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# Kavala and Gandusha – Need for Oral Health

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## ABSTRACT

Oral diseases are a major health problem worldwide. Poor oral hygiene is responsible for causing major risk for oral diseases. As oral health is the integral to general well-being, in Ayurveda, *kavala* and *gandusha* is considered as one of the daily regimens (*dinacharya*) that are to be practiced for maintaining oral health. *Gandusha* and *kavala* has preventive and therapeutic properties. Hence this procedure can be adopted in both healthy and diseased persons. In Ayurveda, there is a detailed explanation about *kavala* and *gandusha*, types, various formulations and drugs, benefits etc. due to civilization ayurvedic mouthwashes are replaced by contemporary mouthwashes which limits its usage due to mucosal irritation, brown discoloration (staining) of teeth and its various hazardous effects. Complementary science recommends the use of mouthrinses that are prepared with various synthetic chemical. Now-a-days, chlorhexidine is the most efficacious compound used in mouthwashes which has antiplaque and antibacterial action, but adverse effects associated with it are relatively higher. In the present work, problems due to usage of contemporary mouthwashes and ayurvedic view of *kavala* and *gandusha* will be discussed and solutions by Ayurveda to overcome the Oro-dental problems.

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## INTRODUCTION

Ayurveda is one among ancient medical sciences originated in India. Ayurveda explains various techniques to promote oral health and prevent diseases. Only *Kavala graha* is explained in the *Charaka Samhita* but *Sushruta Samhita*, *Astangahridaya* and *Astangasangraha* explains both the *gandusha* and *kavalagraha*. As *Mukha* (mouth) is one among the main nine openings of our body, and it is the beginning of gastrointestinal tract, many of the infections begin from *mukha* (mouth) hence maintaining the *mukha Swasthya* is very essential. In the present

era however due to lack of time and negligence Oral hygiene is not properly maintained. Hence, *Kavala* (different types of *kavala* as told by told by different authors is mentioned in table no.1) and *gandusha Upakrama* told in *Dinacharya*<sup>1,2</sup> plays an important role in the present situation. In the traditional medicine the naturally occurring phytochemicals isolated from plants serves as the best alternative to synthetic chemicals as an easy and economic ayurvedic remedy (the different types of *gandusha* and the *dravyas* used are mentioned in table no.2). In modern medicine, many remedies are explained for

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**Table 1** Types of *kavala* as per different authors.

<i>Sushruta</i>	<i>Vriddhavagbhata(A.H)</i>	<i>Sharangadhara</i>	<i>Vagbhata (A.H)</i>
<i>Snehana</i> (oleating)	<i>Snaihika</i>	<i>Snaihika</i>	<i>Snigdha</i>
<i>Prasadana</i> (palliating )	<i>Shamana</i>	<i>Shamana/ prasadana</i>	<i>Shamana</i>
<i>Sodhana</i> (purificatory)	<i>Shodhana</i>	<i>Samsodhana</i>	<i>Shodhana</i>
<i>Ropana</i> (healing)	<i>Ropana</i>	<i>Ropana</i>	<i>Ropana</i>

**Table 2** Types of *gandusha*, type of *rasa* to be used , different *dravyas* used for *gandusha* as per (AS.SU.31/3)<sup>13</sup>

Types	Tastes (rasas) of drugs used	Gandusha Dravyas
<i>Snaihika</i>	<i>Svadu (Madhura), amla, lavana, ushna</i>	<i>Mamsarasa ,tilakalodaka,ksheera,</i>
<i>Shamana</i>	<i>Tiktakashya, Madhura seta</i>	<i>Patola, arista ,jambu,amra, maaltipallava, utpala, madhukakvatha, sitodaka, kshaudra, ksheera, ikshurasa, ghrita.</i>
<i>Sodhana</i>	<i>Katu, amla, lavana, ushna</i>	<i>Shukta, Madhya, dhanyamla, mutra</i>
<i>Ropana</i>	<i>Kashaya, Madhura, sheeta</i>	-

mouth washing, however due to its limited success in the oral diseases, and causing lots of inconvenience to the patient, the search for alternative products continues. Hence, it became necessary to develop an easy and economic Ayurvedic medical measure which is safe and cost effective in nature with least side effects.

