



ROLE OF DINCHARYA IN THE ORAL HYGIENE – AN AYURVEDIC VIEW

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ABSTRACT

Oral diseases continue to be a major health problem world-wide. Oral health is integral to general well-being and relates to the quality of life. Awareness on oral hygiene practices in mass population is still found unsatisfactory. Developing good Oral hygiene behaviour and attitude in population is crucial because a large number of systemic diseases have oral manifestations. The western medicine has limited success in the prevention and treatment of a variety of oral diseases. Hence, the search for alternative products continues. Natural methods and remedies are considered to be good alternatives. Some of the *dincharya* (daily regimens) procedures described in *Ayurveda* have been proven safe and effective. This exploration of traditional alternative may lead to the development of novel preventive or therapeutic strategies for oral health. Here an attempt has been made to review various *dincharya* procedures mentioned in *Ayurveda* that can be used as an adjunct for the maintenance of oral hygiene. The present review is focused on the possible role of *dincharya* in the management of oral hygiene and prevention of harmful health conditions.

Keywords: *Ayurveda, Dincharya, Oral Hygiene, Swasthavritta*

INTRODUCTION: Oral health is an integral part of general health and essential to quality of life. The oral cavity is a mirror that reflects the health of the individual. It is a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing [1]. Prevention of oral diseases should be a priority in developed and underdeveloped countries around the world. The World Congress 2015 on Dental care and Oral health (organized by Japan Dental Association and co-sponsored by WHO) was held in Tokyo during 13-15 March 2015, in which the '*Tokyo Declaration*' on dental care and oral health for healthy longevity was adopted to call upon health policy-makers and professionals to significantly

reduce the global disease burden, promote greater equity, and integrate oral health promotion into the NCD prevention and control and development agenda [2]. Oral diseases are a major health problem worldwide and are not limited to dental caries and periodontal diseases but to various conditions of buccal cavity. Worldwide, 60–90% of school children and nearly 100% of adults have dental cavities. Severe periodontal (gum) disease, which may result in tooth loss, is found in 15–20% of middle-aged (35-44 years) adults. Oral disease in children and adults is higher among poor and disadvantaged population groups. Poor oral hygiene is also a risk factor for oral disease. The prevalence of oral diseases is increasing in low and middle income countries, and in all countries, the oral disease burden is significantly higher among poor and disadvantaged population groups [1]. The use

of oral health services is markedly low among older people, people living in rural areas, and people with low income and education. Oral health care coverage is low in low and middle income countries. In low- and middle-income countries, public oral health programmes are rare. The high cost of dental treatment can be avoided by effective prevention and health promotion measures. India is a large country with a mixture of various cultures and traditions. With a population of 1.23 billion and a huge amount of disease burden, oral health care delivery cannot be limited to dentists alone. Proper knowledge of oral hygiene is crucial because periodontal diseases are associated with multiple systemic conditions, and a large number of systemic diseases have oral manifestations. Risk factors for oral diseases include unhealthy diet, tobacco use, harmful alcohol use, and poor oral hygiene. Oral hygiene is the practice of keeping the mouth and teeth clean to prevent dental problems, most commonly, dental cavities, gingivitis, periodontal (gum) diseases and bad breath. There are also oral pathologic conditions in which good oral hygiene is required.

Ayurveda is the ancient Indian system of health care and longevity which has stood the tests of time. *Ayurvedic* practices of prevention and treatment are safe, effective, economical and practicable. In *ayurveda*, Oral diseases are included in its *Shalakya Tantra* (system of Eye & ENT) which is among 8 specialities of *Ayurveda* [3]. It deals with the diseases occurring above the clavicle. It includes Eye, Ear, Nose, Throat and Oro-dental diseases and their management along with their structural and functional details. Traditional medicine can treat various infectious and chronic conditions also. Several therapies such as diet, life style modifications, medi-

cations and therapeutic procedures like *dincharya* can be widely used for strengthening of oral health and hygiene.

