

## ROLE OF PRATISARAN OF KHAS KHAS (PAPAVER SOMNIFERUM LINN.) IN DANTA SHARKARA (DENTAL CALCULUS)

Puneet Girdhar<sup>1\*</sup>, Rakesh Sharma<sup>2</sup> and Dr. Vimal Sikri<sup>3</sup>

<sup>1</sup>Phd Scholar, Kayachikitsa Department, Guru Ravidas Ayurved University,  
Hoshiarpur, Punjab.

<sup>2</sup>President, Board of Ethics and Registration for Indian System of Medicine,  
NCISM, New Delh.

<sup>3</sup>Retired Principal Government Dental College.

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\*Corresponding Author

Dr. Puneet Girdhar

Phd Scholar, Kayachikitsa  
Department, Guru Ravidas  
Ayurved University,  
Hoshiarpur, Punjab.

### ABSTRACT

*Ayurveda* text had described the *Mukha Roga* (Diseases affecting the oral cavity) and mentioned the diseases of dental under the heading of *Danta* (Teeth), *Dantamula* (Gum) disease. There are eight types of *Danta Rogas* (Dental disorders) described in the text, where *Dantasharkara* (Dental calculus) has been described as one of the *Danta Roga*. When gravel like dirt is deposited and fixed on teeth, destroying the normal characteristic of teeth, it is known as *Dantasharkara*. *Pratisarana* is gently rubbing over teeth with the tip of a finger. By *Pratisarana*, mechanical pressure is exerted which removes food debris, food impaction, plaque, calculus and bacterial colonies. It helps to remove remaining calculus after scaling. *Khaskhas*, *Poshtadana* or poppy seeds are the seeds of *Ahiphenaa* (*Papaver somniferum* Linn.) which belong to family Papaveraceae. Seeds contain a large percentage of a bland fixed oil called Maw or

Poppy Oil. *Pratisarana* of poppy seeds is done to remove *Danta sharkara*. In today's scenario due to hectic lifestyle, people do not have enough time to focus on their health. Poor routine health also includes oral hygiene which may lead to dental problems like dental calculus, toothache, stained teeth, cavities, or tooth sensitivity. Among them, dental calculus is the most common problem in the society which usually occurs due improper brushing and faulty dietary habits such as junk food, soft drinks, tobacco addiction, and using more cooked

food instead of hard and raw food, etc. Dental calculus is one factor in the initiation and progression of a variety of oral diseases.

**KEYWORDS:** *Pratisarana, Dantasharkara, Khaskhas.*

## INTRODUCTION

Herbal drugs are derived from plants as whole or its part i.e. roots, stem bark, leaves, flower, fruit and seeds for the medicinal purposes. *Khaskhas, Poshtadana* or poppy seeds are the seeds of *Ahiphenaa* (*Papaver somniferum* Linn.) which belong to family Papaveraceae.<sup>[1]</sup> Seeds contain a large percentage of a bland fixed oil called Maw or Poppy Oil. Poppy seeds are demulcent and nutritive, also mild astringent. According to Ayurveda literature it possesses most important therapeutic values.

## AIMS AND OBJECTIVES

To search and re-evaluate the dravya *Khas khas* in *Danta sharkara* for *pratisarana* from various *Ayurvedic* literature and internet.

**Latin name** - *Papaver somniferum* Linn.

**Family** - Papaveraceae

## Taxonomical division of *papaver somniferum* linn.

Kingdom -Plantae

Subkingdom-Viridiplantae

Infra Kingdom- Streptophyta

Super Division- Embryophyta

Division-Tracheophyta

Subdivision -Supermatophyta

Class-Magnoliopsida

Super order -Ranunculanae

Order-Ranunculales

Family -Papaveraceae

Subfamily -Papaveroideae

Genus-Papaver L.

Species-Somniferum L.

Binomial name- *Papaver Somniferum* L.

**Common name**<sup>[2]</sup> - *Khas- Khas, Postdana.*

**Botanical description<sup>[3]</sup>**

An erect, rarely branched, glaucous, annual herb, 60-120 cm. in height.

