

A Comprehensive Review of the Role of Nasya Karma in Pakshaghata

*Pranav Singh Tomar, **Kalpana Raje, *** Syamlal S

Abstract

Pakshaghata comprises two terms: Paksha (representing half of the body) and Aghat (signifying loss of function). Ayurvedic literature abounds with textual references elucidating Pakshaghata extensively. Regarded as a condition primarily influenced by Vata Dosha, it typically manifests with unilateral loss of function or weakness, with variable facial involvement. The prognosis is multifaceted, considering age, strength, and Dosha involvement. In contemporary science, cerebral vascular accidents are chiefly responsible for functional impairment, bearing a significant resemblance to Pakshaghata. While modern medicine often addresses symptoms superficially, Ayurveda seeks to treat the underlying cause alongside symptoms. Ayurvedic disease management involves two main approaches: Samshodhana and Samshamana. Panchakarma is a Shodhana Pradhana therapy, encompassing five major procedures for body purification. Additionally, allied processes contribute to symptomatic relief by targeting affected areas directly. Vata Vyadhi is prominent among the Ashta Maha Gata, with Pakshaghata esteemed among Vataja disorders. Notably, Pakshaghata's clinical manifestations bear resemblance to modern hemiplegia, often stemming from cerebral ischemia due to vascular pathology. Esteemed Ayurvedic scholars like Acharya Bhela consider Pakshaghata as one of the Asthi Majjagata Roga. Acharya Sushruta further elucidates the concept of Mastulunga Majja as synonymous with Majjadhara Kala. Nasya Karma emerges as a valuable therapeutic modality for Vatavyadhi, offering clinical efficacy in managing symptoms akin to Pakshaghata. This article endeavors to scrutinize the clinical efficacy of Nasya Karma in Pakshaghata management, drawing insights from prior research, classical Ayurvedic texts, and reputable publications.

Keywords

Pakshaghata, Hemiplegia, Vatavyadhi, Nanatmaja Vata vikaras, nasya.

Introduction

Ayurveda often hailed as "the science of life," is fundamentally dedicated to promoting human health. It serves as a beacon for societal betterment by fostering environments that are free from ailments and conducive to wellness. Health, as per Ayurvedic philosophy, transcends the mere absence of illness; it encompasses the holistic well-being of individuals across the realms of mind, body, and spirit. In the contemporary era marked by rapid industrialization and bustling lifestyles, a plethora of lifestyle disorders has emerged. These maladies stem from factors such as excessive stress, inadequate sleep, poor dietary habits, and sedentary routines devoid of physical activity. Movement, intrinsic to all forms of life, holds profound significance in Ayurvedic teachings, with the Sharirika and Mansika Doshas orchestrating the harmonious functioning of the body and mind. Among these, Vata assumes a pivotal role as the regulator of other Doshas, rendering ailments associated with it of paramount importance.

Nasya karma emerges as a cornerstone therapeutic intervention, particularly for addressing upper respiratory tract disorders, as part of the comprehensive panchakarma regimen. This meticulous process involves the administration of medicated oils or liquids through the nostrils, capitalizing on the nose's direct connection to the cranial region. While intranasal drug delivery has been an age-old tradition in Ayurveda, its validation through modern scientific inquiry is relatively recent.

* Second Year PG Scholar, ** Prof. & HOD, ***Lecturer

Dept of Rachana Sharir, Institute of Teaching and Research in Ayurveda (INI), Jamnagar, Gujarat, India. email: drpranavtomar@gmail.com

Ayurveda's expansive repertoire of drug delivery methods encompasses the utilization of all nine bodily orifices, including the intricate sukshmarandhra. However, the unparalleled efficacy of nasya underscores its significance, offering unparalleled purification of bodily channels. Leveraging the nasal route for drug administration not only effectively treats local nasal afflictions but also extends its therapeutic reach to supraclavicular diseases. This non-invasive modality of trans-mucosal nasal drug delivery capitalizes on the nasal cavity's extensive surface area and robust vascularity while bypassing hepatic first-pass metabolism and gastrointestinal degradation. This trans mucosal nasal drug delivery is a non-invasive drug administration route.¹ Due to its large surface area, high vascularity, avoidance of hepatic first-pass metabolism, and gut wall metabolism, it has occupied a very important place in the field of drug delivery technology.

