

SIGNIFICANCE OF NASA & NASYA – A CRITICAL REVIEW**Dr. Mahammed Khasim*¹ and Dr. Vinod Jadhav²**¹PG Scholar, Department of PG Studies in Shalaky Tantra, SVMAMC, ILKAL.²Professor, Guide & HOD Department of PG Studies in Shalaky Tantra, SVMAMC, ILKAL.Article Received on
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ABSTRACT

As the subject of Shalaky Tantra is scattered all over the texts of Ayurveda, sometime it is very difficult to concise all the matter related to concerned topic, same is true for Nasa and Nasya. Nasa is a sensory organ as well as an important route of drug administration called as Shirsodvara (Gateway to head). This paper deals with importance of Nasa as well as Nasya along with historical background, its anatomical aspect, physiological aspect, diseases related to Nasa with their generalized treatment, Nasya and its scientific explanation. Nasa is developed during the third month of Garbhavastha (Pregnancy). Two nostrils are among the main nine external orifices. Acharya Sushruta has mentioned the disease related to nose are 31 in number.

Nasya karma is the best treatment for the Shirogata Roga and specially Nasagata Roga according to all scholars of Ayurveda and ancient literature. As stated by Sushruta (Su. Chi. 40/21,29) medicines or medicated oils administered through the nose is known as Nasya. The drug thus administered reaches Shringataka (a Sira Marma by Nasa Shrotra) and spreads in the murdha (brain) reaching the Marma of Netra (eye), Shrotra (ear), Kantha (throat), Shiramukha (opening of the vessels, etc.). It then by virtue of its potency scratches the morbid Dosha in Supraclavicular region and expels them from Uttamanga (As.San.29/2). When provocation of Dosha takes place in Shira due to irritating effect of administered drug resulting in increase of the blood circulation to the brain, extra accumulated morbid Dosha are expelled out from small blood vessels. Ultimately these morbid Dosha are thrown out as nasal discharge, tear & salivation.

KEYWORDS: Anupashaya, Ghranindriya, Nasa, Nasya, Upashaya.

INTRODUCTION

Shalakya Tantra, one among the eight branches of Ayurveda was considered with due importance by the ancient scholars since it deals with the parts of vital importance as well as sensory organs.^[1] In literature of Ayurveda, there is no detailed description of Nasa Sharira (Anatomy of Nose) at one place like the anatomical description of other organs, whereas Nasa is included among the five Gyanindriya. Acharya Sushruta has considered *Nasa* as *Pratyanga*^[2] i.e. secondary organ of the body. Similarly while enumerating the external orifices of the body, he has also considered two nostrils among the main nine external orifices.^[3] Nasya karma is the best treatment for the Shirogata Roga and specially Nasagata Roga according to all scholars of Ayurveda and ancient literature. Nasya therapy is also indicated in the diseases of Mukha, Karna and Netra Roga. Urdhvanga chikitsa is one of the important branch of Ashtanga Ayurveda and Nasya karma is the main therapeutic measure of Urdhvajatrugata Roga (Supraclavicular diseases). All organs, which are above the clavicle, are considered as Urdhvanga e.g. Nasa, Mukha, Netra and Shirah. Without Nasya karma it is not possible to eliminate the vitiated Dosha, which are situated in the Shira or Nasa etc. In Ayurveda, the word Nasya has been taken specifically to mention the root of administration of the drugs. Acharya Sushruta has given the above description meaning “the medicaments, which administered through nose is called as Nasya.”^[4] As stated by Sushruta medicines or medicated oils administered through the nose is known as Nasya.

DEFINITION & SYNONYMS

Nose or *Nasa* is described as the seat of *Ghranindriya* i.e. sense organ for smell (*Shabdastoma Mahanidhi*). Amarkosha mentioned the synonyms of *Nasa* i.e. *Nasa*, *Nasika*, *Ghranam*, *Gandhavaha*, *Ghrana*.

