



PREVENTIVE AND PROMOTIVE TENETS OF AYURVEDA FOR DENTAL HEALTH

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ABSTRACT

Dental caries is the progressive destruction of enamel, dentine, and cementum initiated due to the microbial activity on the tooth surface. It is one of the most common problems in the Shalakyia OPD. Based on the clinical signs and symptoms, it can be co-related with Krimidanta. Dantadhavana is one aspect of dinacharya that is beneficial in maintaining tooth health. Acharyas mentioned various plant and tree-origin twigs that can be used for dantadhavana. To maintain oral health, act as preventive and curative measures for dental care.

Keywords: *Guda, Ano-rectum, Sushruta Samhita, etc.*

INTRODUCTION

Oral health is the key indicator of the individual's overall health and quality of life. It can be affected by various diseases like dental caries, oral carcinoma, and periodontal diseases. Oral health has been one of the significant fields of concern since ancient times. Teeth are very precious organs of the body, governing many functions like chewing, speech control, giv-

ing shape to the mouth, and, most importantly, maintaining the beauty of the face. Once they are destroyed, they cannot regrow¹. Acharya Sushruta describes eight Danta Rogas, and Krimidanta is among them, gradually resulting in tooth loss if not treated in time. Krimidanta is characterised by black discoloration, cavity formation, swelling, pus and blood ooz-

ing and severe pain². It occurs due to the vitiation of Vata followed by Pitta and Kapha.

According to the World Health Organization (WHO) technical report 1995, 19 billion individuals are affected by dental care annually. Thus, this disease poses a challenge to dentists. All these facts leave scope for searching for a better remedy for the problem.

Ayurvedic texts explain several medicaments for strengthening teeth and gums. These remedies are made from various plants and applied to the gums and teeth in powders, oils, etc. In addition to this, bloodletting is also described in the classics. In the management of Krimidanta, drugs having Krimighna (antimicrobial), Vranaghna, and Ushna Veerya are to be used, which can relieve toothache and Krimi³.

Ayurvedic Review:

Krimi: is made up of two words, "Krum" + "In" which means Keet (Insect) Roga. Here, Danta means tooth, and together, they make Krimidanta.

Samanya Nidana and Samprapti of Krimidanta:

Krimidanta occurs mainly due to Vata Dushti. Black discoloration, cavity formation, loose teeth, pus formation, swelling, and pain characterise it. Generally, stale, static food that remains between the teeth triggers Krimidanta or dental caries. As the food stuck between the teeth starts to decay, bacteria (Krimi) grow, causing teeth to discolor. Another factor that causes Krimidanta is a deficiency of calcium and vitamin D.

Nidana Sevana → Vitiating of Vata Dosha → Krimidanta.

Samanya Chikitsa for Krimidanta:⁵

Chikitsa of Krimidanta has been described beautifully by Acharya Sushruta; he has mentioned two stages of Krimidanta: movable Krimidanta and immovable Krimidanta. These are described as follows,

1. Swedana, Raktamokshana, Vataghna Avapidana, Sneha Gandusha, Lepana, and Snigda Ahara treat movable Krimidanta.
2. The treatment of immovable Krimidanta is done by extraction, cauterization and Nasya.
3. Kriyakalpa is also one suitable treatment method for Hinga, Kayaphala, Hirakasa, Sarjikshara, Kushta,

and Maricha churna. Siddha taila is used for Kawala or Gandusha.

In addition to the above-mentioned treatment, Krimidanta also mentions some contraindications (Apathya), which include the avoidance of sour fruits, cold water, dry food, and hard food⁶.

Modern Review:

Dental means teeth. Caries means decay of the bones or the teeth. Decay means to fall off, to decrease, and to deteriorate. Permanently damaged areas in teeth that develop into tiny holes are called dental caries. Dental caries is a Microbial disease of calcified tissues of teeth characterised by demineralization of the inorganic portion and destruction of the organic substance of the tooth. It is a prevalent disease among tooth problems. In India, more than 10 million cases of dental caries are found annually.