Morbidity of Vata Dosha either due to Dhatukshaya or Margavarna² will lead to Chesta Nivritti in one half of the body and the illness is prevalently known by the name "Pakshaghata". The description of Pakshaghata can be interpreted as Hemiplegia.

The commonest cause of Hemiplegia is a Cerebrovascular Accident or stroke. Stroke is the third most common cause of death in developed nations, where nearly 4.5 million persons die from stroke each year. Stroke affects 33 million individuals worldwide every year and two-thirds of stroke cases occur in developing countries. The burden of stroke has been increasing worldwide, especially in developing countries. For India, community surveys have shown a crude prevalence rate of Hemiplegia in the range of 200 per 100,000 persons, nearly 1.5% of all urban hospital admissions, 4.5% of all medical and around 20% of neurological cases³.

Spanning from the pre-Vedic era to modern medicine, there exists a wealth of scientific references concerning Pakshaghata or Stroke, detailing its etiology, manifestation, pathology, prognosis, and treatment. The primary goal of treating any ailment is not merely to prolong life but to enhance its quality, ensuring that each year is imbued with vitality and wellness.

Acharya Sushruta describes Lakshana of Pakshaghata and Lakshana of Ardita as separate entities,⁴ whereas according to Acharya Charaka⁵, Lakshanas of Pakshaghata and Ardita can coexist together. According to Ayurveda, the Samprapti of Pakshaghata⁶ can be analyzed in two ways - either by Dhatu Kshayajanya or via Margavaranajanya. Ayurveda has broadly classified treatment into three parts, i.e., Nidana Parivarjana, Shodhana, and Shamana Chikitsa. Many therapeutic principles have been recommended in Ayurvedic classics for the treatment of Pakshaghata. In Ayurvedic classics, Vata Dosha, Snehana, Swedana, and Mrudusamsodhana are selective therapies. According to Acharya Charaka⁷, the specific treatment of Pakshaghata is "Swedanam Sneha Samyuktam Pakshaghate Virechanam". Ashtanga Sangraha and Hridaya both followed Charaka's view but only a small difference is that they considered Snehana Karma instead of Swedana Karma⁸. The line of treatment of Pakshaghata is described as Virechana, but Virechana cannot be applied in the ShuddhaVataja condition. Describing the indication of Virechana in Vata Vyadhi, in Charaka Samhita⁹,

it has been mentioned that Virechana is indicated in conditions of Vata where the Vata is obstructed by Pitta, Rakta, Kapha, and Meda. Snehana is the main line of treatment for the ShuddhaVataja disorders. Therefore, it is necessary to approach Pakshaghata resulting from CVA from a different angle.

In the pathogenesis of Pakshaghata, Mastulunga Majja is affected, which is nothing but the Majja Dhara Kala¹⁰. In the classics, it is mentioned that "Nasa Hi Shirso Dwaram"¹¹.

Acharya Sushruta while explaining about the Chikitsa of Pakshaghata¹² has quoted that it should be treated as Aakshhepaka, where Teekshna Avapeedana nasya has been mentioned and regarding the Teekshna Avapeedana nasya dravyas, references available in Trimarmeya Adhyaya¹³ of Charaka.

Aims and Objectives

To provide a valuable, informative, and critical summary of application of nasya in the management of Pakshaghata.

Materials and Methods

Literature Sourcing and Ayurvedic Text Analysis

The materials and methods adopted for this article have been collected from various scientific sources, including previous research conducted on the topic, Ayurveda classical texts, and published materials from reputed sources.

Involvement of Majja

The adhishtana of pakshaghata is masthishka or mastulunga. Mastulunga is considered as the "avileena ghritakara mastaka majja"¹⁴. In majjadushti, "kaaleshuddhi"¹⁵ (timely purification) is advised as the treatment. So, one can think about tikshana nasya here.