### MOUTHWASHES – A CONTEMPORARY VIEW

The first known references for rinsing of mouth were from Ayurveda, for treatment of gingivitis. Mouthwash, mouth rinse, oral rinse, or mouth bath is a liquid which is held in the mouth passively or by contraction of the perioral muscles the liquid may be swilled around the mouth and/or, the head is tilted back and the liquid is moved at the back of the mouth. Mouthwashes are one of the important oral health care procedures, which helps in preserving oral health. Mouth washing/rinsing practice has been used by humans for more than 2000 years, having its origination from Chinese medicines. By the end of 19<sup>th</sup> Century the oral hygiene practice began to change when a dentist trained in microbiology-Willoughby D. Miller, published –

“Microorganism of mouth”. Promotion of tooth brushing, flossing was promoted worldwide to combat oral biofilm. He suggested the use of antimicrobial mouthwash that contained phenolic compounds to fight against gingival inflammation. In dentistry oral rinses having antimicrobials works by chemo mechanical action, in both preventive and therapeutic purposes.

### HISTORY OF MOUTHWASH

The Romans used bottled Portuguese urine to remove bacteria from the mouth in the year AD1. The reason behind using urine was, presence of ammonia in urine that could whiten the teeth. During Greek and Romans rinsing of the mouth was a common practice followed among upper classes. Hippocrates (father of medicine) recommends for the use of salt, alum, and vinegar for mouth washing<sup>3</sup>. To prevent the toothaches, the blood of the Tortoise was used to rinse their mouth at least three times a year during the period AD.23. A.D. 40 - 90: Greek surgeon and physician, Pedanius Dioscorides, suggested the use of a mixture of juice of olives, gum myrrh, milk, pomegranate, vinegar and wine

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to fight bad breath. During the 12<sup>th</sup> Century: German philosopher, Saint Hildegard von Bingen, suggested that swishing the mouth with pure cold water helps in removing plaque and tartar. In the 16<sup>th</sup> Century: Medieval oral hygiene practices, a mint and vinegar rinsing solution assumed to get rid of bad breath and germs. 19<sup>th</sup> Century: Mouthwashes which we are using today, were developed in the 1800s. Instead of adding urine to the rinses, alcohol was added to fight from bacteria and germs while stabilizing the formula. About 1800 years back, Jewish Talmud<sup>4</sup> suggested the use of dough water, and olive oil. Before the arrival of the Europeans, North American and Mesoamerican cultures used mouthwashes that were prepared from plants. Anton von Leeuwenhoek, in the 17<sup>th</sup> century he discovered the presence of living organisms in the dental plaque and he concluded the mouthwashes were not able to kill the plaque. **In 1892**, A mouthwash product named Odal was

introduced by **Richard Seifert**. In the late 1960s, then professor at the **Royal Dental College** in Denmark, **Harald Loe**, showed the potential of chlorhexidine to prevent plaque. In the following years there was an increase in the demand for mouthwash which continued progression. With this it is clear that mouthwash has been a part of oral health care routine since time immemorial by many groups, cultures, various tribes, and countries for many years.

In the present era, the most popular mouthwashes available in the market are known for its germ-killing qualities, originally Listerine was invented as an antiseptic in surgical procedures and for cleaning of floors. In the present day, mouthwashes Sodium hexametaphosphate and hydrogen peroxide are more abundantly found to prevent stains over the surface of teeth. (In ayurveda, the different indications according to different gandusha types is mentioned by Acharya Sharangadhara, which is listed in table 3.

