman S et al., also confirmed that periodontal ligament cells have the potential to re-establish attachment onto the teeth surface.⁶

The geometry of ligaplasts is meticulously crafted to optimize primary stability during implant placement. This design facilitates efficient load distribution, reducing stress on surrounding bone and promoting a secure foundation for prosthetic restoration. Hence their use may overcome the disadvantages of conventional implants and may provide better physiological results, thereby increasing the longevity of the implant.⁷ Their unique design facilitates implant placement even in compromised bone conditions, expanding the scope of implant therapy for a broader patient

population. This adaptability is crucial in overcoming limitations posed by traditional implant techniques in challenging cases. Added to that, Kiong et al., had mentioned that ligaplasts as tooth replacement having decisive benefits over the conventional dental implants and the surgery being moderately simple.⁷

Various experiments have been conducted to create periodontio-integrated implants that can maintain the form, function and proprioceptive responses which would be similar to that of a natural tooth. Based on these solid evidences, the likelihood of the future clinical use of ligaplasts can be stated strongly. It is imperative to keep in mind that the growth of the periodontal ligament cannot be predicted in a particular desired site.⁸

For the success of ligaplasts there should be formation of regenerative periodontal ligament, for this, site specific signalling is a crucial factor which is mediated by an anatomical code, written in expression patterns of homeogene-coded transcription factors. The homeoproteins influence the synthesis of cell surface and signalling components, and signals from the cell surface feedback to modulate homeogene expression, whereby cell identities are established according to the anatomic site and tissue type.⁹ The advantages and disadvantages of ligaplasts in comparison with conventional dental implants are listed below:

Advantages :^{3,5}

1. It induces proprioception i.e. the sense of self movement and position of the body.
2. Houses vital cells such as osteoblasts, osteoclasts, fibroblasts, cementoblasts, undifferentiated stem cells which are osteoconductive in nature.

3. Provides shock absorbing capacity, giving the tooth some movement in the socket.
4. Provide anchoring similar to that of natural dentition.
5. It also provides anchoring for the growth and development of alveolar housing.
6. Gingival recession and bone defects are reduced.
7. Mimics the natural insertion of natural tooth roots in the alveolar process.

Disadvantages :^{2,5}

1. Caution should be taken while culturing ligaplasts i.e. the temperature, the cells that are used for culturing, duration of culturing, etc., needs to be closely and accurately monitored.
2. There can be failure of ligaplasts due to poor host response to accept the implant or there could be failure of periodontal cells to get induced.
3. Prolonged cell culturing may favour the appearance of non- periodontal ligament cells

CONCLUSION

The evolution of dental implants, exemplified by ligaplasts, marks a significant stride in implant dentistry. The combination of osseointegration and ligature elements not only enhances implant stability but also opens new avenues for treating diverse clinical cases. As technology continues to advance, these innovations contribute to the ongoing pursuit of providing patients with durable, functional and aesthetically pleasing solutions for missing teeth.

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HERBAL MEDICINE TULSI IN DENTISTRY

¹ V.S. Nithin, ² Abhilash R. Krishnan, ³ Tharun Varghese Jacob,
⁴ Deena C. Thomas, ⁵ Alaka Subodh, ⁶ Suprasidh S

ABSTRACT

Tulsi or Ocimum Sanctum or Holy Basil is a medicinal plant. It belongs to the family Labiatae. Medicinal plants are excellent sources of different types of medicines and various bioactive molecules. Herbal plant extracts are very useful, have fewer side effects and are the major sources of medicines that are very helpful in the management of various diseases. The phytochemicals in Tulsi are known to have anti-inflammatory, antiseptic, antimicrobial, analgesic, anti-stress, immunomodulatory, and antioxidant properties. So it is very beneficial to use Tulsi as a herbal medicine as compared to chemically synthesized drugs. This paper aims to focus on the applications of Tulsi in Dentistry.