Concept of Avarana – Anubandha

One of the main pathologies behind pakshaghata is margavarana to Vata. It is correlated with ischemic stroke, which accounts for 87% of all stroke cases. Pakshaghata may present with symptoms of the avaraka dosha along with vataja lakshanas. Visheshalakshanas of pakshaghata are also

explained based on the association with pitta and kapha doshas. Mridushodhana is indicated for the removal of avarana to Vata¹⁶. Again, tikshana nasya has the potency to break this anubandha. Tikshana nasya has anulomana effect and thus it can remove the obstructions to pranavata to bring it into the natural pathway.

Probable Mode of Action of Nasya

The modern anatomical and physiological aspect of the nose is as follows:¹⁷ The nose is connected through the vascular system, nerve plexus of the olfactory nerve, and ophthalmic and maxillary branches of trigeminal nerves to the brain. To understand the drug absorption of the nasal route, it is compulsory to understand the anatomy and physiology of the nasal tract and how it relates to the characteristics of the delivery system used.

The nasal route runs from the nasal vestibule to the nasopharynx, which has a depth of approximately 12-15 cm. The total surface area of the nasal cavity is about 180 cm², and it has a total volume of about 16-19 ml. Mucous lines this nasal route, which protects the mucosa from the inspired air.

The nasal route is divided into three functional zones: vestibular region, respiratory region, and olfactory region. The vestibular region is found at the opening of the nasal passage, which is responsible for filtering the air coming into the nasal cavity. It has the least importance among the three regions with regard to drug absorption. The respiratory region is mainly responsible for systemic drug absorption because it has the highest degree of vascularity. The olfactory region plays a very important role in the transportation of drugs to the brain and CSF. The surface area of the olfactory region is about 10 cm².

Mode of Action – Ayurveda

In Ayurveda, the human body is compared to an upside-down tree where the head is the main part of the body, and other organs are its branches. So, the head controls every system, and application of medicine in the form of nasya can cure many diseases of different parts of the body. Nasya is the best method to eliminate and alleviate the vitiated doshas of urdhwanga, and it is the unique procedure for uthamānga suddhi¹⁸. Nasya ensures better absorption of the administered medicines.

According to Charaka, the nose is the portal (gateway) of Siras. The drug administered through the nose as nasya reaches the brain and eliminates only the morbid dosha responsible for producing the disease. In Astanga Samgraha¹⁹, it is explained that the nose being the entry to Siras (head), the drug administered through the nostril reaches sringataka - a sira marma by nasa srotas and spreads in the murdha (brain), reaches a junctional place of netra (eye), srotra (ears), kantha (throat), siramukhas (opening of the vessels), etc., and removes or detaches the morbid doshas present above the supraclavicular region and expels them from the uttamanga.

As per Charaka²⁰, the recipe administered by nasya therapy enters into the head and draws out exclusively the morbid matter since the pith (isika) is removed after removing the fibrous coating that is attached by munja (a type of grass). Susruta explained that

sringataka marma is a sira marma present at the confluence of the Siras, supplying nourishment to the nose, ears, eyes, and tongue.

Neurological Pathway and Drug Absorption²¹

The neurological pathway is concerned with olfactory stimuli. The olfactory nerve differs from other cranial nerves in its close relation with the brain. The peripheral olfactory nerves are chemoreceptors in nature. The olfactory nerves are connected with the higher centers of the brain, i.e., the limbic system, consisting mainly of the amygdaloid complex, hypothalamus, epitheliums, anterior thalamic nuclei, parts of basal ganglia, etc. The drugs administered through the nose stimulate the higher centers of the brain, which show action on the regulation of endocrine and nervous system functions.

The hypothalamus regulates various functions, including contraction of smooth and cardiac muscle secretions of many glands, regulation of hormone synthesis, emotional and behavioral patterns, body temperature, circadian rhythm, and states of consciousness. The epitheliums consisting of the pineal gland and habenular nuclei play a role in olfaction and emotional responses to odors.

