

## *Jalaneti* application in acute rhino sinusitis

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*Neti* is among one of the 6 purificatory measures of yoga, which are practiced by yoga *sadhaka* for inner purification. *Jalaneti* (saline nasal lavage) is a simplified version of *Neti*, which utilizes saline water instead of cotton thread to clean the nasal passage. *Nasya* of Ayurvedic therapy is a generic term for all nasal applications having therapeutic activities. *Jalaneti* is of common practice to most yoga and nature cure units, however its scientific validation has not been attempted through controlled studies and case reports. Saline nasal irrigation has been promoted as an adjunct to the conventional therapy for common cold and sinusitis in many western countries. The indigenous technique used in *Jalaneti* seems to be more appropriate and cost effective for the patients of sinusitis as is seen in the case study, where *Jalaneti* was utilized as the sole therapy to treat the acute sinusitis. A remarkable recovery was observed within a 10-day period of twice a day *Jalaneti* therapy and the results were consistent till a follow up after 6 month.

**Key Words:** *Jalaneti*, Rhino sinusitis, Yoga

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*Jalaneti* (saline nasal lavage) is a common mode of therapy in yoga and naturopathy setups. This is commonly used in a variety on nasal conditions including sinusitis, allergy and common cold. In naturopathy clinics, this procedure is not only intended to deal with nasal diseases but also helps to promote and maintain nasal health in normal conditions<sup>1</sup>. The procedure is practiced regularly in a specified manner to obtain maximum benefits. *Jalaneti* as is practiced today at yoga and nature cure clinics, does not have a classical mention. In ancient yoga texts, *Neti* has been explained as one of the six cleansing procedures (*Khata karma*) to be utilized by yoga practitioners for their inner and outer purification before attaining to the higher stages of yoga<sup>2</sup>. The classical form of *neti* described is *Sutraneti* where a soft, lubricated cotton thread is inserted through the nose to the length of on hand span so that it comes out of the mouth<sup>3</sup>. To practice *Sutraneti*, a specially prepared thread is used which is made of cotton, tightly woven together and coated with beeswax. The width of thread should be in approximation to 4 mm and length should be 36 cm.

For the sake of convenience, these days lubricated, thin rubber catheters are used, however their efficacy in comparison to the cotton thread therapy is thought to be inferior. Once the thread is out of mouth, both of its ends are gripped in a way to enable a mild friction in nasal –oropharyngeal cavity by repeatedly pulling it out and in. This possibly helps in elimination of any sticky mucus from the cavity and stimulates the inner cellular lining of the passage by direct friction as well as through improved circulation.

Same process, once completed at one nostril, is followed at the other nostril to complete the procedure. All the diseases occurring in head, neck, eye, ear and nose can be dealt well with *neti* therapy<sup>2</sup>. Its regular practice can eliminate the diseases caused by excess of *Kapha* occurring at places above neck (*Urdhva jatru*) and can give an improved vision<sup>4</sup>. Though praised much for its health promotive and curative effects, *Sutraneti* has been associated with the practical inconvenience of putting the thread inside the nose, which requires an expertise and also requires a specially prepared thread to use with. Moreover, putting the thread in nose can never be an appealing proposition to female and adolescent age group patients. These all factors in combination have

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limited the practice of *Sutraneti* and asked for a better and less invasive procedure to practice with. Possibly, to overcome these limitations of *Sutraneti*, contemporary naturopaths and yoga experts promoted *Jala neti*.

In *Jalaneti*, *sutra* is replaced by a smooth flow of water stream into the nasal passage and instead of coming out through mouth it comes through the other nostril. Luke warm saline water is used for this purpose with the help of a special pot, called *Jalaneti* pot (*Neti's lota*). This pot is a simple irrigation pot with a capacity of 150-200 ml with a nozzle on one side to facilitate irrigation. Following technique is used in *Jalaneti*: squat on the toes in *Kagasana* (crow posture), tilt the head to the right side and place the *Neti* pot's nozzle in left nostril, open the mouth slightly and breathe through mouth, keep the whole body relaxed and let the water come out of the right nostril, after half of the water is used, remove the *neti's* pot, remain bend forward, center the head and let the water come out of nose, close the right nostril with thumb and blow gently to remove any remaining water from the cavity, and repeat the process from other nostril<sup>5</sup>. Through out the process breathing has to be done with mouth. While blowing out the remains of water from nasal passage, it should be moderate to avoid any harm to ear.

Nasal application of liquids and drugs has been termed as *Nasya* in Ayurveda. *Nasya* is a generic term referring to all form of medicine used through nose. As nose is internally linked with brain, this is presumed that any drug application through its passage may directly affect the brain and its pathology<sup>6</sup>. As per the type of drug, mode of application, and their ultimate effect *Nasya* is classified as of 5 types (Table1)<sup>7</sup>. Out of these *Avapeeda*, *Nasya* has a resemblance to *Jalaneti* of yoga therapists. This is important to recognize here that in different schools of yoga and naturopathy, a modified version of *Jalaneti* has also been recommended for certain conditions and this uses luke

warm milk, decoction or luke warm oil for the purpose of *neti*.

