



## Review Article

### PARANASAL SINUSITIS (*APEENASA/PEENASA*) AND ITS MANAGEMENT IN AYURVEDA

Vanishree<sup>1\*</sup>, Vishwambhara<sup>2</sup>, B.A.Venkatesh<sup>3</sup>, Bali Yogitha M.R<sup>4</sup>

<sup>1</sup>Professor, Department of Shalaky Tantra, Sushrutha Ayurvedic Medical College, Bangalore.

<sup>2</sup>Retired Principal, Government Ayurvedic Medical College, Bangalore.

<sup>3</sup>Professor and HOD, Department of P G Studies in Shalaky Tantra, Sri Kalabyraveshwara Swamy Ayurvedic Medical College & Hospital & Research Centre, Bangalore.

<sup>4</sup>Professor and HOD, Department of Shareera Rachana, Sushrutha Ayurvedic Medical College, Bangalore.

**KEYWORDS:** Ayurveda, *Apeenasa*, *Peenasa*, Paranasal sinusitis.

#### ABSTRACT

Sinusitis is defined as the inflammation of the mucosa either of any one or all of the paranasal sinuses. In humans, there are four paired sinuses which are termed as paranasal sinuses and they are maxillary, frontal, ethmoid and sphenoid sinuses. Ayurveda being an ancient holistic science aims at alleviating the disease and protection and prevention of the positive health. *Shalaky Tantra* is one of the *Astangas* of Ayurveda that deals with the *Uttamanga* and the diseases related to *Urdhvajatru*. Paranasal sinusitis, the most common disease in *Shalaky tantra* can be correlated to the disease *Apeenasa*, *Peenasa*, *Dusta Pratishtyaya* etc in Ayurveda based on its signs and symptoms. *Apeenasa* and *Peenasa* are used interchangeably for paranasal sinusitis in Ayurveda and they are managed with *Deepana Pachana*, *Vamana*, *Virechana*, *Dhumapana*, *Nasya Karma* or *Shirovirechana*. *Nasya Karma*, one of the *Panchakarma* therapy and the best therapy for the *Urdhwajatrugata Rogas* plays a vital role in the successful management of the sinusitis. In this therapy, the medicine is administered through nose either in the form of ghee, oil, powder, liquid or smoke. It is particularly useful in the treatment of diseases occurring in the organs situated above the clavicle but indirectly it works on the whole body by improving the functioning of the endocrine glands and nervous system.

#### \*Address for correspondence

#### Dr. Vanishree Sampath

Professor,  
Department of Shalaky Tantra,  
Sushrutha Ayurvedic Medical  
College, Bangalore, Karnataka.

Email:

[dr.vanishreesampath@gmail.com](mailto:dr.vanishreesampath@gmail.com)

Mob: 9480669381

#### INTRODUCTION

The nasal cavity is a roughly cylindrical, midline, airway passage that extends from the nasal ala anteriorly to the choana posteriorly. It is divided in the midline by the nasal septum. On each side, it is flanked by the maxillary sinuses, and roofed by the frontal, ethmoid, and sphenoid sinuses, in an anterior to posterior fashion. While seemingly simple, sino-nasal anatomy is composed of intricate and subdivided air passages and drainage pathways that connect the sinuses. There are 4 paired sinuses in humans which are termed as paranasal sinuses such as maxillary sinuses, largest of the paranasal sinuses, located under the eyes in the maxillary bones. Frontal sinuses, located superior to the eyes within the frontal bone. Ethmoid sinuses, formed from several discrete air cells within the ethmoid bone between the nose and eyes and the sphenoid sinuses that are

located within the sphenoid bone.<sup>[1]</sup> Sinusitis is the inflammation of the mucosa of any one or all of the paranasal sinuses. When all sinuses are involved it is called as pansinusitis.<sup>[2]</sup> One in eight Indian suffers from sinusitis caused by the inflammation of the Paranasal sinuses. The worldwide incidence of sinusitis is recorded as 31 million cases in US that is 146 per 1000 population, and in Indian incidence is estimated that 134 million Indians are suffering from chronic sinusitis.<sup>[3]</sup>