Oral health can be confirmed by hygienic practices described in *Ayurveda* under the *dincharya*. By implementing these procedures as habit in lifestyle, a person can prevent the occurrence of many oral health related conditions. These procedures of *dincharya* should be implied as primordial preventive methods. Many *Ayurvedic* herbal plants possess antimicrobial, anti-inflammatory, analgesic, anti-ulcerogenic activities when screened according to the modern parameters. However, present review's focus is only on preventive measures and developing healthy lifestyle practices through *dincharya*, and promoting these in younger children from very early age as primordial prevention.

DISCUSSION: There may have been great therapeutic advances in the health care sector but it is important not to lose sight of basic protocols of patient care. No matter how sophisticated techniques and procedures may have become, preventive practices remains the foundation of any health care. In modern science, Primary prevention of periodontal diseases rests upon the individual carrying out regular thorough removal of dental plaque with a toothbrush; supplemented by other aids such as dental floss, tooth picks, and chlorhexidine mouth rinses. Professionally provided removal of plaque and calculus is also a method of preventing periodontal diseases. In the prevention of dental caries particularly, additional supplementation of fluoride, dental sealants, and the encouragement of healthy diets form a major part of health promotion activities.

Oral hygiene is not described as a separate chapter in *Ayurveda* but it comes under different chapters of *Ayurvedic* literature.

Acharya Charaka described oral hygiene under the topic “*Swasthavritta*” which means personal hygiene in “*Matrashiti-yadhyaya*” (*sutra-sthana*). Acharya Sushruta had told about oral hygiene in the “*Anagatabadha pratischedha*” (*chikitsa-sthana*) chapter, while Acharya Vaghbhatta described it in “*Dincharya*” (*sutra-sthana*) chapter. All the authors have given emphasis on personal hygiene which should be followed by each individual strictly. *Dantadhabana*, *Jihwa-nirlhekhana*, *Kavala*, *Gandusha*, *Tambulasevana*, *Nasya* and *Dhumapana* are some of the procedures mentioned by Ayurveda for maintenance of oral hygiene. These procedures will be discussed one by one in forthcoming pages.

Danta Dhavana (brushing teeth): ‘*Dantapavana*’ means a ‘*datuna*’ or Chewing stick which is similar to modern tooth brushing. Chewing sticks are recommended as oral hygiene tools for health promotion in developing countries. It is entirely different from the modern activity of ‘brushing the teeth’, specifically because these sticks are chewed. Unlike modern method of brushing where friction or rubbing is main action for hygiene, chewing stick shows its results due to the pharmacological properties of selected stick and its chewing, rubbing action. There are various criteria shown for the selection of proper material for chewing stick. These criteria are in relation to the materials rasa, size, shape and condition; and individual’s *prakriti*, *dosha*, health condition etc. ^[4]. Ayurveda instructed to brush teeth twice day ^[5,6], in morning after leaving the bed and in evening before going to sleep; and also after meal. Tooth brushing should be done towards the direction they grow ^[7].

Most used chewing sticks in healthy person are *Neem*, *Meswak*, *Babbula*, *Khadira* and *Karanja* which possess mainly bitter, astringent taste. These tastes help in strengthening of gums, teeth and enhance the taste of food. Tooth-brushing with the sticks of various tastes removes tastelessness of the mouth, diseases of tooth, tongue and oral cavity as well as enhances the taste of food, ensures oral cleanliness and lightness of the organs in the mouth. They reduces *madhura rasa* atmosphere in oral cavity and produces *vishadata* (dryness) which keeps tab on bacterial growth. Smooth massage of the gums helps the teeth to be strong and stable. Also fibrous nature of these sticks resulting in mechanical plaque removal due to the friction. The indication of brushing is to get rid from halitosis (bad odour of mouth) along with removal of food debris from tooth, tongue and mouth ^[8]. Chewing on these sticks is believed to facilitate salivary secretion and possibly, help in plaque control while some stems have an anti-bacterial action ^[9]. Present day research has shown that all the chewing sticks described in ancient Ayurveda have medicinal and anticariogenic properties ^[10].

Dantadhavan churna (Tooth Powder): There are many conditions according to Ayurveda where brushing (*dantadhabana*) is contra indicated ^[13]. In such situations, for oral hygiene, tooth powder is used in some cases. Acharya Sushruta and *Bhavprakash* had mentioned tooth powder for cleaning the teeth. They told to use of *Datuna* dipped in *Madhu*, *Trikatu*, *Trivarga*, *Taila* and *Saindhava-lavana* ^[11,12]. Such preparation can be said an ancient form of modern tooth pastes.