Etiological factors

- 1) Dietary factors include eating sugar-rich food that increases acid production, which damages tooth enamel. Sticky foods remain on the surface of the tooth for a longer time. Carbohydrates rich diet more causes caries—inadequate calcium and vitamin D intake in the diet.
- 2) Microorganisms such as streptococcus mutans, actinomyces viscosus, lactobacillus acidophilus, etc.
- 3) Systemic factors, which include hereditary and pregnancy.
- 4) Host factors include poor oral hygiene and improper brush technique.
- 5) Enamel hypoplasia predisposes more dental care.
- 6) Teeth with high percentages of fluoride are more resistant to caries.
- 7) Crowded and irregular teeth are not readily cleansed during natural mastication.
- 8) Dental appliances like partial dentures, space maintainers, and orthodontic appliances increase the retention of food debris and plaque.
- 9) Salivation, both thick ropy and thin watery saliva, is responsible for caries.

Types of Treatments:

1. Filling
2. Alloy or porcelain crown covering.

3. Root Canal Treatment (RCT)
4. Extraction of the tooth

Prevention

- 1) Great oral hygiene.
- 2) Regular Dental checkups.
- 3) Brush the teeth twice daily using fluoride rinse, paste, or gel.
- 4) Flossing after brushing must be done because continuous eating of sugary food and drinks supply the acid damaging the teeth. Flossing once or twice a day with fluoride gargling can help to remove food particles from between the hard-to-reach areas of teeth that might be missing.

Oral hygiene is an integral part of Dinacharya, and Swasthavritta mainly focuses on maintaining good health by following proper hygiene, which is beneficial in treating tooth-related ailments. Which mainly focuses on its aim Swasthasya Swastha Rakshanam and Aturasyavikara Prashamana⁷. **The process of Dantadhavana-Acharyas has mentioned the** process of Dantadhavana in different Samhitas in Dinacharya. Acharya Charaka has mentioned that Dantadhavana should be done twice a day⁸. One should brush one's teeth with the twigs of Arka, Nyagrodha, Khadira, Karanja, Kakubha (arjuna), etc. After Mala Mutra Tyaga sitting steadily facing the east or north and keeping mum⁹. Acharya Yogaratnakar mentioned that one should start brushing with the lower teeth.¹⁰

Due to Vata, the taste of mouth becomes Kashaya, and Katu, due to Pitta & Kapha, the taste of mouth becomes Madhura. So, while choosing Datun one should choose. Datun of opposite Rasa.

Length and Appearance of Dantadhavana:

According to Ayurveda, Dantadhavana should be twelve Angula long and Kanishthika Anguli Praman. A twelve Angula long, thick as the little finger, soft, knotless and intact twig should be chewed with teeth

(to form the brush) then each tooth should be brushed with that soft brush.¹¹

Pramana of Dantadhavana According to Vrana:

Todarnanda, in his classic, mentioned different lengths of Dantakastha for people of different Varna (cast); according to this, 12, 10, 8 and 6 Anguli (finger) Dantakastha should be used by Brahmana, Kshatriya, Vaisya and Ksudra, respectively.¹²

Drugs Used for Dantadhavana:

According to Acharya Charaka Katu, Tikta, Kashaya Dravyas should be used for Dantadhavana¹³. Acharya Sushruta also mentioned Katu, Tikta and Kashaya Dravyas, along with Madhura Dravyas for Dantadhavana.¹⁴ Acharya Charaka named many drugs. Like Karanja (Pongamia Pinnata), Karaveera (Nerium indicum), Arka (Calotropis Procera), Malati (Jasminum Grandifolium), Kakubha (Terminalia Arjuna), and Asana (Pterocarpus Marsupium) for Dantadhavana.¹⁵ Acharya Sushruta mentioned that Madhuka is Srestha in Madhura Dravyas, Karanj (Pongamia Pinnata) Srestha in Katu Dravyas, Nimba (Azadirachta Indica) is Srestha in Tikta Dravyas, and Khadira (Acacia Catechu) is Srestha in Kashya Dravyas for Dantadhavana.¹⁶ Acharya Sushruta mentioned Tejovativadi Churna for Dantadhavana. He mentioned one should use Dantadhavana coated with Madhu, Saunth, Marich, Pippali, Dalchini, Ela, Tejovaha, Taila, Saindhava, Teja bala Churna for brushing teeth.¹⁷