Keywords : Ocimum Sanctum, Labiatae, Bioactive

INTRODUCTION

Ocimum Sanctum (Tulsi) with its origins in the Indian subcontinent is considered a sacred plant. Due to its medicinal value and health-promoting effects, Tulsi occupies a prominent position in Ayurvedic herbal medicine. Tulsi is considered as revitalizing adaptogen and anti-stress agent due to its ability to enhance health and longevity.¹ Ocimum Sanctum belongs to the Labiatae family and it mainly grows in tropical and subtropical belts of the world including India.² Mainly three distinct types of Tulsi are present. Ocimum tenuiflorum which is commonly known as Ocimum sanctum has two cultivars that are phytochemically and botanically distinct from one another. These cultivars are known as Rama or Sri tulsi with green leaves and Krishna or Shyamatulsi with purplish leaves. Ocimum gratissimum is a third type of tulsi, known as wild / forest tulsi or Vanatulsi³.

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CHEMICAL COMPOSITION

1. Eugenol

Tulsi leaves contain a significant amount of eugenol, often between 40% and 71%. A lot of anti-inflammatory, antioxidant, anti-allergic, anti-mutagenic, anticancer and analgesic properties are found in eugenol.³ Eugenol is a guaiacol substitute with an allyl chain. Eugenol is formed from its precursor phenylalanine and it belongs to the group of chemical substances known as phenylpropanoids⁴,

2. Caryophyllene

The caryophyllene is a fragrance and flavor enhancer component in many products. The caryophyllene has many antibacterial properties as well.⁵

3. Ursolic Acid

Ursolic acid is a terpene which is a secondary metabolite of plants. It is soluble in organic solvents but insoluble in water.³ Ursolic acid markedly decreases the level of Bcl2 to trigger apoptosis in human MCF7 cells.

4. Rosmarinic Acid

It is a type of flavonoid that is commonly discovered in plants belonging to the family Lamiaceae. It has numerous nutritional qualities and powerful antioxidant activity.⁶

5. Apigenin

Apigenin is an edible flavonoid that is also known as 4,5,7 trihydroxyflavone. It is popular as a health-promoting drug due to its low intrinsic cytotoxicity and differential effects on normal versus cancer cells. These two factors contribute to apigenin's ability to target cancer cells more

specifically than normal cells³

6. Carvacrol

Carvacrol (5-isopropyl-2-methylphenol) and its isomer thymol (2-isopropyl-5-methylphenol) have multiple biological effects.³ These are monoterpenoid phenols, which are the primary compounds in the essential oils of many plants belonging to the family Lamiaceae and Verbenaceae.

DENTAL APPLICATIONS OF TULSI

1. Dental and mucosal pain

Tulsi contains a significant amount of eugenol. Tulsi is a powerful COX-2 inhibitor. This analgesic property of tulsi is helpful in the treatment of dental and mucosal pain⁷

2. Oral prophylaxis

The powder form of tulsi leaves mixed with mustard oil is employed as toothpaste for tooth brushing. The powdered tulsi leaves help to reduce halitosis and maintain good oral health⁸.

3. Gingival and periodontal diseases

Massage with tulsi powder is highly effective in the treatment of many gingival and periodontal diseases⁸.

4. Dental caries

The streptococcus mutans is usually a key microorganism causing dental caries. The extract of Tulsi(4%) has high antimicrobial activity against streptococcus mutans⁸

5. Candidiasis

Linalol and eugenol which are present in the essential oil of tulsi are effective against two strains

of candida namely *Candida albicans* and *Candida tropicalis*. Linalol is more effective than eugenol in the management of candidiasis⁹.

6. Oral lichen planus

The tulsi has good immunomodulatory action and acts on the skin and hemopoietic tissues. So the tulsi is effective in the treatment of oral lichen planus.

7. Pemphigus

Due to the strong immunomodulating property, Tulsi is effective in the treatment of pemphigus. Tulsi helps to heal sores and blisters.¹⁰

8. Ulcers

The Tulsi has potent anti-ulcerogenic and ulcer-healing properties. Tulsi in a dose of 100mg/kg is found to be effective in the treatment of ulcers.¹¹ The cytoprotective effect rather than antisecretory activity helps to heal the ulcers quickly. Tulsi is effective in both oral ulcers and peptic ulcers.