In practice, various Ayurvedic and modern tooth powder preparations are available in markets. While the modern powders are

limited in their mechanical action only, Ayurvedic products are beneficial due to their drug properties and pharmacological actions. Researches has proved that salt is good for tooth and oral hygiene. The change in osmotic pressure in buccal cavity due to salt restricts bacterial growth and survival. Now a day's tooth pastes are also coming along with salt.

Jihva Nirlekhana (tongue scrapping): *Jihva nirlkhana* is used for cleaning the tongue with the help of a tongue scraper. They look similar to modern day tongue scrappers, but the materials used in production are according to an individual's nature (*prakriti*) and condition [14]. Ancient texts have shown various materials used for the tongue scrapers. Today they are generally made of steel and plastics.

Tongue scraper's mode of action, from both Ayurvedic and modern view, is broadly mechanical. Tongue scrapping stimulates the reflex points of the tongue. It removes the dirt, tastelessness, foul smell and sluggishness of the tongue [15], improves the sense of taste; and also stimulates the secretion of saliva or digestive enzymes. The protein rich surface of the tongue gives rise to the highest amount of bacteria in the oral cavity. The dirt deposited at the root of the tongue causes obstruction to respiration and creates foul smell (helitosis). Hence, the tongue should be scraped after brushing the teeth [16].

Kavala and Gandusha (Gargling and Oil pooling): *Kavala* stands for gargling or swishing with liquid filled in mouth. While *Gandusha* stands for mainly oil pulling or full mouth retention of some liquid. These procedures are similar to modern methods of gargling with various kinds of mouth-washes like chlorhexidine. Ayurveda has described these two procedures in *dincharya*, which are useful for oral hygiene,

in situations where a person is contra indicated to use tooth brush or tongue scraper. These procedures are also very much useful in oral hygiene and health maintenance independently.

Various liquids (like milk, luke-warm water, *taila*, honey, *kanji* etc.) are described in texts for *gandusha* and *kavala* according to *dosha* and *prakriti* of individual [17], among them use of oil is described best for a healthy person and to maintain health of all organs of oral cavity [18]. *Gandusha* with *Til taila* helps in tooth sensitivity.

The mechanism by which the oil pulling therapy causes plaque reduction is not known. Due to the pressure of swishing, the liquid passes through the teeth and removes residual food particles and tartar and thus controls caries or gingivitis. The viscosity of the medicated oil probably inhibits bacterial adhesion and plaque co-aggregation. The mechanism of action is also thought to be its chemical pH and osmotic effects, which aid in its antibacterial actions. A few studies have been carried out regarding the role of oil pulling therapy in the maintenance of oral health. The medicated oil and fluid used in *Kavala* and *Gandusha* probably protect the oral cavity from infection/inflammation by its anti-oxidant property [19]. This could be the probable mode of action for the reduction of plaque scores and colony count of the microorganisms in the oral cavity. *Amith et al* (2007) have shown that oil pulling therapy with sunflower oil significantly reduced plaque scores after 45 days [20]. Another study carried out by *Sharath et al* (2009) showed that oil pulling therapy was very effective against plaque induced gingivitis both in the clinical and microbiological assessment [21]. *Ashokan S et al* found that the oil pulling therapy with ses-

ame oil has the following advantages over chlorhexidine: no staining, no lingering after-taste, and no allergy. Sesame oil is 5 to 6 times more cost effective than chlorhexidine and is readily available in most households. There are no disadvantages for oil pulling therapy except for the extended duration of the procedure compared with chlorhexidine [22].

What makes this method so exciting and innovative is that it is extremely simple to practice, no buying of complex products or mixing products and is a household remedy.