*Nasya* as per its pharmacological properties of the drugs may be used for *Virechana* or elimination of *doshas* (disease causing factors), *Tarpana* (for providing nourishment to the tissue), or *Samana* (controlling of the symptoms). The clinical effects of *Nasya* or the *neti* therapy have hardly been reported in the form of a controlled study or through individual case reports. There have not been much efforts made towards the standardization of procedure to ensure the uniformity of application, which is essential for the uniform effects at the multicentric trials. Very recently, saline nasal irrigation has been promoted in west as a technique to moisturize the nasal cavity. Use of saline solution improves the mucocilliary clearance and helps in removal of crusts<sup>8</sup>. This therapy is recommended as an adjuvant to the conventional therapy of rhino sinusitis, nasal allergies and postoperative case in nasal surgery. In view of the current interest generated in nasal irrigation therapy in the global scenario, it was considered important to review *Jalaneti* and *Nasya* techniques of Traditional Indian Systems Medicine and to back them with evidence based supports.

### Enumeration

A 35-year-old female presented with symptoms of common cold followed by an acute exposure to cold winds in winter. The presenting symptoms were primarily nasal discharges and nasal congestion associated with few generalized symptoms as mild head ache, malaise and mild fever. She was treated with conventional medicines for the symptoms and this included use of antipyretics, anti histaminic and nasal decongestants. After 4 days of therapy, the symptoms resolve and the patient was advised to stop the medicines. Soon after stopping the medicine, the patient noticed an afternoon headache along with mild grade fever without any other nasal or systemic feature. Headache used to remain minimal in the beginning but accentuated as the days passed. A temperature recording for the consequent days revealed a mild grade fever (below 100 ° F) through out the day. Empirical antibiotic therapy was started but the headache and fever continued further. A detailed investigative workup to establish the cause of fever was to no avail. A continuation of fever and head ache despite of the empirical antibiotic therapy and in the absence of any clue for the possible reason of symptoms, a repeat interview of the patient was

Table 1—Type of *Nasya* and their mode of application

Navan	Application of oil drops in nose through a dropper
<i>Avapeeda</i>	Application of watery extract of herbs squeezed in nose
<i>Dhamapana</i>	Application of micronised powder of herb sniffed in nose
<i>Dhuma</i>	Application of herb smoke inhaled through nose
<i>Pratimarsha</i>	Application of lubricant in nose through finger

planned on 10<sup>th</sup> day of therapy. A mild tenderness around the para nasal area on the face was detected during this interview with all other WNL clinical findings.

An acute rhino sinusitis was suspected as the cause of fever and the patient was advised to go for a schedule of *Jalaneti* for few days. No other medication was prescribed and the patient was left only with *Jalaneti* instructions and an advice for its twice in a day application. *Jalaneti* as per the given instructions was started from the next day. On first day of its use, it was mildly painful but continued further. On 2<sup>nd</sup> & 3<sup>rd</sup> day of therapy, copious amount of thick and viscid yellow mucous came out of nasal passage and through mouth during blowing out process immediately after the procedure. This expulsion of mucous was associated with an instant feeling of relaxation, lightness of head and reduced headache. The symptoms of headache and fever gradually resolved on the consequent days and vanished finally during the course of therapy, which continued for 10 days. A re-examination after 10 days of therapy was without any symptom or sign of the preceding disease. A 6-month later follow up of the same patient was in the perfect health and without any affliction of nasal diseases during the preceding months.

### Discussion

Sinusitis is a bacterial infection of the para nasal sinuses and often occurs as a consequence of common cold if not treated well. It occurs when there is so much swelling in the nose that the ostium is swollen and shut. This paralyzes the mucociliary transport system. The sinus then fills with secretions. These secretions become infected and the sinusitis develops. This may begin with a feeling of nasal stuffiness. Secretion and postnasal drip may or may not be present. Resulting pressure within the sinuses increases until it becomes painful. There can be an elevated temperature. The cold is transmitted from person to person, either by direct contact with infected mucus or by viral particles breathed out of the sick individual and breathed in by the soon to be sick individual. Proper hand washing and avoidance of placing one's fingers in one's eyes, nose and mouth are the best prophylaxis. Unfortunately, most people with a cold are contagious long before they are symptomatic. Antibiotics are prescribed for the common cold way too often. There are many home remedies for cold, of which few have been

scientifically substantiated. Nasal irrigation is very useful for the common cold<sup>9</sup>. This helps in reduction of the congestion and washing of the thick secretions. Sinusitis is best treated with antibiotics, however an early nasal irrigation may reduce the antibiotic requirement in sinusitis as it helps in clearing of bacteria. Saline nasal irrigation has been well recommended these days. Daily nasal irrigation with a hyper tonic saline solution reduces not only the severity of symptoms in sinusitis, but the occurrence of acute exacerbations and the need for antibiotic therapy<sup>10</sup>.