9. Dietary supplements

The Tulsi is a rich source of vitamin A, Vitamin C, zinc, and iron. It contains a rich source of chlorophyll and other polynutrients. It can be used as a dietary supplement in oral diseases due to a deficiency of these nutrients.¹²

10. Endodontics

Tulsi extract with calcium hydroxide can be used as an obturating material in primary molars.¹³

11. Oral submucous fibrosis

A combination of 1gm tulsi powder and 1gm of turmeric powder whenever applied locally 3-4 times each day can essentially increase mouth

opening and diminish the burning sensation in the mouth.¹⁴

CONCLUSION

Tulsi is a legendary herb which is having a lot of medicinal value. It is very beneficial in treating oral diseases because of its anti-inflammatory, antibacterial, ulcer healing, antioxidant, and immunomodulatory properties. Daily addition of Tulsi to the diet or as an adjunct to drug therapy can significantly help in the prevention or reduction of various disease conditions.

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AN INTRODUCTION TO SILVER DIAMMINE FLUORIDE

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ABSTRACT

Silver diammine fluoride, or SDF, has become a common topic in preventive and caries management dentistry within the last decade. Being a newer product, many questions about its history and usage as both a preventative and caries-management tool have yet to be explained. This article addresses the properties, indications, contraindication of silver diammine fluoride for caries management and how silver diammine fluoride is being utilized to prevent caries and arrest the progression of active carious lesions.

Keywords : Silver diamine fluoride, dental caries, caries prevention

INTRODUCTION

Silver diammine fluoride (SDF) is a useful tool which aid in the prevention of dental caries. Laboratory studies performed on extracted teeth have found that biofilms were not able to form on teeth that were treated with SDF. One unique advantage of SDF is that its preventive effect is widespread in the oral cavity. Even when SDF is applied to only a single tooth, the preventative effect is experienced on the adjacent teeth.¹ This antimicrobial effect is profound, leading to a “zombie effect” in which bacteria killed after being exposed to SDF can contribute to killing of other active cariogenic bacteria in the mouth.² Hence SDF is a topical medicament to treat and prevent dental caries and relieve dentin hypersensitivity. This medicament can be applied to the teeth as soon as caries is detected.¹

SDF got clearance from the United States Food and Drug Administration (FDA) as a Class II Medical Device, in August 2014. Its ability to block dentinal tubules allowed it to be classified as a

medical device rather than a drug, paving the way for expedited approval. In October 2016, the FDA awarded 'Breakthrough Therapy Designation' to SDF given its ability to arrest dental caries in children and adults.³ This compound, $\text{AgF}(\text{NH}_3)_2$ is commonly misspelled or misinterpreted as Silver Diamine Fluoride, when in fact the proper terminology is Silverdiammine fluoride as it contains two amine groups (NH_3). The use of the

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term “Diamine” is very ubiquitous; however, it has become an accepted term both in the scientific and marketing literature. Silver Diammine Fluoride (SDF) has been used extensively in countries other than the United States of America for many years to treat dental caries.⁴

DISCUSSION

SDF is a colourless liquid that contains Silver particles and 38% (44800 Parts Per Million [ppm]) Fluoride Ion, which at Pouvoir Hydrogen (pH) 10 is 25% Silver, 8% Ammonia, 5% Fluoride, and 62% water. This is referred to as 38% SDF.^{4,5}

The resurgence in the use of Silver Ion products in dentistry stems from the growing movement to shift the surgical management of dental caries to a non-invasive procedure in modern medicine, there exist three broad levels of healthcare: primary, secondary, and tertiary care.⁶ For example, primary care of patients with non-insulin-dependent diabetes mellitus includes preventive measures like eating a healthy diet, maintaining a healthy body weight, and regular exercise. Secondary care includes interventions with medications while tertiary care involves advanced and complex procedures.⁷

Indications and usage

- High caries-risk patients with anterior or posterior active cavitated lesions.
- Cavitated carious lesions in individuals presenting with behavioral or medical management challenges (mentally retarded individuals).
- Patients with multiple cavitated carious lesions that may require multiple appointments.
- Carious lesions that are difficult to treat.

- Patients with little access to dental care.
- Active cavitated carious lesions with no clinical signs of pulp involvement.