Lipid-soluble substances have a greater affinity for passive absorption through the cell walls of the nasal mucosa. Non-polar hydrophobic molecules diffuse through the lipid bilayer of the plasma membrane, into and out of cells. Such molecules include oxygen, carbon dioxide, and nitrogen gases; fatty acids, steroids, and fat-soluble vitamins.

Vascular Path and Modern View²²

Vascular path transportation is possible through the pooling of nasal venous blood into the facial vein. The facial vein has no valves and communicates freely with the intracranial circulation. Such a pooling of blood from nasal veins to venous sinuses of the brain is more likely to occur in a head-lowering position due to gravity, and the absorption of drugs into the meninges and related intracranial organs is a point of consideration.

Nasal drug administration has been used as an alternative route for the systemic availability of drugs restricted to intravenous administration. This is due to the large

surface area, porous endothelial membrane, high total blood flow, avoidance of first-pass metabolism, and ready accessibility. Drug transport across the nasal epithelium occurs by one or more mechanisms, including transcellular passive diffusion, paracellular passive diffusion, carrier-mediated absorption and secretion, and absorption through transcytosis.

Discussion

Pakshaghata is a Vataj Nanatmaja Vyadhi considered as Mahavatavyadhi. It can be correlated with Hemiplegia, which results from a cerebrovascular accident, or stroke. According to Charaka Siddhi Sthana²³, the head controls every system, and application of medicine in the form of nasya can cure many diseases of different parts of the body.

Pakshaghata has different Avastha depending on Dosha involvement and Lakshanas. TandraAvstha is one among them, seen in the initial stage of the disease. Tandra is defined in Sushruta Samhita as non-perception of sense objects, heaviness, yawning, mental exhaustion, and behavior as of sleepy are the features of Tandra²⁴. The Chikitsa for Tandra Avastha²⁵ are therapies that do Shamana and Shodhana of Kapha, Vyayama, Rakthamokshana, and Ahara which have Katu and Tikta taste.

If we try to apply the concepts explained under Tandra and Understanding of Pakshaghata or stroke results due to the rupture of weakening blood vessels or regular intake of alcohol or smoking, then tikshna nasya can be the right choice in the management of Pakshaghata.

Pradhamana nasya is beneficial in the management of pakshaghata due to its ability to remove Avarana in the Sanjnavahastrotras. According to Acharya Charaka²⁶, whenever Margavarana pathology by Meda and Kapha leading to Vataakupitha is seen, then Kshapana in the form of Vyayama, Shodhana, Arista, Gomootra, Virechana, Takra, Bhaya is the line of treatment. Pradhamana Nasya/ChoornaNasya²⁷ is mentioned as Sarvasharira

Srotroshodhaka.

The method of administration of Pradhamana Nasya involves Poorva karma, such as Sthanika Mukha Abyanga with Moorchita taila and Sthanika Nadi Sweda for Mukhapradesha. The preoperative measures adopted in nasya therapy enhance blood circulation in the head and facilitate the absorption of the administered medicines.

The mode of action of Pradhamana Nasya in Pakshaghata involves the removal of Avarana in the Sanjnavahastrotras, which helps in regaining Sanjna. It is achieved through Srotroshodhana by clearing the Avarana, which helps in the proper function of Vata Dosha.

Conclusion

Ayurveda employs a distinctive approach in treating Pakshaghata at various stages, following an understanding of Tara-tama bhava of Dosha, Doshagati, Vyadhiavastha, Rogabala, Rogibalakala, Sadhya-Asadhyata, and more. Pradhamana Nasya stands out among these methods. It is a form of Tikshna Nasya, also referred to as SanjnaPrabodhakanasya, highly beneficial during the early stages of Pakshaghata. This therapy aids in alleviating Tandraavasta by eliminating Avarana in the Sanjnavahastrotras. Moreover, it plays a crucial role in averting disease complications when administered promptly after onset, contributing to a favorable prognosis.

