

## Management of Turbinate Dysfunction with Shiro Virechana: A Case Report

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### Abstract

**Background:** Everyone experiences some degree of turbinate dysfunction at some point in their lifetime. Nasal congestion is the most common symptom associated with turbinate dysfunction. In Ayurveda it is explained under the heading of nasal diseases, as *Nasanaha*, which is characterized by nasal obstruction. A topical treatment explained in Ayurveda, known as *shirovirechana*, which is a minimal invasive and precise procedure for this ailment, tried to overcome from this problem.

**Method:** A case report of 26-year-old female who presented with complaints of frequent nasal congestion, sneezing, discomfort in nose, and headache since 3 years; and diagnosed as turbinate dysfunction. The patient was treated with *shirovirechana* and internal medication for 4 months. **Results:** The treatment was effective and no recurrence was noticed in the follow up.

**Conclusion:** Clinical observation has shown effectiveness of *shirovirechana* along with internal medication in the management of turbinate dysfunction.

**Keywords:** *Nasanaha*; Turbinates; *Gudaardraka*; Gingerols; *Shogaols*.

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### Introduction

The turbinates are sausage shaped structures made up of thin bone covered by spongy mucous membranes in the nasal cavities.<sup>1</sup> These structures are responsible for warming, humidifying and filtering of the inhaled air. Turbinate dysfunction occurs when these, turbinates on the inside of the nose, do not function properly. The most common dysfunction of the turbinates is caused due to turbinate hypertrophy, or enlarged turbinates. Persistent dysfunction is not uncommon and involves approximately 50% of the population.<sup>2</sup> Even though it is not fatal, but increased rapidly resulting in high rates of morbidity and has many adverse sequelae including mouth breathing, dryness of mouth, nasal speech, restlessness and also an adverse effect on quality of life. Contemporary

science offered conservative therapy as well as different methods of surgical intervention, but both the methods do not provide adequate relief and have their own limitations.

'*Shirovirechana* (instillation of medicated oils/ extracted juices/powder)<sup>3</sup> is a popular treatment modality in Ayurveda, which has been advocated in *urdwa jatrugata rogas* (diseases above the clavicle). It is the therapeutic cleansing of the head and neck region, which eliminates excess mucous and toxins from the sinus cavities and surrounding tissues. *Shirovirechanahas* the properties of mainly *kapha vilayana* (dissolving), *srotoshodana* (clearance of the channels), and *lekhana*(scraping), and so serves the purposes of dissolving the accumulated *doshas*, removal of obstruction from the channels etc. Based on clinical features, turbinate dysfunction can be considered as *Nasanaha* as per Ayurveda.

In *nasanaha* the vitiated *kapha dosha* along with *vata dosha* obstructs the inspired air, leading to nasal obstruction.<sup>4</sup>

Present case report is of a patient with enlarged turbinate with repeated nasal congestion since 3 years and was treated with *Guda ardraka shirovirechana* and *shamana oushadhi* (internal medicine) and the treatment was found to be an effective solution in the management of *nasanaha* w.s.r to turbinate dysfunction.

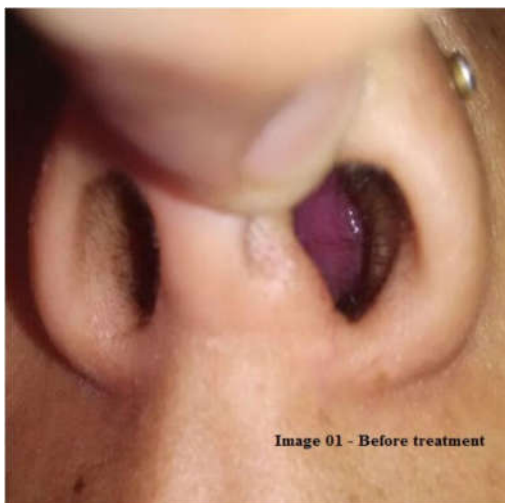
## Case Report

A 26-year-old female presented with complaints of frequent nasal congestion, sneezing, discomfort in nose, and headache since 3 years.