**Leaves** -Many, amplexicaule, lobed, dentate or serrate, linear-oblong or ovate-oblong.

**Flowers** -Usually bluish white with a purple base or white, purple or variegated, 7.6-17.8 cm. long.

**Capsules** - Globose, stalked. 2.5cm. diameter.

**Seed** -Reniform, black or white.

**Distribution**

A native of west Asia, now grown in U.P. Hoshiarpur and Jalandhar in Punjab, Rajasthan and M.P.

**Morphology of seeds****Macroscopic<sup>[4]</sup>**

The Seeds of *Papaver somniferum* Linn. are dried, white, grey or greyish black in colour, sub-reniform and about 1.25 mm long. The surface is covered with polygonal reticulations about nine in length and five in width of seed, the hilum and micropyle are situated in a depression near one end. The embryo is curved and embeded in endosperm. Sweetish or oily in taste and unpleasant odour.

**Microscopic<sup>[5]</sup>**

Sectional view of seed coat showed the single layer of epidermis which contain somewhat elongated, thick walled parenchymal cells with thick cuticle on outer side. Below which the region is composed of polygonal to oval, thin walled parenchymatous cells. The epidermis of cotyledons usually consisted of rectangular to oval slightly thick walled parenchymatous cells which possesses yellowish brown content. Rest of the part is made up of thin walled hexagonal to polygonal parenchymatous cells, containing starch grains. The starch grains are oval to round in shape. The sectional view of radical showed the epidermis composed of squarish parenchymous cells. Aleurone grains are present in cortical region which consisted of many layers of thin walled, polygonal to oval parenchymatous cells. Action and uses in Ayurveda *Tikt Kashaya Rasam Kapha Vat Haram, Balyam, Vrishyam.*

**Types**

The *Ahiphena* is of three varieties according to its flowers.

**White, Purple and Red**

**Purple and Red:** With black (dark) and white with white seeds. Constituents of *Khas khas* Seeds contains a large percentage of bland fixed oil called Maw or Poppy Oil of pale golden colour drying easily and of an agreeable odour. Seeds are alkaloid free.

**Therapeutic action**

Poppy seeds are demulcent and nutritive, also mild astringent. The poppy seeds yield a bland fixed oil which is used for culinary purposes. Medicinally it is used like olive oil in doses of ½ to 1 drachm. Seeds themselves are innocuous and used as an article of food. As a mild astringent, they are given with sugar and cardamoms (Burnt); they are useful in diarrhoea and dysentery. Poppy seeds are used as syrup in cough and asthma; as they are destitute of any narcotic principle, they are sprinkled over some sweet meats and largely used in confectionary; they are also used in insomnia. The seeds pounded with milk and pasted helps to destroy dandruff.

***Danta sharkara***

According to *Aacharya Sushruta*, it is a disease in which *Danta Mala* (plaque) formed on teeth gets hardened by the action of deranged *Vayu* and lies in a crystallized form at the root of teeth is called as *Dantasharkara*.<sup>[6]</sup>

According to *Aacharya Vagbhata*, accumulation of *Danta Mala* on teeth due to improper oral hygiene methods and *Kapha* gets dehydrated by *Vata* adheres to the teeth, becomes hard and emits bad odour is known as *Dantasharkara*.<sup>[7]</sup>

According to WHO, calculus is a form of hardened dental plaque. It is caused by precipitation of minerals from saliva and gingival crevicular fluid (GCF) in plaque on the teeth. Calculus can form both along with gum line, where it is referred to as supragingival calculus and within the narrow sulcus that exists between the teeth and the gingiva, where it is referred to as subgingival calculus.

According to Michael G. Newman: Dental Calculus consists of mineralized bacterial plaque that forms on the surfaces of natural teeth and dental prosthesis.

**Nidana<sup>[8]</sup>**

**Aharaj nidana:** - *Matsya Sevana, Atimamsa Sevana, Balamulaka, Masa, Dadhi, Kshira, Iksu, Sukta, Phanita, Madhura-Amla-Lavana Rasa Atisevana.*

**Viharaj nidana:** - *Avak Shayya, Danta Dhavana Dwesha.*

*Kapha* is the main *Dosha* associated in *Samprapti* of *Mukharoga* and especially *Dantasharkara*. *Aaharaja Nidana* and *Viharaja Nidana* in one or another way alters salivation or properties of saliva, which is the prime cause of calculus formation. Above all of them, *Danta Dhavana Dwesha* should be considered as the main culprit in pathogenesis, as debris accumulated due to not cleaning teeth or improper cleaning of teeth is converted into calculus as the end result.