References:

1. Vipin Kumar. A Conceptual Study on Mode of Action of Nasya. International Journal of Ayurveda and Pharma Research. 2017;5(7):100-102.
2. Agnivesha, Charaka Samhita, Edited by Vaidya Harish ChanderKoshwaah. Chakrapaani Dutta Ayurveda Deepika Hindi Commentary Ayushi. Reprint Edition Volume 2, Choukhamba Orientalia, Varanasi, 2012. Page No 741.
3. API Textbook of Medicine, Edited by YashpalMunjil. Ninth Edition, Volume 2. The Association of Physicians of India, Mumbai, 2012. Page No.1401.
4. Sushruta, Sushruta Samhita, Edited by Dr. Anant Ram Sharma. Sushruta Vimarshini Hindi Commentary. Reprint Edition Volume 1. Choukhamba Surabharti Parkashan, Varanasi, 2012. Page No 465,467.
5. Agnivesha, Charaka Samhita, Edited by Vaidya Harish ChanderKoshwaah, Chakrapaani Dutta Ayurveda Deepika Hindi Commentary Ayushi. Reprint Edition Volume 2. Choukhamba Orientalia, Varanasi 2012. Page No 740.
6. Agnivesha, Charaka Samhita, Edited by Vaidya Yadavji Trikamji Acharya. Chakrapaani Dutta Ayurveda Deepika. Reprint Edition, Choukhamba Surabharti Prakshan, Varanasi 2016, Page No 261.
7. Agnivesha, Charaka Samhita, Edited by Vaidya Harish ChanderKoshwaah, Chakrapaani Dutta Ayurveda Deepika Hindi Commentary Ayushi. Reprint Edition, Volume 2, Choukhamba Orientalia, Varanasi, 2012. Page No 750.
8. Vagbhata, Ashtanga Hridayam, Edited by Dr. Brahma Nand Tipathii, Nirmala Hindi Commentary. Reprint Edition, Choukhamba Sanskrit Pratishthan, Delhi, 2015, Page No. 809.
9. Agnivesha, Charaka Samhita, Edited by Vaidya Harish ChanderKoshwaah, Chakrapaani Dutta Ayurveda Deepika Hindi Commentary Ayushi. Reprint Edition Volume 2, Choukhamba Oriental Varanasi 2012, Page No 745.