Sinusitis is one of the most common diagnoses in primary care. It causes substantial morbidity, often resulting in time off work, and is one of the commonest reasons why a general practitioner will prescribe antibiotics.<sup>[4]</sup> Paranasal sinusitis is also called as Rhinosinusitis and according to The European Academy of Allergology and Clinical

Immunology acute rhinosinusitis is defined as, "Inflammation of the nose and the paranasal sinuses characterised by two or more of the following symptoms: blockage/congestion; discharge (anterior or postnasal drip); facial pain/pressure; reduction or loss of smell, lasting less than 12 weeks."<sup>[5]</sup>

Sinusitis is generally triggered by a viral upper respiratory tract infection, with only 2% of cases being complicated by bacterial sinusitis.<sup>[6]</sup> About 90% of patients in the United States are estimated to receive an antibiotic from their general practitioner, yet in most cases the condition resolves without antibiotics, even if it is bacterial in origin.<sup>[7]</sup> A raised erythrocyte sedimentation rate and C reactive protein have been found to be helpful,<sup>[8]</sup> and X Ray examination of the sinuses, ultrasonography, computed tomography, sinus puncture, and culture of aspirate have also been described.

Medical treatment options for chronic rhinosinusitis should begin with topical nasal steroids along with aggressive treatment of any underlying cause or co-morbid allergy. Oral steroids should be reserved for refractory cases, particularly when underlying allergy is present.<sup>[9]</sup> Once symptoms have resolved, it is essential to maintain improvement with long term (>3 months) intranasal steroid treatment in the form of an aqueous nasal spray.<sup>[5]</sup>

*Shalakyā Tantra* is one of the *Astangas* of Ayurveda. It is an important branch of Ayurveda which deals with the study and treatment of diseases of eye, ear, nose, teeth, throat, head and mouth.<sup>[10]</sup> Paranasal sinusitis can be correlated to the disease *Apeenasa* in Ayurveda based on the symptoms and the same has been opined by all the *Acharyas*. As per *Acharya Charaka*, if *Dushta Prathishyaya* is not treated properly, it will lead to *Apeenasa*. In this disease, *Vata* and *Kapha Doshas* are aggravated. As there are no many studies on the *Apeenasa* and its management, an effort was made to study the disease in detail.

*Apeenasa* is a disease which causes impairment of smell sense, which may cause ostracization, crusting inside nasal cavity, nasal obstruction and headache due to *Vata* and *Kapha Doshas*. *Apeenasa* presents with nasal obstruction, sometime dry and sometime wet nose, absence of smell and taste sensation, noisy breathing, thick and yellow coloured discharge from the nose.<sup>[11]</sup> Other *Nasagata Rogas* include *Pootinasa* that presents with foul smell through the nose and mouth and *Dustapratishyaya* with obstructed nose or open nose, wet or dry nose and the loss of smell sensation.<sup>[12]</sup>

In Ancient Ayurvedic science, we find many therapies like *Nasya Karma*, *Akshitarpana* (local

therapy for eyes), *Putapaka* (local therapy for eyes) etc which is said to be very effective in the management of *Nasagata* and *Shirogata Rogas* (diseases of head). Nasal route of drug administration is the natural choice for the treatment of *Nasagata Rogas* (local nasal disorders) as well as other supraclavicular diseases. In this therapy, the medicine is administered through nose either in the form of ghee, oil, powder, liquid or smoke. It is particularly useful in the treatment of diseases occurring in the organs situated above the clavicle but indirectly it works on the whole body by improving the functioning of the endocrine glands and nervous system.

*Apeenasa* is one of the *Nasagata Roga* and an *Urdhvajatrughata Vyadhi*. *Nasa* is said to be the main doorway to *Shiras* and hence *Chikitsa* of *Urdhvajatrugata Vyadhis* are applicable in the management of *Apeenasa* too. The treatment of these *Nasagata Rogas* includes *Deepana pachana*, *Snehana*, *Swedana*, *Vamana*, *Virechana*, *Dhoomapana*, and *Nasya*. Dietetic instructions include *Tikshna*, *Laghupaki Ahara* and *Ushnajalapana*.<sup>[11]</sup>

#### **Deepana-Pachana**

The importance of *Deepana-Pachana* drugs is to bring the *Sāma Doshā* to *Nirāma* state. Thus *Deepana-Pachana* should be administered in the beginning of the *Snehana* therapy depending upon the conditions, when it arises. *Deepana Pachana* drugs are used to increase the *Agni* and for the digestion of *Ama*.<sup>[13]</sup>

