

Indigenous Oral Hygiene Aids

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Abstract

Review Article

The indigenous oral hygiene aids still remains most easily accessible, cheap and effective tool for oral hygiene maintenance in rural and remote areas where affording toothbrushes and toothpaste is an issue. This article deals with various aids used for oral health maintenance and emphasizes need for development of better tools to improve oral health.

Keywords: datun, toothbrush, toothpaste, indigenous aids.

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INTRODUCTION

The oral cavity is the 'mirror' of general health [1]. Various factors like nutritional status, tobacco smoking, alcohol, hygiene, stress etc. are linked to a wide range of oral diseases forming the fundamental basis of the common risk factor approach (WHO 2000) to prevent the oral diseases [2]. Among these oral hygiene is the most significant factor when it comes to prevention of oral diseases and preservation of oral health [3].

Since a long time, people have been using something drawn from nature for oral hygiene maintenance. Oral hygiene practices comprise of thorough daily removal of dental plaque and other debris by mechanical and chemical means.

Many mechanical aids like toothbrushes, dental floss, tooth picks, inter proximal brushes and various chemotherapeutic agents like mouth washes, antibiotics, enzymes etc have been recommended for the control of dental diseases.

The popular indigenous aids can be classified as:

a) Plants and parts

Twigs and stems	Babul Neem Banyan
Fruits	Coconut and its parts
Barks	Walnut
Leaves	Mango Cashew Coconut

b) Charcoal and Modifications

1. Charcoal pieces ground on stones.
2. Charcoal-Carbon from rice husks - activated carbon.
3. Burnt coconut shell powder.
4. Carbon collected on vessels used for boiling water.
5. Burnt tobacco and snuff.
6. Modification of the above mentioned materials with the addition of salt, pepper powder etc.

c) Miscellaneous

- Sand.
- Ash.
- Common Salt.
- Brick powder.
- Arecanut powder.

Stems, twigs and leaves [3]

Datun is a term used to denote any branch or twig that is used for oral hygiene. The technique of use of Datun is as follows: Datun should be a fresh twig or a small branch from a Babul tree, about nine inches long and as thick as a person's little finger. It is a most hygienic toothbrush as it is used only once and thrown away. On chewing it releases an astringent juice, which is beneficial to the gums. Chewing also softens the end of the stick, so that it may be used as a brush.

For more than 1,000 years, Muslims all over the world have been using chewing sticks (Miswak) as an oral hygiene aid. In spite of the introduction of modern oral hygiene devices, many Muslims still prefer to use the natural Miswak and they are popular despite the convenience of modern toothbrushes especially in Middle East and African countries [4]. This type of chewing stick is derived from the tree *Salvadora*

persica. Miswak is chewing stick used as an oral hygiene device by majority of the people in Gulf countries and the Middle East. Recently, the World Health Organization (WHO) has recommended and encouraged the use of these sticks as an effective tool for oral hygiene, since it is available locally in most rural areas of the Middle east and African countries and does not need technology or expertise or extra resources to manufacture it[5].

The fresh twigs of the following trees are being commonly used as a natural toothbrush called Datun [3]:

- 1) Neem (Margosa).
- 2) Babul.
- 3) Guava.
- 4) Mango.
- 5) Roots of Siwak (*Salvadora Persica*).
- 6) Dandasa (*Jugulus Regi*).

1) Neem Datun and Neem leaves: Fresh and soft twig of neem make good bristles. The juice of neem is bitter and has antiseptic, anti-spirochetal, and astringent properties. It contains an alkaloid called Margosine. Neem stick extracts inhibits insoluble glucan production and are therefore anti cariogenic in nature [6]. Comparing the efficacy of indigenous tooth powder and home-made materials like salt and mustard oil, ash, charcoal powder, mud, sand and neem leaves and sticks, it was concluded that the use of home-made materials were more associated with dental caries than the use of neem stick, brush and dentifrices [7]. The antibacterial and anti-plaque activity of this extract can be attributed to the presence of polyphenolic tannins which bind to surface associated bacterial proteins. A study by Chawla HS [8], reported that some types of chewing sticks such as Neem, *Salvadora persica* and *Acacia arabica* contain a reasonable amount of fluoride. Although some clinical studies, which tested the ability of chewing sticks to remove dental plaque and clean the teeth, concluded that these sticks are as effective and efficient in maintaining oral hygiene as a toothbrush.