10. Sushruta, Sushruta Samhita, Edited by Dr. Anant Ram Sharma, Sushruta Vimarshini Hindi Commentary. Reprint Edition Volume 2, Choukhamba Surabharti Parkashan, Varanasi, 2012. Page No 141.
11. Vagbhata, Ashtanga Hridayam, Edited by Dr. BrahmaNand Tripathi. Nirmala Hindi Commentary. Reprint Edition, Chaukhamba Sanskrit Pratishthan, Delhi 2015. Page No 244.
12. KavirajaAmbikaduttashastriedited, Sushrutasamhita chikitsa sthana, 5/18, Volume 1, reprint 2012, Published by Chaukhamba Sanskrit Sansthan. Varanasi. Page no. 32.
13. Vaidya Harishchandra singh kushawaha edited, Charakasamhita, Chikitsa Sthana, 26/152, 1st edition 2009, Published by Chaukhamba Sanskrit Sansthan. Varanasi. Page no. 699.
14. Acharya Y.T. Sushruta Samhita with Nibandha san graha commentary of Dalhana acharya. Shareera Sthana 10/42. Reprinted. Varanasi (India): Chaukhamba Sanskrit Sansthan; 2014. p.391.
15. Acharya Y.T. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Sutra Sthana 28/28. Reprinted. Varanasi (India): Chaukhamba Orientalia; 2014. p.180.
16. Acharya Y.T. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Chikitsa Sthana 9/25. Reprinted. Varanasi (India): Chaukhamba Orientalia; 2014. p.470.
17. Medical physiology by Guyton & Hall 10th ed page no.616 published by Har court publishers.
18. Hari Sadasiva Sastri paraadakara vaidya, ed. Ashtanga Hridaya of Vagbhata Sutrasthana (Sarvangasundara, Aurvedarasayana, comme, Sanskrit) Varanasi: Chaukhamba Orientalia, 2014; p.243.16/1.
19. Vagbhata, Ashtangasangraha with Hindi commentary by Kaviraj Atridev Gupta, Sutra sthana 29/2, Chowkhamba Krishnadas Academy, Edition: Reprint 2005, Pg. no. 216.
20. Vaidya Jadavji Trikamji Acharya, editor. Charaka samhita by Agnivesha with the Ayurveda Deepika Commentary. Varanasi: Chaukhamba Orientalia, 2015. Siddhisthana 9/117; p.724.
21. Grays Anatomy by Richard Drake, published by Elsevier Publications Ed. 2005.
22. Wadell C, Björk E, Camber O. Nasal drug delivery—evaluation of an in vitro model using porcine nasal mucosa. European journal of pharmaceutical sciences. 1999 Feb 1;7(3):197-206.
23. Agnivesha, Charaka Samhita with the Ayurveda Dipika commentary of Chakrapanidatta, edited by Vaidya Jadavji Trikamji Acharya, Chaukhamba Krishnadas Academy, Varanasi, Reprinted 2006, Siddi sthana 9th Chapter, Verse-4, teeka Pg-717, Pp 738.
24. Acharya Susruta, Sushruta Samhita, Nibandhasamgrahatika of Dalhana and Nyaya Chandrikatika of Gayadasa, Chowkhamba Krishnadas Academy Varanasi, Edition – 2008, Sharira Sthana, 4th Chapter, Verse – 49, pp – 728, pg – 349.
25. Agnivesha, Charaka Samhita with the Ayurveda Dipika commentary of Chakrapanidatta, edited by Vaidya Jadavji Trikamji Acharya, Chaukhamba Krishnadas Academy, Varanasi, Reprinted 2006, Siddi sthana 9th Chapter, Verse-21-24, Pg-719, Pp 738.
26. Ayurveda Dipika commentary of Chakrapanidatta, edited by Vaidya Jadavji Trikamji Acharya, Chaukhamba Krishnadas Academy, Varanasi, Reprinted 2006, Chikitsasthana 29th Chapter, Verse 156-157, Pg- 635, Pp-738
27. Ayurveda Dipika commentary of Chakrapanidatta, edited by Vaidya Jadavji Trikamji Acharya, Chaukhamba Krishnadas Academy, Varanasi, Reprinted 2006, Siddi sthana 9th Chapter, Verse-90, Pg 723, Pp-738.

SATEMENT OF OWNERSHIP AND OTHER PARTICULARS ABOUT "VAIDYARATNAM JOURNAL OF AYURVEDIC MEDICINE"

Title	: Vaidyaratnam Journal of Ayurvedic Medicine	Editor Name	: Dr. P.C. Muraleemadhavan
Regn No.	: KERENG/2019/78329	Editor Address	: Aparna, Vidya Nagar Ayyanthole P.O., Thrissur Kerala - 680003
Language	: English	Printing Press Address	: Ebnezer Print Pack(P) Ltd Industrial Development Plot, Velakkode, Mundur Thrissur - 680 541, Kerala.
Periodicity	: Four Monthly	Owner Name	: Vaidyaratnam Ayurveda Foundation
State	: Kerala	Place of Publication	: Vaidyaratnam Ayurveda Foundation, Vaidyaratnam Road, Thaikkattussery P.O., Ollur, Thrissur - 680 306, Kerala.
Publication District	: Thrissur	E.T.Neelakandhan Mooss, hereby declare that the particulars given above are true to the best of my knowledge and belief	
Price	: Rs. 175/- Per copy		
Publisher Name	: E.T. Neelakandhan Mooss		
Publisher Address	: Eledath Thaikkattu Mana Thaikkattussery P.O., Ollur - Thaikkattussery Dist. - Thrissur-680 306, Kerala.	Sd/-	
Printer Name	: E.T. Neelakandhan Mooss		
Printer Address	: Eledath Thaikkattu Mana Thaikkattussery P.O., Ollur - Thaikkattussery Dist. - Thrissur-680 306, Kerala.		