**Table 1:** ENT examination.

Local examination of the nose	Findings on clinical examination	
External nose	Normal	
<b>Anterior rhinoscopy</b>		
Nasal septum	Slightly deviated	
Nasal cavity	<b>Rt side</b>	<b>Lt side</b>
Nasal mucous membrane	Normal	Mild congestion
Turbinates	Normal	Inferior turbinate hypertrophied - Grade II
PNS	Frontal sinus - Tenderness +	Frontal sinus - Tenderness +++
Patency of nose (Spatula test)	Clear	Partially obstructed
Other ear and oral cavity examination findings are normal		

*On Anteriorrhinoscopy:* (Table 1) Inferior turbinate in left side of the cavity was hypertrophied with mild congestion of the nasal mucous membrane - Grade II [Image 01].



## Past history

Patient had taken many courses medical management, which includes antihistamines, decongestants, and topical corticosteroids since 3 years; but was of no use. After discontinuation of medication recurrence of symptoms were observed. Then the patient approached for Ayurvedic treatment. As the disease was not responded to medical treatment, *shirovirechana* was planned in this case. (Table 2)

**Table 2:** treatment protocol.

S.No.	Procedures	Drugs	Duration
1	Deepana and Pachana	Vyoshadi vati 1 tablet 3 times/day	3 days
2	Mukhabhyanga f/by bashpa sweda	Nirgundi taila	7 days
3	Shirovirechana (instillation of extracted medicated juices in nose)	Guda ardraka swarasa 8 drops each nostril	7 days
4	Dhumapana (medicated smoke)	Haridradi varti	7 days
5	Gandusha (gargling)	Hot water	7 days

*Dos and Don'ts:* The patient was advised to avoid exposure to air or breeze, dust, smoke; intake of cold items, junk food etc. The patient was advised to take light diet.

## Follow-up

The patient was advised to follow-up for once in a month for 4 months.

## Results

The symptoms like sneezing, discomfort in the nose and headache were reduced on 3<sup>rd</sup> and 4<sup>th</sup> day. On 5<sup>th</sup> day there was marked reduction in the size of the enlarged turbinate and nasal congestion. [Image 2] The complete reduction in the size of the turbinate was observed on the 8<sup>th</sup> day [Image 3]. Dos and don'ts were advised to patient as these are considered as common causative factors for nasal diseases. With a follow-up for a period of 4 months, the patient had not got even a single time nasal obstruction and other symptoms. Meanwhile, he was prescribed oral medication viz., *Vyoshadi vati* 1 twice/day and *Haridra khanda* + *Sitophaladi churna* + *Hareetaki* combination 5 gms twice/day with milk for 3 month.



## Discussion

Turbinates are scroll-like bony projections,<sup>5</sup> present in the nasal cavity principally responsible for regulating the flow of air by warming, humidifying and filtering air, during the inhalation process. Along with these functions, they also enhance the respiration, olfaction and immunological defense. The turbinates are lined by mucous membrane composed of ciliated, pseudostratified, glandular; columnar epithelium<sup>6</sup> and have a very rich blood supply and are governed by the parasympathetic nervous system. If these two systems gets affected in any way, then the turbines would be affected and consequently the nose. The causes of turbinate dysfunction are multifactorial. Amongst common etiologies are inflammatory, allergic and infectious causes. The pathology occurs mainly due to stimulating the parasympathetic nervous system would cause congestion by affecting turbinate mucosa. Orinfection/allergies trigger an inflammation of the nasal turbinates leading to increased drainage and nasal congestion.

*Shirovirechana*, is one of the main treatment for *Urdhwajat rugata rogas*, mainly indicated for *uttamanga shuddhi* (clearance and cleansing of the channels).<sup>7</sup> In *shirovirechana* the extracted medicated juices are instilled in the nose, which purges excess mucous and toxins from the nose, sinus cavities and surrounding tissues and helps to attain the normal functioning of nose.