Contraindications

- Individuals who are allergic to silver
- Teeth requiring pulpal therapy (i.e., Irreversible pulpitis or necrosis)

Procedure

Before SDF application, dentinal caries excavation is not necessary. Dentinal caries excavation may help reduce the proportion of arrested carious lesions that become black.⁸

- Remove gross debris from cavities to allow better SDF contact with denatured dentine.
- Minimize contact with gingival and mucous membranes to avoid potential pigmentation or irritation. It is better to apply cocoa butter or use a cotton roll to prevent inadvertent coating on the surfaces of carious lesions or protect the surrounding gingival tissues.
- Dry the affected tooth surfaces with a gentle flow of compressed air or using a cotton roll/gauze.
- With the help of a micro brush remove excess liquid before application and apply SDF only to the affected tooth surfaces.
- Remove excess SDF with gauze, cotton roll, or pellet to minimize systemic absorption. Continue to isolate the site for up to three minutes.

Application Time

In clinical studies, the application time of SDF ranged from 10 seconds to three minutes. The recommended time of manufacturers spans from 30

to 60 seconds. A current review states that application time in clinical studies does not correlate with the treatment outcome. More studies are needed to confirm an ideal protocol.⁸

Post-operative Instructions

The manufacturers of SDF list no postoperative restrictions. Eating and drinking immediately after its application is acceptable. Patients may be instructed to brush with Fluoride toothpaste following SDF application.^{8,9}

Clinical trials of SDF done so far have concluded that it is better to refrain from eating or drinking for 30 minutes to one hour. However, more clinical studies are needed to establish best practices.

Adverse reactions of SDF :

- Metallic/bitter taste
- Significant desquamative processes. The use of petroleum jelly will help address this problem (E.g. Ulcerative Gingivitis, Stomatitis)
- Small white mucosal lesions. This will automatically disappear in 48 hours.
- Temporary staining of skin
- Staining of carious lesions

Advantages and Disadvantages

- Caries lesions can be arrested.
- Caries is prevented from invading the pulp without subsequent pain and loss of vitality.
- SDF application can be delayed in uncooperative children with early childhood caries until he/she is mature enough to cooperate with the procedure

- Currently, young children with dental caries, who are uncooperative, are treated under general anesthesia.

Adjunctive treatments to SDF

1. Placement of Glass Ionomer Cement (GIC) over an SDF-treated lesion using Silver Modified Atraumatic Restorative Technique (SMART). The placement must be done several hours or days after initial SDF placement, as ammonia in the medicament can corrode glass.^{9,10}

2. SDF can also be used in indirect pulp capping in deep lesions approximating the pulp and has shown remineralizing efficacy as GIC and Calcium Hydroxide [Ca(OH)₂].¹⁰

CONCLUSION

The use of SDF in dentistry has been drawing more attention as a caries-arresting agent. The meteoric rise in the popularity of this material in the United States of America (USA) reflects its acceptance as a safe, effective, efficient, and equitable Caries control agent.

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ORAL CARE FOR CHILDREN WITH SPECIAL HEALTHCARE NEEDS IN DENTISTRY: A REVIEW

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ABSTRACT

Oral health care of Children with special health care needs is often a neglected topic. These special children require extra attention and care for their oral health care and are treated with special methods in a dental chair. The present article emphasis various aspects of oral health care of these children.

Keywords : Children with special healthcare needs, oral health care

INTRODUCTION

Children with special healthcare needs (CSHCNs) comprise an expansive section of society, encompassing children living with chronic physical, cognitive, communication, and/or behavioral difficulties including children with cerebral palsy, developmental delays, and those who are medically compromised.^{1,2} They require extra attention in oral health care. Pediatric dentists have traditionally been viewed by the dental community as the specialists best prepared to deal with this group of children.²

DISCUSSION

Special healthcare needs are defined as, 'any physical, developmental, mental, sensory, behavioral, cognitive or emotional impairment or limiting condition that requires medical management, healthcare intervention and/or the use of specialized services or programs. The condition may be congenital, developmental, or

acquired through disease, trauma, or environmental cause and may impose limitations in performing daily self-maintenance activities or substantial limitations in a major life activity.³

In addition, CSHCN are at increased risk for dental diseases. Neuromuscular, acquired, or genetic disorders often cause alterations or defects in skeletal and facial structures, tooth number and morphology, eruption pattern, and malocclusion.