2) Babul Datun: It is an antiseptic and a very strong astringent and makes the gums very strong, healthy and well keratinized.

3) Guava Datun: It is an antiseptic and astringent. It does not make good brush as its bristles are weak and break easily during use.

4) Mango Datun and Leaf: The twig or the stalk of the fresh mango leaf is used as a toothbrush and the main central rib is used as a tongue cleaner. This is popular in Tamil Nadu, Kerala and other Southern states of India. Mango leaves contain gallic acid, citric acid and chlorophyll. All of these are good antiseptic, deodorant and astringent. Mango leaf also contains a rich quality of ascorbic and phenolic acids which impart anti-cariogenic properties. Mango leaf has been used as one of the indigenous methods for teeth cleansing by the common people of South India. A clean fresh mango leaf is taken and is made into two

halves by removing its mid rib carefully. This mid rib can and is being utilized for removal of plaque from the surface of the tongue. Leaf is then rolled into cylindrical shape. The already torn ends of the leaf are then chewed up to exude some juice. The fibrous tissue formed during this process serves as an excellent device for brushing. The other end of leaf acts as a convenient handle. This method has been reported by and is still being widely used as a plaque control measure [9]. The main difficulty with this method is inaccessibility to the posterior region because of short handle and difficulty to reach interproximal as well as lingual surfaces of lower posterior teeth. M Shetty and Bhat JV [9], studied cleansing efficacy of mango leaf with other indigenous dentifrices like, tooth paste tooth powder, coconut outer sheath, babul twig and almond shell and concluded that among the natural means tested, the mango leaf easily proves to be better in eliminating a great number of microorganisms from the mouth than the more popular babul twig.

5) Siwak: (Hindi: Chota Pilu, English: tooth brush tree, Kannada: Goni Mara): This tree is found in cold and dry climate of Sindh (Pakistan), Punjab, Himachal Pradesh, Jammu and Kashmir, Haryana, some parts of Karnataka and Rajasthan, and other parts of North West India and Pakistan. The bark of the root contains resin, traces of an alkaloid called "Salvadorine", chlorine and trimethylamine. It is an antiseptic and strong astringent. The roots of the Siwak are flavoured with peppermint and are used to clean the teeth mostly by Muslims. Al-lafi and Ababneh [10] studied the antibacterial activity of Miswak and found that the extract of these sticks had a drastic antibacterial effect on the growth of *S.aureus*, *S. mutans*, *S. mitis*, while a variable effect on other bacterial species was noted. Taha and Hani [5] evaluated the effect of the extract of Miswak sticks used in Jordan and Middle East on oral bacteria and concluded that use of chewing sticks twice daily on regular basis might reduce the incidence of gingivitis and possibly dental caries.

6) Dandasa (*Jugulus Regi*): The skin of stem and branches of Walnut tree are used to clean the teeth. It is a very strong astringent and mild antiseptic. It is chewed and crushed by the teeth and then rubbed on the teeth and gums by the fingers. It gives red pink colour to the lips, tongue and gums which disappears after sometime on thorough rinsing the mouth.

7) Tea leaves: Massaging with tea dust is a common method of cleaning the teeth among rural and urban populations in developing countries like India [11]. Tea leaf extracts possesses antibacterial and bactericidal actions against many of the bacteria. In addition to tannins tea leaf contains monomeric polyphenols. When tea is processed it gets oxidized to polymeric phenols, which results in a chemical structure similar to flavoured and tannic substances and has the ability to inhibit streptococcus mutans. The presence of gallotannin can effectively reduce the number of bacteria available for binding to the tooth surface by increasing their physical removal from the oral cavity [12].

They have advantages as

- Being cost effective
- Accessibility
- Helpful in developing parts of the world where there is an acute shortage of trained dental manpower.