EMBRYOLOGY

Acharya Charaka while explaining the embryology of organs in a pregnant woman states that *Sarva Indriyas* (Sense organ or special senses) are developed during the third month of *Garbhavastha* (Pregnancy).^[5] Acharya Sushruta has not clearly mentioned the embryological formation of Nasa.

ANATOMY

In literature of Ayurveda, there is no detailed description of Nasa Sharira (Anatomy of Nose) at one place like the anatomical description of other organs, whereas Nasa is included among the five Gyanindriya.

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Acharya Charaka told that only one bone forms the bony structure of *Nasa* while Acharya Sushruta has counted 3 *Asthis* (bones) in *Nasa*. In *Nasa*, *Asthis* are of *Tarunasthi* (Cartilage) type. Acharya Charaka has given only short description of *Nasa Sharira*. He has mentioned only one nasal bone. Further he has also described *Nasa* as a sense organ.^[6]

According to Acharya Sushruta, in *Nasa* only 1 *Sandhi* (joint) present which is *Sthira* (Immobile) in type.^[7] Nose or *Nasais* comprised of,

Bones - 3

Peshi (Muscles) - 2

Dhamani (Nerve) - 2

Siras (Arteries and Veins)- 24

Marma (Vital Point) - 2

Acharya Sushruta has mentioned the length of Nose or *Nasika* as 2-1/3 *Angulas*. Acharya *Dalhana* the commentator of *Sushruta Samhita* clarifying about the circumference of each nostril as *Tribhag* *Angulas* i.e. 1-1/3 (inches) *Angulas* in circumference excluding *Tarunasthi* (Cartilage).^[8]

Acharya Sushruta told that 2 *Dhamani* are present in the nose, which is responsible for *Gandhajnana* (Sense of Smell). This may be the Olfactory nerve pair, which is the sensory Cranial nerves responsible for Olfaction. While explaining the 24 *Siras* classified them into four groups of six each as *Vatavaha*, *Pittavaha*, *Kaphavaha* and *Raktavaha*.^[9]

CHARACTERISTICS OF IDEAL NOSE

Acharya Charaka has described the features of ideal nose as it should be straight, with big nostrils, having good bridge and the tip slightly bent down.^[10]

Physiology of Nose according to Ayurveda (INDRIYA PANCH PANCHKAM)

Indriya: *Ghranindriya* **Indriya Dravya:** *Prithvi* **Indriya Adhithana:** *Nasa* **Indriya Artha:** *Gandha*. **Indriya Buddhi:** *Ghrana Buddhi* Ultimately *Atma* gets smell perception and *Mana* is the controller of whole this process of smell perception.^[11]

MARMAS

Acharya *Vagbhata* has stated that the two *Marma* are situated in *Nasika*.^[12]

Matrika: These are *Sira Marma* associated with *Nasa*.

Phana: These are the *Marma* which perform the olfactory function.

Shringataka: These are *Sadhyapranahara Marma* associated with *Nasa*, which also used to explain various diseases like *Kshavathu* etc.

HISTORICAL REVIEW

Sushruta Samhita

Acharya *Sushruta* has mentioned the disease related to nose are 31 in number.^[13] These are as follows.

1. *Apinasa* (Atrophic Rhinitis)
2. *Putinasya* (Fetid Nasal Discharge)
3. *Nasapaka* (Nasal Suppuration)
4. *Raktapitta* (Epistaxis)
5. *Puyashonita* (Purulent discharge)
6. *Kshavadhu* (Vasomotor Rhinorrhea)
7. *Bhranshthu* (Thick mucoid nasal discharge)
8. *Dipta* (Acute burning nasal irritation)
9. *Nasnaha* (Unilateral nasal block)
10. *Parisrava* (Rhinorrhoea)
11. *Nasashosha* (Rhinitis Sicca)
12. -15. *Nasa arsha* (Nasal Polyp)
- 16-19. *Nasa Shopha* (Inflammatory conditions of the nose)
- 20 - 26. *Nasa Arbuda* (Nasal Tumors)
- 27 – 31. *Pratishayaya* (Coryza)

Upashaya (Pacifying factors)

- Oral intake of *Ghrita*, (warm) containing sour ingredients
- Various kinds of *Swedana* & *Vamana*.
- *Nasya* with the squeezed juices at appropriate time
- *Dhumapana* & *Gandusha* should be done depending upon the types of *Dosha* involved.

