



YOGIC MANAGEMENT OF CHRONIC SINUSITIS W.S.R. TO NETI KRIYA

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ABSTRACT

Today in the era of modernization there is need to check our life style that is very much influence from the western world. Our changing food habits like junk food, fast food, are a major cause to produce Sinusitis which in turn produces many health hazards like headache, migraine and other Life style disorders etc. As per Ayurveda the nose is the main gate of uttamanga (Brain) and directly connected to environment hence if anybody goes unpleasant atmosphere or place where the air has moisture, extra cold is enter in our body through nose. Neti kriya is the one most procedure given by Ayurvedic medicinal system which has very tremendous result on sinusitis.

KEYWORDS: Ayurveda, sinusitis, Neti kriya.

INTRODUCTION

As the nose is in direct contact with the external environment, it is exposed to the many microorganisms and pollutants present in the atmosphere. Due to the increase in environmental pollution and the busy lifestyles of today, rhinitis is a common disease in the present era^[1] Improper management of this stage leads to sinusitis, which may later lead to chronic sinusitis.^[2] More than 120 million Indians suffer from at least one episode of sinusitis each year^[3] and, according to the American Academy of Otolaryngology and Head and Neck Surgery, more than 37 million Americans suffer from at least one episode of sinusitis each year.^[4] neti is one among six purificatory measures to be utilised by yoga practioner for inner

and outer purification. Neti includes number of operations affecting nose, which relates cleaning of healthy nasal passage and related function. Neti is a pre-requisite for cleaning up respiratory passage for the prop[er practice of pranayama. In modern medical science, a wide range of antibiotics and decongestants are available for the treatment of sinusitis.^[5] But these drugs can help only in the initial stage. FESS (functional endoscopic sinus surgery), Caldwell-Luc operation, Howarth's operation, etc., are the chief operative procedures to drain the sinus in advanced stages but many complications are associated with these surgical procedures, including bleeding, oro-antral fistula, infraorbital anaesthesia, neuralgia, and paraesthesia.^[6] The modern treatment modalities for rinosinusitis are also expensive and high chances of reoccurrence. The indigenous technique of net seems to be appropriate, simple and cost effective for the patients of rinosinusitis. This paper attempts to focus on the scientific basis of some Yoga practices that may help in the prevention and management of sinusitis.

DEFINITION

Sinusitis is one of the most commonly diagnosed diseases in the United States, affecting an estimated 16% of the adult population annually. It extracts an overall direct annual health care cost of \$ 5.8 billion. Total restricted activity days increased from 50 million per year during 1986 through 1988 to 73 million per year during 1990 through 1992. Sinusitis also significantly affects quality of life in some symptom domains even more than other chronic diseases, such as chronic obstructive pulmonary disease, angina, and back pain.

Sinusitis, defined as Infectious or noninfectious inflammation of one or more of the, 4 paranasal sinuses, each lined with pseudo stratified ciliated columnar epithelium and goblet cells Frontal, Maxillary, Ethmoid and Sphenoid. It is characterized as acute when lasting less than 4 weeks, subacute when lasting 4 to 8 weeks, and chronic when lasting longer than 8 weeks. Recurrent sinusitis consists of 3 or more episodes of acute sinusitis per year. A non infectious form of chronic sinusitis is termed chronic hyperplastic eosinophilic sinusitis. Viral upper respiratory tract infections frequently precede subsequent bacterial invasion of the sinuses by *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Moraxella catarrhalis*.^[7]

CAUSES AND RISK FACTORS

- Anatomic abnormalities- Certain anatomic variants, such as septal deviation, Hallercells, paradoxical curvature of the middle turbinate, have been suggested to predispose to obstruction of the ostiomeatal unit, development of CRS.