### Mode of action

*Deepanaand pachana*: Disturbance of *agni* is considered as one the major factor in the pathogenesis of diseases, likewise in the *nasagata*

*rogas* also. Disturbed *Agni* lead to the formation of *Amain* turn results in improper digestive mechanism like absorption and assimilation. *Vyoshadi vati*<sup>8</sup> has the properties like *laghu, ruksha guna, ushna veerya, kaphavataghna, deepana, pachana and srotoshodana*. And actions like Decongestant, Anti-allergic, Anti-viral, Anti-bacterial, Anti-tussive, Carminative, Appetizer and Digestive booster.<sup>9</sup> Thus helps in digesting the vicious *kaphaand vatanulomana*.

*Snehana and Swedana*: *mukhabhyanga* followed by *Bashpa swedanaleads* to *dosha vilayana* (liquefaction of the accumulated *Doshas*) which can be expelled by *shirovirechana*, and removes *Jadya* (heaviness), *Sthabda* (stiffness), *Ruka* (Pain).

*Shirovirechana*: *Guda ardraka swarasa* was selected for *shirovirechana*. *Ardraka* (*Zingiber officinale*) possesses the properties like *katu rasa, ushna veerya, teekshna and rukshna guna, kaphavataghna, Bhedani, Deepani shothaghna* actions.<sup>10</sup> In *Nasanaha*, the main *Doshas* involved are *Udana Vayu* and *Kapha dosha*. *Ardraka* with its *Katu Rasa, Ushna Veerya, Teekshna and rukshna guna* is good *kapha-vataghna* and helps in reducing *Kapha Avarana* and pacifying the *vatadosha*. It also possesses the properties like *Shothahara*, which helps in relieving the inflammation of turbinates. With its *Kaphaghna* and *bhedini gunas*, *Ardraka* helps in *lekhana* (scraping out) of the excessive *Kapha* that has enveloped (*Avarana*) *Udana Vayu* and thus help in bringing the nose back to its normal function. *Guda*<sup>11</sup> is having *madhura vipaka, balya and pittavataghna* properties helps to pacify the vitiated *vata pitta doshas* and strengthens the normal functioning of *vata dosha*.

The chemical compositions of ginger are mainly phenolic compounds, such as gingerols and shogaols. Because of these compounds, ginger has

multiple biological activities, including antioxidant, anti-inflammatory, antimicrobial, anticancer, neuroprotective, cardiovascular protective, respiratory protective, antiobesity, antidiabetic, anti-nausea, and antiemetic activities.<sup>12</sup> Gingerol, shogaol, and other structurally-related substances in ginger inhibit prostaglandin and leukotriene biosynthesis through suppression of prostaglandin synthetase<sup>13</sup> and does vasoconstriction. This vasoconstriction helps in relieving the nasal congestion and thus helps in relieving nasal obstruction.

After *shirovirechana Dhumapana* with *haridradi varti*<sup>14</sup> was done to clear the srotas of *urdhwajatrugata bhaga* and expel the remaining *kapha dosha* and does the *vatanulomana*. *Haridra* is having *Katu-tikta rasa*, *Ushna virya*, *Laghu-tikshna-ruksha guna* and *Vata-kapha shamaka* and has anti-inflammatory, anti-allergic, analgesic, bronchodilator and antioxidant activity. Thus its *dhumapana* helps in removal of residual *kapha* and clearance of nasal cavity.

*Gandusha*: Gargling with hot water helps to clear the mucus from the throat and oral cavity, which may accumulated in the oral cavity after *Dhumapana*.

*Internal medicine*: The drugs used in the compound formulation are *kaphavata shamaka*, *agnideepaka*, *Balya*, anti-tussive, decongestant, immunity pacifying, and many other properties. *Haritaki* acts as *Rasayana* and *vatanulomana*.<sup>15</sup> Thus, the above mentioned drugs and the procedures have the properties to check the pathology as per Ayurveda in *Nasanaha w.s r* to turbinate dysfunction.

## Conclusion

*Shiro virechana* is considered as one of the main line of treatment in *urdhwajatrugata rogas* as it acts locally as well as systemically. And also this procedure it is very convenient, easy to adopt, cost-effective and having curative results. This effectiveness of *shirovirechana* along with *shamanoushadis* can be attributed to the *kaphavataghna*, *srotoshodhana*, *shothagnaandrasayana* properties of *guda ardraka* and compound formulation.

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