- Snigdha, Ushna, Lavana & Amla Padartha Sevana.

Anupashaya (Aggravating)^[14]

- Excessive intake of Guru, Madhura, Sheeta substance
- Excessive intake of cold water
- Dhula, Rajaha Sevana
- Bhojanotara Atidrava Sevana
- Vishamashana

Treatment of diseases of Nose

Nasya karma is the best treatment for the Shirogata Roga and specially Nasagata Roga according to all scholars of Ayurveda and ancient literature. Nasya therapy is also indicated in the diseases of Mukha, Karna and Netra Roga. Urdhvangachikitsa is one of the important branch of Ashtanga Ayurveda and Nasya karma is the main therapeutic measure of Urdhvajatrugata Roga (Supraclavicular diseases). All organs, which are above the clavicle, are considered as Urdhvanga e.g. Nasa, Mukha, Netra and Shirah. Without Nasya karma it is not possible to eliminate the vitiated Dosha, which are situated in the Shira or Nasa etc.

DEFINITION OF NASYA

In Ayurveda, the word Nasya has been taken specifically to mention the root of administration of the drugs. Acharya Sushruta has given the above description meaning “the medicaments, which administered through nose is called as Nasya.” As stated by Sushruta medicines or medicated oils administered through the nose is known as Nasya.

Arun Dutt & Bhava Prakash

According to them all drugs & measures that are, administered through the nasal passage are called Nasya (Bha. Pra. Purvakhand 5/189). Sharangdhara & Vagbhata are of same view.^[15]

SYNONYMS

- Shirovirechana
- Shirovireka
- Murdhavirechana
- Navana
- Nastahkarma

A reference regarding the use of “Sanjivani” for Nasya karma is available in Valmiki

Ramayana when Lakshmana became unconscious, drug was blew by Sushena to make him conscious.

MODE OF ACTION OF NASYAKARMA

The clear description regarding the mode of action of the Nasya karma is not available in Ayurveda classics. According to Charaka Nasa is the gate way of Shira. The drug administered through nose as Nasya reaches the brain & eliminates only the morbid Dosha responsible for producing the disease.

In Ashtanga Sangraha

Nasa is described as the gateway of Shirah. Hence the drug is administered through nostrils. The drug thus administered reaches Shringataka (a Sira Marma by Nasa srotra) and spreads in the murdha (brain) reaching the Marma of Netra (eye), Shrotra (ear), Kantha (throat), Shiramukha (opening of the vessels, etc.). It then by virtue of its potency scratches the morbid Dosha in Supraclavicular region and expels them from Uttamanga (As.San.29/2).

Sushruta has clarified Shringataka Marma as a Sira Marma formed by the union of Siras (blood vessels) supplying to nose, ear, eye & tongue. He further points out that injury to this Marma will be immediately fatal (S.Sha.6/27).

Under the complications of Nasya karma Sushruta noted that the excessive elimination might cause Mastulunga (cerebrospinal fluid) to flow out of the nose¹⁶. In Sushruta, Ashtanga Hridya, Bhavaprakasha, etc detailed descriptions are not found about the mode of action of Nasya karma. According to all prominent Acharya Nasa is said to be the gateway of Shira. It does not mean that any channel connects directly to the brain but they might be connected through blood vessels or through nervous system (olfactory nerve, etc.)

It is an experimentally proved fact that – Wherever any type of irritation takes place in any part of body. The local blood circulation is always increased. This is the result of natural protective function of the body. When provocation of Dosha takes place in Shira due to irritating effect of administered drug resulting in increase of the blood circulation to the brain. So extra accumulated morbid Dosha are expelled out from small blood vessels. Ultimately these morbid Dosha are thrown out as nasal discharge, tear & salivation.