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Certain medications containing sweeteners can cause an increased incidence of caries in this population. It is generally agreed among dentists that these children have higher rates of poor oral hygiene, gingivitis, and periodontitis.⁴ Delay in tooth eruption is one of the abnormalities seen in CSHCN; this delay can sometimes even extend to two or three years of age. Another anomaly is malformed teeth; this may lead to crowding or poor alignment of teeth, leading to dental caries and periodontal diseases.⁴ For children with learning disabilities or cerebral palsy, there is a high possibility that they may show bruxism.^{5,6}

CSHCN resulting from brain injury or genetic conditions can suffer from seizures that put them at increased risk of traumatic dental injuries.⁷ Medication with high sugar content is an additional concern, as this will increase the chances of developing dental caries.⁷ Furthermore, medications used to manage seizures can result in gingival overgrowth; and xerostomia, which increases the risk of oral disease.^{7,8} Frequent vomiting, gastroesophageal reflux, reduced saliva flow, and infrequent or limited brushing can also contribute to the development of dental caries in these children. There is less chance of dental caries being treated in children with learning difficulties, and in cases where treatment is received also, the likelihood of extraction is higher. CSHCNs also have limitations in performing day-to-day oral hygiene measures like tooth brushing due to impaired motor, sensory, and intellectual disabilities.¹⁰ Even though CHSCNs require more healthcare visits than healthy individuals, they suffer from the limited availability of healthcare services.^{3,11,12}

There has been little improvement in the science of management of CSHCNs over the past

years. Only a small percentage of dental practitioners and the associated workforce have acquired the awareness and knowledge of CSHCNs.¹³ The majority of pediatric dentists became default practitioners for all children, including CSHCNs in these scenario.¹⁴

Comparatively, the proportion of dental care teams who show an unwillingness to attend patients with special healthcare needs is increasing. One of the main reasons for this is the lack of awareness and specialist knowledge to approach patients with special healthcare needs, followed by difficulty to treat patients with special healthcare needs.¹⁴

Utmost care is required to maintain the oral health of these children.¹² In addition, parents should be educated to assist them in oral hygiene measures (brushing/flossing/fluorides), in preventing injuries to oral cavity and associated structures, diet counselling, and information on growth and development.¹⁵

CONCLUSION

A collaborative approach between health care professionals is needed for the holistic care of a special child. Key messages of prevention of oral disease should be reinforced and appropriate signposting and referral to dental service is required. In addition, dentists should have proper knowledge and training in order to adapt their practices so that the needs of these individuals in terms of oral healthcare can be met. It is important to provide appropriate oral care in order to promote quality of life and good health for everyone, especially for children with special healthcare needs

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- All pre existing illness covered for members and after one year for family
- No additional premium for pre existing illnesses
- Newborn baby cover from day 1 without any additional premium*
- Cashless treatment facility available*
- Standard treatment charge reimbursed*
- Premium subject to revision each year in accordance to cash out flow
- Policy premium in shared and hence the lowest figure quoted
- Minimum exclusion applicable for payment denial
- Premium paid is eligible for income tax exemption under section 80D.

RENEWAL-30th SEPTEMBER



SUPER TOP-UP



Super Top-Up plan offers medical cover when a single or multiple Claim amount Exceeds the threshold limit as chosen by you.



Super Top-Up plan would consider the total of all bills that are submitted, regardless whether they are for a single event or multiple events, but those bills should be within the Super Top-up policy period.

HOPE MEDI Claims

Claim Management Guidelines-Reimbursement

For reimbursement of claims, claim form, discharge summary, discharge bill (summary and detailed) from the hospital, medical certificate, investigation reports etc., should be submitted to TPA through M/s Jubilee Insurance Brokers **within 15 days of discharge from hospital.**

**In emergency contact:
Hon. Secretary IDA HOPE
@9847240328**

Getting Hospitalised??

Contact:
**Jubilee Insurance
Broking Services**
Rahul R: 7736810082
Jomcy George : 9544157066



IMPRESSIONS

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