**Table 3** Types of *gandusha*, Indications of *gandusha*, and ingredients as per (sha.utt.10/8-14)<sup>14</sup>

Types of <i>gandusha</i>	Indications (sha.sam.utt.khanda.10)	Ingredients
<i>Snaihi Kagandusha</i>	1. <i>Vataja roga</i> 2. <i>Hanuvakrastha daaha</i>	<i>Tilakalkodaka, ksheera, sneha</i> <i>Tila, neelotpala, sarpi, sharkara, ksheera, kshaudra.</i>
<i>Shamanagandusha</i>	1. <i>Asya vaishadhyam, mukhavranasandhana, dahaprashamana, trsnaprashmana.</i>  2. <i>visha, kshaaradagha, agnidagha</i> 3. <i>Chala danta (loose teeth)</i>	<i>Madhu</i>  <i>Ghrita</i> <i>Tilakalka mixed with saindhalavana</i>
<i>Sodhanagandusha</i>	1. <i>Mukhasosha, asya vairasya</i> 2. <i>Kaphaja mukharoga</i>  3. <i>Kapha, pitta, rakta rogas</i>	1. <i>Kanjika</i> 2. <i>Paste of saindhalavana, trikatu, rajika, ardraka</i> 3. <i>Triphala and madhu</i>
<i>Ropaganandusha</i>	<i>Tridoshajamukhapaka</i>	<i>Kashaya of darvi, guduchi, triphala, draksa, jaatipallava, yavaasa mixed with 1/6<sup>th</sup> part of madhu.</i>

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**KAVALA AND GANDUSHA AN AYURVEDIC VIEW**

*Gandusha* and *Kavala graha* are two primary oral cleansing techniques explained under *dinacharyato* treat as well as to prevent oral diseases. The difference between the two is only in the dosage and procedure of using the drug. In *Gandusha*, the mouth is filled with a medicated fluid and there is no movement of the fluid within the mouth. The quantity of the medicated fluid in the mouth that is sufficient enough for the movement of medicated fluid is called *kavala*<sup>5</sup> (The difference between *kavala* and *gandusha* is mentioned in table no.6) These oral cleansing therapies help in avoiding bad breath (halitosis), dry face, anorexia, and loss of taste. Gargling with oil helps in removing bad taste and bad breath, reduces inflammation and numbness in the mouth helps in strengthening the teeth. Acharya *Sharangadhara* explains *Gandusha* is *asanchara Mukhapurna* where-as *Kavala* is *chalanasheela*. If the mouth is held with dravadravya kind of substances it is called *Gandusha* and if *kalkais* held in mouth it is known as *Kavala*<sup>6</sup>.

**QUANTITY OF THE DRAVYAS USED IN KAVALA AND GANDUSHA**

**Table 4** *Gandusha Dravyas* that are used in different clinical conditions<sup>15</sup>

CLINICAL CONDITIONS	GANDUSHA DRAVYAS
<i>Dantaharsha, dantachala, vatikamukharoga</i>	<i>Sukhoshnasheeta, tilakalkodaka, taila, mamsarasa</i>
<i>OoshaDaha, paka, kshata, aagantusambhava, visha, kshara, agnidagdha</i>	<i>Sarpi, payas (Milk)</i>
<i>Daha, trishna</i>	<i>Madhu gandusha</i>
<i>Aasyavairasya, mala, daurgandhya</i>	<i>Dhanyamla</i>
<i>Mukhasoshaharam</i>	Same as above but without <i>lavana</i> , and given cold
<i>Shleshma Chaya (accumulation of kapha)</i>	<i>Kshaarambugandusha</i>

For *gandusha*, the quantity of powder of drugs to be added to the liquid is 1 kola. For *kavala*, the paste that is to be added into the liquid is 1 Karsha<sup>7</sup>.

Oil pulling, is a procedure that involves swishing of oil in the mouth for both oral as well as systemic health benefits. It is mentioned in the Ayurvedic text of *Charaka Samhita* where it is called *Kavala or Gandusha*, and it is said to cure nearly 30 systemic diseases such as headache, migraine, diabetes and asthma. Oil pulling has been used as a traditional remedy for many years to prevent decay, bleeding gums, oral malodour, dryness of throat, cracked lips and for strengthening teeth, gums and the jaw<sup>8,9</sup>. Sunflower Oil, or Sesame oil can be used for oil pulling therapy. By following this method of oil pulling, surgery or medication could be prevented for various number of chronic illnesses. The oil therapy is preventive as well as curative. Ayurveda advises gargling of oil to purify the entire biological system. The different *gandushayogas* and different *kavalayogas* as per different clinical conditions is mentioned in table no.4 and table.no5 respectively.

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**Table 5** Kavalayogas for various diseases.