The modern point of view

There are no such direct Pharmacodynamic considerations between nose & no such cranial

organs. More over blood brain barrier is a strict security system that human brain has. The nose is used as a route of administration for inhalation of anesthetic materials. In case of Para nasal sinusitis certain agents used as decongestants. Since quite a time anterior pituitary hormones as nasal spray is in practice with modern medical system. Vasopressin or Antidiuretic hormone is already in the market in the form of nasal therapy. On the basis of fractional stages of Nasya karma procedures, we can draw certain rational issues that are as follows.

Effect on Neuro – Vascular Junction

- The lowering of the head
- Elevation of lower extremities
- Fomentation of face

These procedures seem to have an impact on blood circulation to the head. As the efferent vasodilator nerves are spread out on the superficial surface of the face, which after stimulation at surface of the face, by fomentation may increase blood flow to the brain, i.e. momentary hyperemia.

On this ground, it can be stated that the *modus operandi* of Nasya Karma has a definite impact on central neurovascular system & likely lower the blood brain barrier to enable certain drug absorption in the brain tissues.

Effect on Neuro-Endocrine level

- The peripheral olfactory nerves are chemoreceptor in nature.
- These olfactory nerves differ from other cranial nerves, except optic nerve, in its nature of phylogenetically closely related to brain.
- Rather it should be considered as the fib retracts of brain itself (Brobeck 1980).
- There are adjacent nerves called terminal nerves, which run along the olfactory nerves, & their functions are unknown (Hamilton 1966).
- However, it is known that these nerves are connected with limbic system of the brain including Hypothalamus.
- This limbic system & hypothalamus are having control over endocrine secretions.
- Moreover, hypothalamus is considered to be responsible for integrating the functions of the endocrine system & the nervous system.
- It is known to have direct nervous connections with the posterior lobe of pituitary.

- In addition hypothalamus is indirectly having connections with anterior lobe of pituitary, through portal vessels, which supplies blood to the gland, having previously ramified in the corpora mammillaria of the hypothalamus.
- Electrical stimulation of this part of the hypothalamus in animals is capable of inducing secretion in the anterior pituitary.
- It is understood that just like primitive mammals man also responds to the languages of smell in the environments (B.S.M. 1980).
- Abraham & colleagues (1979) in their experimental studies have noticed that a mere exposure to the smell of the jasmine flowers recues the activity of mammary gland.
- If the fragrance could have the effect, it may be acting through impasse traveling via the olfactory pathway influencing hypothalamus, which in turn, causes the inhibition effect through the pituitary (Abraham et al 1979).
- Olfaction of certain chemical pheromones is also observed to have an impact on menstrual cycle (Russek 1977). At this juncture we can grasp the humor behind the recommendation of Nasya by Ayurveda scholars in Pumsavana for changing the sex of the fetus. These drugs used for Pumsavana may be acting through this olfacto hypothalamopituitary pathway.

Effect of Neuro-Psychological levels

- The adjacent nerves called terminal nerves which run along the olfactory are connected with limbic system of brain including hypothalamus (Hamilton 1966).
- This limbic system is also concerned with behavioral aspect of human being, besides control over endocrine secretions.
- Thus, certain drugs administered through nose may have an impact on immediate psychological functions by acting on limbic system through olfactory nerves such a phenomena has been revealed in the work of Cowley et al (1975).
- The work has been carried out on the effect of exposing people for a short period of time, to known pheromone.
- The investigation showed subjects reacting differently, in assessing men & women, in comparison with the control state.
- The people can also be influenced in their judgment by exposure to androstenol & a mixture of short chain fatty acids. These things certainly support the recommendation of Nasya made by Ayurveda scholars for mental disorders like Apasmara & Unmada.

Effect on drugs Absorption &Transportation

- Keeping the head in lowered position & retention of medicine in nasopharynx help in providing sufficient time for local drug absorption. Any liquid soluble substance has greater chance for passive absorption directly through the cell of lining membrane.
- On the other hand, massage & local fomentation also enhances the drug absorption (Fingl 198).
- The later course of drug transversion can occur in two ways –
 1. By systemic circulation
 2. Direct pooling into the intra cranial region.