Tambula sevana (chewing betel leave) or Kalka dharana: Chewing sugar free substances stimulates saliva production, and helps to clean the surface of the teeth. Poor oral hygiene hampers the personality and can create ulceration, bad breath and further inflammatory states of tonsils and throat. In modern practice, chewing gums flavoured with mint are also used but its benefits are limited to mouth fragrance and freshness only. Ayurvedic concept of *Tambulasevana* is far superior and beneficial than chewing gums. A person desirous of cleanliness, delicacy and freshness of the mouth should chew the fragrant fruits of *jatiphala* (nutmeg), *katuka* (ginger), *puga* (betelnut), flower stalk of *lavanga* (cloves), *kankola* (cubebs), *tambula* (betel-leaf), extract of *karpura* (camphor) and *sakptada* (cardamom) [23]. Chewing pleasant substances of astringent, pungent and bitter taste like Betel-nut palm, Musk, Cloves and Nutmeg should be done to eliminate the *kapha* produced just after the meal due to *avastha paka*. Such substances are astringent, stomachic, alkaline; stimulates appetite, removes tastelessness of the tongue and mouth; helps in removal of *kapha*, foul smell and dirtiness of the mouth. It refreshes the mouth and brings

about fragrance, lustre and elegance. They purify the sense of gustation, controls salivary secretion of the mouth and alleviate diseases relating to mouth and throat.

Pratimarsha Nasya (nasal therapy): Oils formulated with drugs of pungent properties should be used daily as nasal therapy (snuffing). *Pratimarsha nasya* should be taken habitually in the morning, midday and evening respectively. One who takes nasal therapy regularly is endowed with oral freshness, elegant voice, undefiled senses and is not afflicted with wrinkled skin (creases on the body), grey hair and dark spots on the cheek.

Acharya Vaghbhatta has shown 15 *kala* of *Pratimarsha nasya* [24] as per *dincharya*. Among them *nasya* after brushing, meal, *gandusha*- are important from oral hygiene view. These are the times where either the *kapha* is predominant, or residual *kapha* is still remained after the previous procedure. This *kapha* may provide suitable atmosphere for the plaque formation, halitosis and bacterial growth.

Dhumapana (medicated smoke inhalation): Precautions should be taken for the removal of *kapha* just after meal, by the inhalation of fragrant or medicated smoke or vapour. It removes *kapha dosha* or excessive secretion from mouth just after meal. *Acharya Charaka* has described 8 *dhumapana kala* [25]. Among them 2 (after meal and brushing the teeth) are helpful in prevention of diseases above the clavicular region (*urdhvajatrugata*) caused by the *vata* & *kapha* [25]. Medicated smoking is also helpful in conditions such as *dandadaurbalya* (dental weakness), *asya-gandha* (helitosis), *dantashula* (toothache), *shleshma-praseka* (excessive salivation), *galashundi* (tonsillitis), *upajihvika* (uvulitis) [26].

CONCLUSION: In this paper, an attempt has been made to review various procedures of *dincharya* mentioned in *Ayurveda* that can be used as an adjunct for the maintenance of oral health. The literature showed that there is lot of potential which can be used in prevention as well as management of oral diseases. These *dincharya* methods improve the oral health and benefit various systems as well. Sufficient scientific research has not been carried out to evaluate the effect of *dincharya* on oral health and these needs to be explored. The clinical studies should be encouraged to assess the efficacy of these procedures. Larger, population-based studies are needed to understand the role of *Ayurvedic* procedures in oral hygiene. *Ayurvedic* procedures aimed at oral hygiene need to be evaluated through rigorous trials for safety and effectiveness. The traditional knowledge of *Ayurveda* should be integrated with the modern oral health-care practice and dentists should be encouraged to use them in various oral health conditions. This will make oral health much safer, affordable and more accessible for the lower socio-economic groups in society. In spite of all the advances in the field of health science, traditional healing methods still have a major role to play. These methods are born out of native wisdom of very high intellectualism. They are untouched and unspoiled. If they are analysed on scientific backgrounds they stand the test of time. *Ayurveda* is practiced throughout India. *Ayurveda* practitioners had been part of health care system for a long time, and due to their knowledge and accessibility they are frequently approached by the general public. They can play a vital part in oral health care delivery. Their recommendations could be considered for establishing individuals' oral hygiene practices/habits in society. Publicity of these techniques using appropriate media would benefit the general population by giving more confidence in the ancient practices.

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