Fruits as oral hygiene aids [3]

This is a very common practice of oral hygiene method in coastal India. The coconut husk consists of epicarp and the mesocarp. The mesocarp is made up of pith and fibrous elements. They can be converted into toothbrushes with long handles. The section of the husk is cut horizontally across into two halves. Each half is then split lengthwise into small sections of about one centimetre wide. The broader end of this segment is bevelled on tough epicarp side. This end is chewed vigorously for a few minutes when the pith part mixes with saliva. The astringent juice produced contains polyphenols and possesses antibacterial properties.

Bark of trees for mouth cleansing [3]

The bark of Walnut tree contains a large percentage of smooth and fine fibrous elements and astringent chemicals. It is chewed in the form of small pieces and converted into a toothbrush. It is a very popular method used by people of Kashmir

Use of charcoal as an indigenous oral hygiene aid [3]

Charcoal in powdered form, usually modified by the addition of salt and pepper, is a popular form of cleansing teeth. The most common way is to rub a piece of charcoal on a stone slab. The powder thus obtained is rubbed against the teeth and gums. The role of charcoal is more as a dentifrice. However, the use of charcoal has a deleterious effect on the tooth surfaces. It leads to the development of abrasion cavities on the surface of teeth [13].

CONCLUSION

Although, a number of newer methods have been developed for oral health maintenance, the indigenous oral hygiene methods still remains an important benchmark for oral health maintenance in remote areas where a number of barriers are present. These barriers needs to be identified and an attempt should be made to overcome in order to improve the oral health related quality of life of individuals.

REFERENCES

1. Archana Sharda, Jagat Sharda. Factors influencing choice of oral hygiene products used among the population of Udaipur, India. *International Journal of Dental clinics*. 2010; 2 (2): 7-12.
2. Sheiham A, Watt R. The common risk factor approach; a rational basis for promoting oral health. *Community Dentistry and Oral Epidemiology*. 2000, 28: 399-406.
3. Chandra S, Chandra S. *Textbook of preventive dentistry*. Jaypee Brothers Medical Pub.1999.

4. Elvin-Lewis M. Plants used for teeth-cleaning throughout the world. *J Prev Dent*. 1980;6:61-70.
5. lafi Al T, Ababneh H. The effect of the extract of the miswak (chewing sticks) used in Jordan and the Middle East on oral bacteria. *International Dental Journal*. 1995 Jun;45(3):218-22.
6. Bergenholtz A, Gustafsson LB, Segerlund N, Hagberg C, Östby PN. Role of brushing technique and toothbrush design in plaque removal. *European Journal of Oral Sciences*. 1984 Aug;92(4):344-51.
7. Kapoor AK, Ray SK, Kaur P, Reddy DC, Nag Choudhary J. Dental caries and its relationship to materials used for cleaning teeth and frequency of cleaning teeth "Prevalence of dental caries". *JIDA*. 1980;52:81-3.
8. Chawla HS. A new natural source for topical fluoride. *J Indian Dent Assoc*. 1983; 55: 419-422.
9. Meenakshi Shetty, JV Bhat. Indigenous dentifrices and oral hygiene. *J Indian Dent Assoc*. 1996: 1-6.
10. Lafi Al T, Ababneh H. The effect of the extract of the miswak (chewing sticks) used in Jordan and the Middle East on oral bacteria. *International Dental Journal*. 1995 Jun;45(3):218-22.
11. Patel VK, Venkatakrishna-Bhatt H. Folklore therapeutic indigenous plants in periodontal disorders in India (review, experimental and clinical approach). *International journal of clinical pharmacology, therapy, and toxicology*. 1988 Apr;26(4):176-84.
12. Horiba N, Maekawa Y, Ito M, Matsumoto T, Nakamura H. A pilot study of Japanese green tea as a medicament: antibacterial and bactericidal effects. *Journal of endodontics*. 1991 Mar 1;17(3):122-4.
13. Axel Bergenholtz, Anders Olsson. Efficacy of plaque-removal using interdental brushes and waxed dental floss. *Eur J Oral Sci*. 1984; 92(3):198-203.