#### **Snehana/Mukhabhyanga**

*Abhyanga* causes *Mriduta* of *Doshas* and according to modern science massage to a specified area causes increased blood circulation.<sup>[14]</sup>

#### **Swedana Karma**

*Swedana* causes *Vilayana* (liquefaction) of accumulated *Doshas* (mucous).<sup>[14]</sup>

#### **Vamana Karma**

*Charaka* defined *Vamana* as a process in which morbid *Doshas* are eliminated through upper channels i.e., mouth. *Chakrapani* mentions *Urdhavabhaga* as *Urdhavamukha*. *Bhavaprakasha* also has same opinion for *Urdhva* as *Mukhamarga*. *Vamana* is a process in which *Apakva Pitta* and *Kapha* are removed forcefully through upper channels.<sup>[15]</sup>

#### **Virechana Karma**

*Virechana* (therapeutic purgation) is a common procedure that is widely practiced among the *Panchakarma* treatments (pentad treatments).<sup>[16]</sup> During the process of *Virechana*, about 2 litre of the body fluid is drained out, which has dissolved biochemical in them. Thus, *Virechana* in the current study has shown its action in three ways. The drugs

increase the secretion by irritating the mucous membrane of the GIT. Second, it prevents absorption of nutrients, and finally, it increases the gastro intestinal motility.<sup>[17]</sup>

### **Dhoomapana Karma**

*Dhumapana* works on *Vata* and *Kapha Dosha*. Due to *Sukshma Guna* of drugs used for *Dhumapana*; it opens/enters the smallest channels, with *Ushna* and *Tikshna Guna* it liquefies and eliminates the *Dosha* from their nearer routes.<sup>[18]</sup> However gaseous form of medicine increases the bio availability of it. The gases are absorbed in blood by pressure difference and greater surface area in lung. By using the particular process of *Dhumapana* i.e., uses three puff of smoke without exhalation, one can achieve its absorption at maximum level.<sup>[19]</sup>

### **Nasya Karma/Shirovirechana**

The *Taila* instilled in nasal cavity moves to olfactory epithelium and Olfactory Bulb which proceed through Cribriform Plate, Ant. Cranial fossa and medial or lateral area of cerebral cortex. The chemical impulse, which generated by *Nasya* finally converts in to neuronal impulse and influences on cerebral cortex area and there by producing stimulatory effect resulting in evacuation of *Doshas*. The *Nasya Dravya* also nourishes and rejuvenates the olfactory nerve and helps in its proper function.<sup>[11]</sup>

### **DISCUSSION**

In Ayurveda, the term sinusitis is referred to as either *Peenasa* or *Apeenasa* which is described as a *Vatakaphaja Krichasadhya Vyadhi*. Some authors opine that both *Peenasa* and *Apeenasa* are one and the same and some are of different opinion. In both these conditions, therapies that have been mentioned above will be very effective if applied after the proper diagnosis and assessment. In the Srilankan Medicine, the *Apeenasa* which occurs as a complication of *Dusta Pratishyaya* is termed as *Peenasa*. Both the terms *Peenasa* and *Apeenasa* have been used interchangeably.

*Charaka Samhita* and *Susruta Samhita* describe *Samshamana Krama* especially *Deepana*, *Paachana*, and *Langhana* to be administered to patients suffering from *Apeenasa*. In *Charaka Samhita* and *Susrutha Samhita*, it is advised to conduct *Vamana Karma*, *Virechana Karma*, *Aasthapna Vasti* and *Nasya Karma* in the management of *Apeenasa*. Sri Lankan traditional physicians perform *Rakta Mokshana* using leeches on nasal polyps which may occur as a complication of *Peenasa*. *Sweda Karma*, *Dhoomapana*, *Gandoosha*, *Kawalagraha*, *Karna Poorna*, *Anjana Karma* are also carried out as therapeutic measures. Additionally, *Hisgellum*, *Engagellum*, *Veidu* and *Nila Vedakama* are used as

therapeutic measures in management of *Peenasa* by traditional physicians.<sup>[20]</sup>