### Samprapti

*Samprapti* is the process of manifestation of the diseases by the morbid *Dosha* circulating all over the body. *Samprapti* is the process, which takes place in the body from *Nidana Sevana* to the stage of *Roopa* of the particular disease. *Maharshi Sushruta* and *Vagbhata* have explained *Samprapti* of *Dantasharkara* in a very concise way. Unlike *Netra Roga* specific *Samprapti* has not been described for *Mukharoga*.

<i>Nidana</i>	<i>Mukharoga Nidana &amp; Kapha Prakopaka Nidana</i>
<i>Dosha</i>	<i>Vata, Pitta (Madhava Nidana)+ Kapha</i>
<i>Dushya</i>	<i>Rasa, Asthi</i>
<i>Srotas</i>	<i>Rasavaha, Asthivaha</i>
<i>Srotodusti</i>	<i>Sanga</i>
<i>Agni</i>	<i>Jatharagnimandhya</i>
<i>Roga Marga</i>	<i>Bahya</i>
<i>Udbhava Sthana</i>	<i>Amashaya</i>
<i>Adhithana</i>	<i>Danta</i>
<i>Sadhyasadyata</i>	<i>Sadhya (Lekhana /Aahrana Sadhya)</i>

### Treatment

#### According to *aacharya sushruta*

- *Dantasharkara* tends to demolish the healthy growth, functions, and qualities of teeth. Two procedures have been mentioned, first It should be removed in such a way that it does not hurt the roots of the teeth and then *Pratisarana* (Gentle massage over the tissues i.e. teeth and gingiva) with *khas khas* should be done.
- *Dantasharkara* should be scraped (*Lekhana*) without injuring the gums and then it is anointed (*Sechana*) with *Kshara Taila*. Powder of *Musha* (Crucible), *Kurpa* (A kind of glue) and bark of *Patali* should be applied as *Pratisarana*.
- It is important to prevent reformation of *Dantasharkara*. So *Aacharya Vagbhata* has advised to do *Dantadhavana*, *Jihvanirlekhna*, *Kaval*, *Mukhaprakshalana* etc. daily.

- Pratisarana is advised to remove the infection and to strengthen roots after scraping/scaling.

### ***Pratisarana***

*Pratisarana* is gently rubbing over teeth with the tip of a finger. By *Pratisarana*, mechanical pressure is exerted which removes food debris, food impaction, plaque, calculus and bacterial colonies. It mainly possesses *Shodhana* (Mechanical removal of food particles, plaque, and calculus) and *Ropana* (Healing) properties. It helps to remove remaining calculus after scaling. Very few research works have been carried out considering this problem. In addition, when the scaling procedure is carried out, it may cause inflammation or infections in gums, while *Pratisarana* helps to remove remaining calculus as well as improves the health of gums.<sup>[9]</sup>

### **Use of *khas khas* in *pratisarana***

*Khas khas* is used for *pratisarana* in *Danta sharkara*, *Pratisarana* is used for removing the accumulated debris over the teeth. *Tikta kshaya rasa* of *khas khas* is *laghu*, *rooksha* and *shodhankarak* which is *kledshoshak*, *kaphashoshak*, *krimighana*. It dries up excessive fluids and it detaches the debris on teeth due to its *rooksha guna*. The force applied on teeth due to *pratisarana* removes the waste attached to it slowly. The *chedana karma* of *khas khas* when applied externally works on improving the texture of the teeth.

### **CONCLUSION**

Teeth are the vital part of body. They not only serve for chewing but also for enhancing the look of the person. *Dantasharkara* is accumulation of the debris and plaque on the teeth due to *vat* and *kapha guna*. *Pratisarana* increases the rate of crevicular fluid production, which inhibits bacterial diffusion into the tissues as it has phagocytic leukocytes and enzymes. *Pratisarana* of *Khas Khas* plays a vital role in the removing of the *Sharkara* on the teeth due to its various properties which enhances its look and makes teeth look clear and even in texture.

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