- Air pollution - Heinrich et al found an association was found between total suspended particles and sulfur dioxide levels and for bronchitis, sinusitis and frequent cold^[8]. Irritants in air pollution, including sulfur dioxide^[9,10], ozone^[11], and formaldehyde (indoor pollutant)^[12], but not diesel exhaust particles^[13], have been reported to adversely affect mucociliary clearance.
- A number of factors associated with sinusitis should be considered. Probably the most common is viral upper respiratory tract infections. Diseases associated with sinusitis are otitis media and bronchial asthma. Although no direct causal factor between sinusitis and asthma has been found, a number of studies in both children and adults suggest that medical management, surgical management, or both of sinusitis results in objective and subjective improvement of asthma. Recently, gastroesophageal reflux disease (GERD) specifically laryngopharyngeal reflux has been suggested as a cause of sinusitis, and there are several studies in children and adults indicating that medical treatment of GERD results in significant improvement in sinusitis symptoms.^[14]
- Indoor dampness and mold exposure - Although some studies of health effects associated with self-reported exposure to indoor dampness or mold have found an increase in sinusitis.^[15]
- cigarette smoking- Active cigarette smoking was associated with an increased risk of sinus disease however, no increased risk was found in association with SHS exposure.^[16]
- Humoral or innate immune deficiency - Humoral or innate immune deficiency should be considered as an underlying factor in patients with CRS with a pattern of recurrent purulent infection. In a pediatric population Shapiro et al.^[17] found that 34 of 61 children with refractory sinusitis had abnormal results on immune studies, with decreased IgG3 levels and poor response to pneumococcal antigen being the most common abnormalities found.

The various possible pathological leads in the development of the disease are

- Obstruction of the various ostia
- Impairment in ciliary function
- Increased viscosity of secretions
- Impaired immunity
- Mucus accumulates
- Decrease in oxygenation in the sinuses
- Bacterial overgrowth

SYMPTOMS CLINICAL FEATURES

Prominent symptoms of acute sinusitis include nasal congestion, purulent rhinorrhea, facial-dental pain, postnasal drainage, headache that occurs daily for weeks at a time and is often notably worse in the morning, and cough. Chronic sinusitis symptoms are similar but might be even more subtle. Pain is much less a feature of chronic sinusitis. Clinical signs of both acute and chronic sinusitis include sinus tenderness on palpation, mucosal erythema, purulent nasal secretions, increased pharyngeal secretions, and periorbital edema^[18]

YOGIC MANAGEMENT OF SINUSITIS

Yoga, the ancient cultural heritage of India has recently become popular as a therapeutic adjuvant to modern scientific medicine. A lot of research has been done on various aspects of Yoga in relation to health and disease. One of the most important Yoga practices for the prevention and management of sinusitis is the Neti Kriya that is one of the Shat Karmas of Hatha Yoga.^[19] All the diseases occurring in the head and neck can be dealt with neti^[20] Neti is the practice of cleaning the nasopharyngeal tract with liquids or thread. Types of Neti include Jala Neti (nasal irrigation with lukewarm saline water) and Sutra Neti (nasal cleaning with a thread or catheter. Others are Dugdha Neti (with milk), Ghrta Neti (with ghee).

SUTRANETI

The classical form of neti described is Sutraneiti where a soft lubricated thread is inserted through nose to the length of one hand span so that it comes out of mouth. Sutra Neti is performed with a rolled string of cotton which has previously been dipped in melted bees wax, or a soft rubber catheter. The width of thread should be 4mm and length 36cm.

Technique

- Sit in *kagasana*. Insert the *sutraneti* into one of the nostrils, whichever is more active at the movement, using both the hands to push it through.
- When cord comes to throat catch hold of the cord with index and middle finger and draw it out slowly through the mouth.
- The cord is gently pulled to and fro for some time, removed and then threaded through the other nostril and out the mouth again with practice the cord can be passed in one nostril and out the other nostril.
- This technique needs some practice and, therefore, for the first time it should only be practiced under the guidance of a Yoga teacher.

Benefits

- Sutraneti stimulates the nerves and related brain functions of the eyes, tear ducts and olfactory zone.
- It increases mucus briefly, flushing out the secretory glands and removing stagnation of the blood.
- Increases resistance to invasion of viruses
- Clears away the dried up mucus deposits and foreign particles and should be followed by jalaneti.
- This practice assists in balancing the airflow of the two nostrils

JALANETI

Sutraneti is associated with practical inconvenience of putting the thread inside the nose which requires expertise and especially prepared thread. Thus these facts have limited the practice of Sutraneti and to overcome these contemporary yoga experts promoted Jalaneti. In Jalaneti sutra is replaced by smooth flow of water stream into the nasal passage that comes out thorough nostril instead of mouth. Jalaneti can be done at any time of the day. It requires specially made vessel, the Neti Pot, with warm, salty water. The temperature of the water should be 38-40° C, with about 1 teaspoon of salt per 1 litre of water.