<i>Dahashaamakavala</i>	<i>Tila</i> (sesame) <i>neelotpala</i> (blue lily/ lotus) , <i>sarpi</i> (ghee) <i>Sharkara</i> (sugar), <i>ksheera</i> (milk) <sup>18</sup>
<i>Dantaharsha</i> (tooth sensitivity)	<i>Chaturvidha Sneha</i> (ghrita, taila, vasa, majja)/ <i>trividhasnehakavala</i> <sup>19</sup> .
<i>Sannipataja Arochaka</i>	<i>Krishna jeeraka, adraka, dadima, niryasa, sharkara</i> <sup>20</sup> .
<i>Mukharoga</i>	<i>Pippali, tvak, aguru, daruharidra, yavakshara, rasanjana, patha, tejovati, haritakichurna with honey</i> <sup>21</sup>

**Table 6** Difference between Gandusha and Kavala

GANDUSHA	KAVALA
1. The process in which the medicated liquid is held in the mouth without the movement of liquid inside the mouth .	1. The process of holding the medicated liquid or kalka to facilitate its movement inside the mouth.
2. <i>Asanchari</i>	2. <i>Sanchari /chalanasheela</i>
3. Here <i>dravadravya</i> (liquid) may be used	3. Here <i>dravadravya</i> and <i>kalka</i> (paste) also can be used.
4. The quantity of <i>dravya used</i> is <i>1kola</i> (6gm), or half, one third, one fourth of the capacity of the oral cavity.	4. The quantity of <i>kalka</i> used here is <i>1 karsha</i> (12gm)

### Method and duration of Kavala:

Initially, the person undergoing *gandusha/kavalais* made to sit in a place devoid of breeze but in bright sunlight. The person's neck and shoulder should be properly massaged and fomented, face is slightly lifted up, then the person is asked to hold the medicated liquid in the mouth. Later one should spit out the contents from the mouth and the mouth is cleaned with the help of *Sukhoshna Jala* followed by *MriduSwedana* for shoulders and neck. Filling the mouth to half of its capacity with liquids, which mitigate *Vata, Pitta or Kapha* and moving it inside and spitting out, is known as *Kavala Vidhi*.

First *Svedana, Mardana of Gala, Kapola, LalataPradeshahas* to be done then *Kavala dharana* should be done. Gargle should be retained in the mouth with concentrated mind until there is collection of *kapha* in mouth, and discharge appears from nasal passage and eyes<sup>10</sup>. Then it should be thrown out, replaced by another one. Same procedure has to be repeated 3, 5, 7<sup>11</sup> times. *Gandushadharana* can be done to get rid

of doshas till the appearance of signs and symptoms of proper (*samyakgandushalakshana*) of *gandusha therapy*.

### Duration:

Medicated liquid has to be kept in mouth until the individual develops the following symptoms.

- Oropharyngeal secretions fill in throat (*kaphapurnaasyata*)
- Watery discharge appears from the nose and eyes (*kanthasrava and akshisrava*).

### Dosage of gandusha:

It differs from each individual because of the difference in holding capacity of the oral cavity.

1. According to *Sharangdhara*: A mouth full of liquid is the dose of *gandusha*. For liquid *drava* and *dravya*, *gandusha* dose should be 1 *kola* (i.e., 6 gms)
2. According to *vagbhata*: (*A.S.Su. 31/9*) 3 *matras*<sup>12</sup>
  - a) *Vara matra*- about ½ capacity of oral cavity is filled with *gandusha* liquid.
  - b) *Madhya matra*- about 1/3 capacity of oral cavity is filled with *gandusha* liquid.

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c) *Avaramatra* - about 1/4 capacity of the oral cavity is filled with *gandusha* liquid.

Among the above mentioned ; the dosage of *sharangadharasamhitaseems* more appropriate as per the definition of *gandusha*.

The different types of kavala, as mentioned by various acharya are discussed in table no.1.