*Jalaneti*, is the traditional form of nasal irrigation technique practiced by yoga therapist and naturopaths in India since time immemorial. *Neti* as a purificatory technique before attainment of higher yoga status is recommended since antiquity. *Nasya* therapy of Ayurveda is a generic term for all application to nose. *Jalaneti* can also be taken as an extension to the ancient *Nasya* therapy. *Jalaneti* has special significance to nasal pathologies because of certain specific features associated with it. Most important features of *Jalaneti* are: use of hot water for nasal irrigation, use of salt in isotonic concentration in water, adoption of a special technique of irrigation enabling the streaming of water through whole nasal cavity, and post irrigation procedure. Sinusitis is a condition similar to *pinasa* of Ayurveda and has a pitta-kapha predominance. Hot water is promoted as the best home remedy for *kapha* disease and for the purpose of improving metabolism. In Ayurveda this is why medicines are recommended with warm water to improve the chances of their absorption and also a heavy meal is to be followed by hot water sips to promote its digestion. Hot water in addition to its *kapha* reducing property is also good for dissolution and dissociation of sticky *dosas* (disease causing substances *in situ*) from *srotasas* or the passages. Salt when added to warm water to make a *neti* solution serves additionally. Salt its self is having the property of *Kledana* (hydration) and *Chedana* (dissociation)<sup>11</sup>. This helps in easy detachment of sticky mucus from the sinuses once the same is properly hydrated. Isotonic saline solution is recommended for *neti*, as it does not irritate the nasal mucosa even when it is inflamed.

*Jalaneti* technique is also important to give rise the desired effects of the process. In conventional ways of *Jalaneti*, the head is tilted to one side and the saline is put to flow down from the higher end. The water

flowing down is thus supported with a gravitational thrust, which enables its easy reach to the deeper areas of sinuses and also assists in elimination of the dissociated mucus from the nasal cavity. The streaming of water, which makes an essential component of *neti*, thus serves to flush the debris out of the nasal cavity. Post irrigation measures of *Jalaneti* are equally important. Followed by *neti* is the active and forced exhalation through one nostril while the other is closed. This eliminates the remaining water and *dosas* out of the nasal cavity. Inflammation of sinus mucosa causes an increased quantity and viscosity of sinus secretions. This over secretion when combined with inflamed nasal mucosa overwhelms the nose clearing capacity and leads to pooling of secretions and secondary bacterial infections. Decongestion of mucosa to stop excess secretion, improvement in mucocilliary clearance and mucolysis to break down the sticky and adhered mucous are the corner stones of sinusitis therapy. Antibiotics are opted only if there is the evidence of secondary bacterial infection. In conventional therapy, decongestion and mucolysis alone does not help much as it does not address the requirement of elimination of dissociated mucus.

*Jalaneti* procedure besides decongesting and mucolytic also flushes the secretion out of the nasal cavity and thus ensures a rapid clearance of the sinuses. Evidences are gathering to support the view that saline irrigation may help in rapid clearance of bacteria from the nasal cavity<sup>12</sup>. This may be the other advantage associated with *Jalaneti*. Though the procedure of *Jalaneti* seems simple and any adverse outcome have not been reported so far, certain caution should be employed before its practice. These cautions are: use sterile water, boiled and cooled before use to prevent any chances of infection through contamination in water, use the warm water mildly higher than your body temperature to help in easy dissociation of mucus without causing an irritation to mucosa, use salt to make the solution isotonic as a hyper- or hypo- tonic solution can cause nasal irritation, use uniodised salt for salination of water as Iodine may result in increased nasal inflammation, adhere to the procedure advised, blowing out should be moderate to avoid any untoward effect to ear, do not share the *neti* pot with other people having similar

disease. Common cold is highly contagious and can spread through use of a common *neti* pot for more than one person.

### Conclusion

*Jalaneti*, a variant of *Nasya* therapy of Ayurveda and a common technique in practice at yoga and nature cure setups in India has a long history of its use and benefits associated with this. This is one of the most recommended therapies and has proved to be of worth in management of a number of nasal conditions including common cold, sinusitis and allergies of nose. Unfortunately, the responses obtained through the *neti* therapy are not substantially backed up with scientific reports and controlled trials. In western countries recently, an increased interest in nasal irrigation have been shown and it is recommended as an adjunct to the conventional therapy of common cold and sinusitis<sup>10</sup>. An attempt have been made to identify the benefits and possible reasoning behind the benefits in reference to a sinusitis patient treated with *Jalaneti* with substantial improvements. The essential precautions before its practice are also highlighted. The report gives enough impetus for scientific and controlled clinical trials of *Jalaneti* therapy to standardize its procedure and to make it more widely used.

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