Vascular path

- Vascular path transportation is possible through the pooling of nasal venial blood to the facial vein, which naturally occurs.
- Just at the opposite entrance, the inferior ophthalmic veins also pool into the facial vein.
- Interestingly, both facial & ophthalmic veins have no venial valves in between.
- So that, blood may drain on either side, that is to say the blood from facial vein can enter cavernous venous sinus of the brain in reverse direction.
- Thus, such a pooling of blood from nasal veins to venous sinuses of the brain is more likely in the head lowered position due to gravity.
- On these lines, the absorption of drug material into meninges & related parts of intracranial organs, is a worth considering point.
- More over, the modern scholars have noted that the infective thrombosis of the facial vein may lead to infection of the meninges easily through this path (Williams *et al.* 1971).
- Pooling of blood from paranasal sinuses also possible in the same manner.
- Vagbhata notation of Shringataka srota (anterior cranial fossa) seems to relate with the above explanation.

Lymphatic path

- Drug transportation by lymphatic path, can reach direct into the C.S.F.
- It is known that arachnoids matter sleeve is extended to the sub mucosal area of the nose along with olfactory nerve.
- Experiments have shown that the dye injected to arachnoids matter has caused coloration of nasal mucosa within seconds & vice versa also (Hamilton 1971).
- Preliminary studies reported from

A.I.M.S. laboratories, clearly showed that steroids enter the C.S.F. rapidly following their administration as a nasal spray.

- Surprisingly there levels in the C.S.F. was found to be much high as compared with systemic injections (Kumar et al 1979).

Here it may be worthy to recall Sushruta caution that the excessive administration of Virechana Nasya (eliminative errhine) may cause oozing of Mastulunga (C.S.F.) into the nose. On this basis, we may say that ancient scholars of Ayurveda were aware of the lymphatic path in direct absorption into the brain from nose.

Important of Post Nasya Massage

The texts have recommended light massage on the frontal, temporal, maxillary, mastoid & on Manya region. A comfortable massage on the above regions may help to subside the irritation of somatic construction due to heat stimulation. It may also help in removing the slush created in these regions.

However, interesting here is regarding Manya which is a Marma existing in neck on either side of the trachea (Su.Sh.6/27) which likely correspond to the carotid sinuses of the neck. Pressure applied on the baroreceptors may bring the deranged cerebral arterial pressure to normalcy (Hejmadi S. 1985). Because these receptors lying on bed of bifurcation of common carotid artery have a buffering action on the cerebral arterial pressure (Best & Taylor 1958).

On the basis of the foregoing observations we can state that the procedures, postures & conducts explained for Nasya karma are of vital importance in drug absorption & transportation. The facts discussed here is also convincing us about the definite effect of Nasya karma in the disorders of central Nervous system, mental & some endocrinal disturbances also.

Plant that expels elevated bilirubin through nose is the wonder plant called Koshataki. The method of application of drug is Nasya. Its tender fruits crushed in milk and conduct a Nasya procedure with in minute a yellowish liquid will begin to come from the nose for the whole day. This yellow liquid is nothing but raised serumbilirubin.

CONCLUSION

The detailed anatomy of Nasa is not available in classics like anatomy of other organs. On detailed analysis of classics we can see that an elaborate anatomical description of Nasa is

explained in a scattered manner. So from the above discussion that nose is a vital part of the body not only anatomically but also it has a great clinical significance ordinarily Nasya is used as a treatment modality for various diseases related to nose and paranasal structure but Nasya is a treatment for diseases related to all systems of the body because Nasa hi Shirshdvaram and Shira is the chief controlling organ of all the body systems. The purpose of above article is to popularize Nasya as a chief therapy for various disorders ranging from hepatitis to hormonal imbalance due to Pituitary dysfunction. Various herbs can be used in different forms like powder, oil, decoction or fumigation.

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