Drugs Contraindicated for Dantadhavana:

Acharya Vagbhatta contraindicated these drugs for Dantadhavana. Sleshmataka (Cordia dichotoma), Arishta (Azadirachta indica), Vibhitaki (Terminalia bellerica), Dhanavaja, Bilwa (Aegle marmelose), Jal-anirgundi, Shigru (Moringa oleifera), Tinduka (Disopyros tomentosa), Kovidara (Bauhinia purpurea), Shami (Prosopis cineraria), Pilu (Salvadora persica). Guggulu (Commiphora mukul) etc.¹⁸

Plants Used for Dantadhavana:¹⁹

NAME	Latin name	Family	Rasa	Guna	Karma	Pharmacological action
Karanja	Pongamia pinnata	Fabaceae	Tikta, Katu, Kashaya	Laghu, Tikshna	Kapha-Vatahara	Anti-inflammatory, antioxidant and anti-ulcer activity
Arka	Calotropis procera	Asclepiadaceae	Katu, Tikta	Laghu, Ruksha, Tikshna	Kapha-Vatanashaka	Anti-bacterial, wound healing, anti-inflammatory, anti-cancerous, analgesic
Malati	Jasminum grandifolium	Oleaceae	Tikta, Kashaya	Laghu, Snigdha, Mridu	Tridosha shamaka	Anti-bacterial, anti-inflammatory, anti-ulcer, anti-microbial, antioxidant
Arjuna	Terminalia arjuna	Combretaceae	Kashaya	Laghu, Ruksha	Kapha-Pittashamaka	Anti-microbial, anti-fungal, anti-tumor, expectorant, anti-cancer
Asana	Pterocarpus marsupium	Fabaceae	Kashaya, Tikta	Laghu, Ruksha	Kapha-Pittashamaka	Antioxidant, anti-inflammatory, analgesic, anti-microbial, anti-fungal
Madhuka	Madhuka indica	Sapotaceae	Madhura, Kashaya	Guru, Snigdha	Vata-Pittahara	Anti-ulcer, antioxidant
Khadira	Acacia catechu	Mimosaceae	Tikta, Kashaya	Laghu, Ruksha	Kapha-Pittahara	Antioxidant, anti-inflammatory, analgesic, anti-microbial
Nimba	Azadirachta indica	Meliaceae	Tikta, Kashaya	Laghu	Kapha-Pittahara	Antifungal, anti-bacterial, anti-inflammatory, anti-tumor
Karaveera	Nerium indicum	Apocynaceae	Tikta, Katu, Kashaya	Laghu, Tikshna, Ushna	Kapha-Vatanashaka	Anti-bacterial, anti-fungal, anti-viral, antioxidant, analgesic, anti-ulcer, anti-inflammatory, anti-cancer

Benefits of Dantadhavana:

Keeping the time, season, etc, the appropriate substance (twig) containing congenial Rasa and Virya should be used. This prevents tastelessness and foul odour of mouth, as well as oral and lingual ailments, and generates a desire for food, clarity, and lightness. It is helpful in bad breath, Vairasya, Jivha, Danta, Mukha Mala Shodhana, Danta Vishodhana.²⁰The patients suffering from headache, thirst, fatigue, exhaustion due to wine intoxication, bell's palsy, otalgia, eye diseases or fever of recent infliction and also cardiac ailments should clean their teeth daily with cleansing tooth powders such as Trikatu (powder) mixed with honey, rock salt with oil or powder of

Tejovati without injuring gums and avoid use of Dantakastha(tooth brush prepared with twigs)²¹

Contraindication of Dantadhavana:

Dantadhavana is contraindicated in Talu Roga, Jihwa Roga, Osthara, Aasya Paka, Hikka, Swasa, Kasa, Vamana, Durbala, Ajirna, Mada, Murcha, Ardita, Karna Shoola, Danta Rogi Trishna Klama.²²

DISCUSSION:

Good oral health is important for maintaining overall good health. The mouth is one of the nine openings mentioned in Ayurveda. Dantadhavana plays a significant role in maintaining oral hygiene and other procedures like Gandusha, Kawala, Jivha Nirlekhana, etc. According to Ayurveda, Dantadhavana uses

herbal twigs mainly from Katu, Tikta, and Kashaya Rasa plants. Nowadays, Dantadhavana is replaced with chemical toothpaste and toothbrushes. Despite that, dental problems have been on the rise during this decade and have almost quadrupled in 3 years; 87% of the dentists said that oral hygiene problems are common among Indians. 83% of dentists agree that in India, people immediately visit their doctor if they are affected by a cold, fever, body ache, or stomachache but not for tooth ache. 87% of the dentists said patients had no dental hygiene routine before their first dentist visit. 72% of dentists said that people come to check oral hygiene after embarrassing gossip from colleagues, so awareness about oral hygiene is critical. Ayurveda provides many routine procedures for promoting good oral hygiene. Dantadhavana plays a major role in promoting good oral hygiene. Research has shown that Dantadhavana using herbal twigs alters the salivary pH. It becomes alkaline, which helps to neutralize the acid produced by pathogenic bacteria, so it helps prevent tooth decay and treat it. Twigs of Arka (*Calotropis Procera*), Khadira (*Acacia catechu*), Karanja (*Pongamia pinnata*), Neem (*Azadirachta Indica*), etc., are used for Dantadhavana. They possess antimicrobial activity that helps treat dental caries. Studies revealed that the latex of Arka (*Calotropis Procera*) possesses a strong inhibitory effect on specific microorganisms, which helps in tackling the dental caries. Further, Taxifolin, which is the main constituent of Khadira (*Acacia catechu*), possesses antifungal, antiviral, antibacterial, anti-inflammatory and antioxidant activity, which helps in the healing of tooth decay which has involved the deeper layer of teeth following the dental caries. Certain studies prove that Karanja (*Pongamia pinnata*) has antimicrobial properties and is effective in preventing dental caries. Kasaya, Katu and Tikta Rasa are used in Dantadhavana. These three rasas pacify Kapha Dosha, and Katu Rasa purify the oral cavity, exterminates krimi, and opens channels. Tikta Rasa also has Krimi Nashaka property. Kashaya Rasa possesses Vrana (ulcer) purification and healing properties. A sense of freshness and salivation increases after Dantadhavana, as it pacifies Kapha

Dosha and opens up channels. Thus, it is beneficial in treating the Dental caries based upon the rasa, guna and veerya of the twigs used for the dantadhavana.

CONCLUSION

Dantadhavana is an important part of Dinacharya and Treatment modality in the danta roga. It plays a vital role in maintaining oral hygiene and the curative aspect of dentistry. It helps remove food debris, hence helps maintain oral pH and prevent dental caries. It also helps prevent dental plague and periodontal disease. Along with maintaining oral hygiene, Dantadhavana also does Shamana of Kapha Rasa (Katu Tikta Kashaya Rasa Datun). Katu Rasa purifies the oral cavity and promotes Ruchi in food, and Kriminashaka (Katu and Tikta Rasa) helps promptly treat Dental Caries. Each drug mentioned for the Dantadhavana has antimicrobial, antifungal, antiviral and antioxidant pharmacological action. Overall, Dantadhavana not only helps in promoting good oral hygiene, but it also helps in preventing many systemic diseases as it is one of the nine openings of our body mentioned by Acharyas. As digestion starts with the mouth, oral hygiene also plays a vital role, mainly in the digestion of carbohydrates. So, Dantadhavana is an integral part of our Dinacharya, which impacts on our health. Based on the pharmacological effects of the twigs, it is very effective in treating dental caries.

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