Technique

- Sit in kagasana or bend the head over a wash basin and gently insert the spout of the Neti Pot into the right nostril (which as a result, closes it).
- Bend the head slightly forward and at the same time tilt the head to the left so that the water may flow out of the left nostril. Breathing takes place through the opened mouth. Keep the body relaxed.
- Pour approximately half the contents of the pot through the right nostril and clear the nostril.
- Now gently insert the spout of the Neti Pot into the left nostril and tilt the head to the right, so that the water may flow out through the right nostril. When finished, blow out all remaining water from both nostrils using the technique of Kapala Bhati Pranayama

Precaution

To complete the purification of the nose, strongly expel the breath a further 3-5 times through each nostril while holding the other nostril shut (as when blowing your nose). It is important that the mouth remains open during this process to prevent water getting into the ears.

Benefits

- Neti removes all the dirt and bacteria filled mucus from the nasal cavity
- Helps to drain sinus cavity which helps to reprogramme the body's natural mechanism against nasal infections
- Thinning remaining mucus so that sinuses and ostia don't clog^[21,22]
- Decreasing swelling of the nasal mucosa^[21,23]
- Removing histamine, leukotrienes, and other inflammatory substances^[21, 24]
- Increasing frequency that cilia beat to remove mucus, crusts and debris
- It has cooling and soothing effect on the brain by drawing out excessive heat and therefore beneficial for headaches and mental tension
- Has a positive influence on all sense organs in the head. Strengthens vision and relieves tired eyes (e.g. after working long hours at the computer)
- Neti can also cure or at least ease hay fever and pollen allergies.

DISCUSSION

Rhino sinusitis is a common clinical problem with considerable morbidity and often, refractory symptoms, accounting for millions of patient visits to medical practitioners. The incidence of sinusitis has soared in last decade due to pollution, urbanisation and increased antibiotic resistance.

Sinus health of the paranasal sinuses depends on three criteria as mentioned below

- Mucous secretion of normal viscosity, volume, and composition,
- Normal mucociliary flow to prevent mucous stasis and subsequent infection
- Open sinus ostia to allow adequate drainage and aeration.^[25]

Nasal cavity is easily accessible and can get a good wash with most any method of flushing, the sinuses are much harder to reach. The frontal and sphenoid sinuses are virtually inaccessible. The tiny ostia are way into the sinuses. Those small openings are made even smaller by inflammation of the mucosal lining from infection, allergy, or irritation caused by

dust or smoke. This paralysis muco ciliary transport system. the sinuses get filled up with secretions that get infected. Neti Kriya is based on rubbing of nasopharyngeal mucosa as well as irrigating it by variety of fluids. The sutrneti depends primarily on the physiochemical and mechanical effect off rubbing. This possibly helps to eliminate the sticky mucus from the cavity and stimulate inner cellular lining by direct friction as well as improved circulation. Jalaneti has special significance in nasal pathologies as it has some special feature associated with it. Most important is use of hot water, use of salt in isotonic concentration in water and adoption of special technique of irrigation with neti pot. the traditional method of jala neti as described in the *Gheranda Samhita* can be large volume, and the suction effect of sniffing the saline solution into the nostrils creates pressure. However, this specific technique has not been studied for effectiveness in any clinical trials to date. Tilting head helps water to flow down with gravitational force enabling its easy reach to deeper areas of sinuses. This assists in elimination of dissociated mucus, flusing out debris. He nasal inflammation with increased secretion causes pooling of secretions and bacterisl infection. decongestion of mucosa improves mucocillary clearence and ciliary beat frequency.

CONCLUSION

All of this interpretation helps us understand the scientific basis of how Jala Neti, one of the Shat Karmas can help in preventing and managing sinusitis in an effective manner by improving mucociliary clearance, thinning the mucus, and by decreasing the inflammation that blocks the sinus ostia. This information must be taken to the primary health care level as it has the potential to reduce the use of antibiotics and other suppressant medications in a healthy and cost effective manner.

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