In one study of Jayanta et al, that was conducted on 30 clinically diagnosed patients of *Peenasa* (Sinusitis) to evaluate the efficacy of *Vamana Karma*, highly significant results were observed in *Kshavathu*, *Nasavrava*, *Nasaavarodha*, *Shirashoola*, *Shirah Gourava* and *Ashrusrava* and no difference was observed with respect to *Mukhadaurgandhya* after the treatment.<sup>[21]</sup>

One more study with 30 subjects of *Peenasa*, chronic simple rhinitis were studied in two groups; Group I and Group II. In group-I, patients were advised *Shatahvadi Dhumapana* and in group-II, patients were advised *Shatahvadi Dhumapana* and *Pippali Rasaayana* orally. Better relief was observed in group II which received combined treatment than group I which received only *Shatahvadi Dhumapana* therapy.<sup>[22]</sup>

In a randomized controlled study with thirty patients divided into three groups, 10 in each. In Group A, *Nasya karma* was given once a day for 7 days and in Group B, *Vyoshadi vati* was given twice a day for 7 days and in Group C, *Nasya karma* and *Vyoshadi vati* was given in combination for 7 days. Statistically significant results were seen in reduction of *Shirashoola* and *Shwasagurguratha* and improvement in *Gandhagnananasha* of patients suffering from *Apeenasa* with  $p < 0.001$ . Group C (*Nasya karma* with *Vyoshadi Vati*) showed statistically significant results compared to Group A (*Nasya karma*) and Group C (*Vyoshadi vati*) in reduction of *Shirashoola* and *Shwasagurguratha* and improvement in *Gandhagnananasha* of patients suffering from *Apeenasa*.<sup>[23]</sup>

In an open clinical study of *Channabasavanna* et al, 15 patients of *Dustapratishyaya* were administered *Kalingadya Navana Nasya* for 7 days, 6 drops in each nostril. Statistically significant relief was observed in *Nasavrava*, *Nasaavarodha*, *Shirashoola* and *Gandha Ghrana Nasha* symptoms.<sup>[24]</sup>

Although, all the therapies has its own role to play in the management of the disease *Apeenasa*, *Nasya Karma* or the nasal instillation therapy plays the major role in relieving the issue. Nasal route of drug administration is the natural choice for the treatment of local nasal disorders as well as other supraclavicular diseases. This transmucosal nasal drug delivery is a non-invasive drug administration route. Unlike the other detoxification therapies which are focusing on the pacification of particular *Doshas*, this therapy is quite unique as it aims at pacification of any disorder in the head and neck region. *Acharya Vagbhata* has opined that, the *Nasa* (nose) is the *Dwara* (door) for *Shiras*. The drug administered

through nose reaches the *Shringataka Marma* and spreads throughout *Murdha, Netra, Shrotra* and *Kantha* through their *Shiras* (*Shringataka Marma* is a *Sira Marma* and formed by the *Shiras* of *Nasa, Akshi, Jivha* and *Shrotra*). Thereby eliminates the morbid *Doshas* of *Urdhwajatra Vyadhis* (diseases of the upper part of the body), expels them from the *Uttamanga* and helps in relieving the disorders.<sup>[10]</sup>

Though this study gives the brief picture of the disease *Apeenasa*, a large number of studies need to be carried out both on *Apeenasa* and *Peenasa* to find the similarities or the differences. This further helps to manage the disease successfully.

## CONCLUSION

Sinusitis is one of the common disorders among the *Nasagata Rogas* and an *Urdhwajatrugata Vyadhi* which is increasing due to the climatic variations as a result of pollution. This sinusitis can be called as *Apeenasa, Peenasa, Dusta Pratishtyaya* etc and all these are *Nasagata Rogas*. For paranasal sinusitis, both *Apeenasa* and *Peenasa* can be applicable. Even Srilankan Medicine also speaks about both *Apeenasa* and *Peenasa* and opines both are same. In addition to Ayurvedic therapies, *Raktamokshana* with leeches and *Hisgellum, Engagellum, Veidu* and *Nila Vedakama* can be found in the management of *Apeenasa*. To get a better understanding of these both, more and more studies needs to be carried out on both *Peenasa* and *Apeenasa* along with the treatment described in *Samhithas* towards the successful management of the disease.

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