**Indications for Gandusha.**

*ManyaStamba* (neck rigidity), *Shira shula* (headache), *Karna shula* (otalgia), *Mukharoga*(diseases of *osta*, *dantamula* (root of teeth), *danta* (teeth), *jihva* (tongue), *talv* (palate), *gala* (oesophagus, throat), *Netra roga* (eye diseases), *Lalasarva* (excessive salivation) , *Mukhasosha* (dryness of mouth, vataja disorders of mouth), *Hrullasa*(nausea), *Tandra* (stupor), *shiroroga* (head diseases), *Aruchi* (anorexia / tasteless-ness ), *Pinasa*(rhinitis )<sup>16</sup>.

**Contraindications:** *Visha*, *Murchita*, *Madarta*, *Shoshita*, *Rakta-Pitta Rogi*, *Kshina*, *Ruksha* persons are *Anarha* for *Kavala*<sup>17</sup>.

**SAMYAK YOGA, AYOGA, ATIYOGA LAKSHANA OF KAVALA, GANDUSHA<sup>22</sup>**

**SAMYAK LAKSHANA OF KAVALA/ GANDUSHA**

*Vyadherapachaya* (relief from the disease); *Tusthi*(feeling of freshness of face, all the *indriyas*(senses and mind) ; *Vaishadhyam* (cleansing of oral cavity), *vaktralahavam*(feeling of lightness in the

mouth); *Indriyaprasada*(clarity or normal functioning of sense organs ).

**AYOGA LAKSHANA OF KAVALA/GANDUSHA**

*Jadhyam*(feeling of heaviness in the mouth); *kaphotklesha*(excessive salivation); *Rasaagyan*(inability for the taste perception); *aruchi*(tastelessness); *Hrullasa*(nausea); *Tandra* (inactive state or stupor).

**ATIYOGA LAKSHANA OF KAVALA / GANDUSHA**

*Mukhapaka*(ulceration of mouth); *Shosha*(dryness of mouth); *Trushna*(thirst); *klama* (debility and weakness)

**MOUTHWASH AS PER MODERN SCIENCE**

Mouthwash , also known as oral rinse is a liquid that is used to rinse teeth, gums, and mouth. Mouthwashes usually contain an antiseptic that helps to kill bacteria which resides in the mouth ,in between teeth and tongue, and which is harmful for oral health. Mouthwashes are used in wide variety of oral conditions such as halitosis(bad breath), oral mucositis, gingivitis etc. various mouthwashes (mouthwashes types its uses, and side effects are listed in table7) help in preventing or controlling tooth decay , helps in reducing a plaque (a thin film of bacteria formed on teeth).

**Table 7** Mouthwashes its uses, and side effects

Types of mouthwashes	Uses	Side effects
Chlorhexidine	Post oral surgery (periodontal surgery)	Brown discolouration of teeth (staining)
Delmopinol	Gingivitis, Periodontitis.	Numbness of tongue and tongue staining. Taste disturbances Mucosal soreness

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Listerine	Supragingival plaque, halitosis, gingivitis	Irritation of canker sores
Sodium lauryl sulphate	-	Mucosal irritation leading to desquamation.
Fluoride	Preventing tooth decay, xerostomia	Skeletal fluorosis, Bone weakness, neurological problems, tooth decay .
Carbamide peroxide, hydrogen peroxide	Tooth whitening	Redness, blistering, peeling, loosening of skin, skin burning, itching, rashes

Mouthwashes are also used to reduce the speed of tartar formation on the teeth and also freshens the breath. Ingredients of Mouthwashes<sup>23</sup>: Mouthwashes are composed of: Alcohol, benzydamine(analgesic), benzoic acid, betamethasone, cetylpyridinium chloride (antiseptic , anti malodor) , chlorhexidine digluconate and hexetidine (antiseptic) , edible oils, essential oils, fluoride (anticavity), flavoring agents and xylitol, hydrogen peroxide, lactoperoxidase ( saliva substitute) ,lidocaine/ xylocaine , methyl salicylate, nystatin, potassium oxalate ,povidone / iodine (pvp-1), sanguinarine mouthwashes, sodium bicarbonate(baking soda), sodium chloride ( salt), sodium lauryl sulfate ( foaming agent), sucralfate, tetracycline (antibiotic), tranexamic acid, triclosan, zinc etc.

### TYPES OF MOUTHWASHES<sup>24</sup>

Primarily there are two main types of mouthwashes:

1. Therapeutic mouthwashes
2. Cosmetic mouthwashes

Cosmetic mouthwash may help in temporarily controlling bad breath and they leave behind a pleasant taste. These cosmetic mouthwashes do not have any chemical or biological application beyond their temporary benefit. Therapeutic mouthwash has active ingredients that help to reduce bad breath, gingivitis, plaque, and tooth decay. The ingredients that may be used in

therapeutic mouthwash include: Cetylpyridinium chloride; chlorhexidine; essential oils; fluoride; peroxide.

### ADVANTAGES OF MOUTHWASHES

1. Helps in cutting down cavities.
2. Helps in fighting against gum diseases
3. Freshens breath and treats halitosis
4. Reduces risk of gingivitis.
5. Reduces plaque buildup to help prevent cavities.
6. Make teeth look visibly whiter.
7. Soothing of canker sores

### DRAWBACKS OF CONTEMPORARY MOUTHWASHES

Rinsing with mouthwash is done to prevent the build-up of bacteria, cavities, and to keep the development of plaque in the mouth at bay. While it helps in promoting good oral health, using of mouthwash also have risks and dangers such as :

- Irritation of Canker Sore –mouthwash can help heal canker sores. But mouthwash with high alcohol content, causes irritation of canker sores. High alcohol content in the contemporary mouthwashes causes damage to delicate mucus membrane in the mouth. In some cases ,
- Chlorhexidine mouthwashes cause discolouration on teeth(staining) when it gets in contact with food additives in the mouth.

Mouthwashes also cause health hazards in

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children. Children may suffer from convulsion and get comatose when they accidentally swallow .

- Stannous fluoride may cause unpleasant taste and may leave a gritty feeling in the mouth.
- It has been linked to oral cancer: Although mouth rinses reduce lots of oral diseases, there is a risk to oral cancer.
- Increases the sensitivity of your teeth: The mouthwashes containing alcohol can dissolve the mucus layer leaving the teeth vulnerable to sensitivity.

### ADVANTAGES OF AYURVEDIC KAVALA AND GANDUSHA OVER CONTEMPORARY MOUTHWASHES.

AYURVEDA advises kavala and gandusha for regular building of oral health. The oral cleansing techniques told in ayurvedic classics have benefits in various oral diseases. The swishing of the herbal medicated fluid relieves bad breath, bleeding gums ,dryness of throat, and strengthening of teeth, gums and jaws.

The medicated oil or fluid that is used in kavala and gandusha may protect the oral cavity from various infections , and inflammation by its antioxidant property. The oil or the fluid used in herbal mouthwashes is totally free from alcohols , and various chemicals that are repeatedly being used in conventional mouthrinses. Herbal mouthwashes contain no toxic chemicals and are prepared from the eco-friendly drugs that render safety benefits to the human community. In the conventional mouthwashes the problematic ingredients including sodium lauryl sulphate,

polysorbate, cetylpyridinium chloride and benzalkonium chloride all of these are toxic to aquatic organisms where these chemicals end up after spitting them out. Hence Ayurveda recommends the use of kavala, and gandusha that do not contain any toxic ingredients , no added artificial colours and are absolutely safer with regard to biological environment.

### CONCLUSION

On comparison with the conventional mouthrinses, kavala and gandusha are a simple and are cost effective methods for improving the good oral health condition. The usage of medicated oils,kashayas(decoctions) , and the infusions in the kavala and gandusha mentioned in the classics helps to promote good oral health and systemic health as well. On the other hand, conventional mouth rinses come up with various synthetic chemicals including alcoholic compounds which has its own undesirable effects over a period of time like mucosal irritation, altered taste perception, numbness in the tongue,desiccating feeling in the mouth etc. To overcome these undesired effects , Ayurvedic oral health practices like kavala and gandusha can help to fight against oral cavity diseases and provides good strength to teeth, also gandusha and kavala enables exercises to the muscles of oral cavity (tongue, lips, cheeks, soft palate) thereby strengthening and toning them. In Spite of the recent advances in the field of health sciences, traditional oil pulling methods still play a major role in maintaining oral hygiene.



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