



## Case Report

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### A CASE REPORT ON PRADHAMANA NASYA: AN AYURVEDIC POWDER INHALATION

Aswani P S<sup>1\*</sup>, Pradeep Kumar P P<sup>1</sup>, Devi R Nair<sup>1</sup>, P Radhakrishnan<sup>2</sup>

<sup>1</sup> Research Officer (Ayurveda), National Ayurveda Research Institute for Panchakarma (NARIP)  
Cheruthuruthy, CCRAS, Ministry of Ayush, New Delhi, India

<sup>2</sup> Retired Assistant Director (In Charge), National Ayurveda Research Institute for Panchakarma (NARIP)  
Cheruthuruthy, CCRAS, Ministry of Ayush, New Delhi, India

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#### \*Corresponding author

E-mail: aswanibalaji2012@gmail.com

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#### ABSTRACT

Nasal medication known as Nasya (medication through nasal route) is one among the Panchakarma (five internal bio-cleansing therapies) procedures which delivers drugs through the nasal route to cure ailments related to head and neck. Ayurvedic classics explain management of Sanyasa (coma) with immediate administration of most Tikshna (high potency) Nasya (medication through nasal route) and Pradhamana/Dhmapana Nasya (Nasya therapy by medicated powder insufflations). The present case report attempts to disclose the significance of an Ayurveda treatment modality Pradhamana/Dhmapana Nasya in an unanticipated medical condition (deep stupor) happened to a patient admitted to National Ayurveda Research Institute for Panchakarma (NARIP) Cheruthuruthy for the treatment of low back pain. On examination of the case, it was found that the patient was in deep stupor (Grade III state of awareness as per Grady coma Scale- and score seven on Glasgow coma scale GGCS). In this case, Rasnadi Choorna was selected for Pradhamana Nasya. The medicine was administered after placing the medicinal powder in a fine thin cotton cloth and a Pottali was made and it was just introduced into patient's nostrils. Immediately after the administration of Pradhamana/Dhmapana Nasya the patient woke up from deep stupor state and became alert. This case report is an attempt to reveal the effect of Nasya in an unexpected medical condition and it also gives a new ray of hope to conditions of disturbed consciousness through nasal route of drug delivery.

**Keywords:** Panchakarma, Nasya, Pradhamana Nasya, Sanyasa, Coma, Deep Stupor, Rasnadi Choorna

#### INTRODUCTION

Ayurvedic medicines are supposed to be used for treating only chronic ailments or there is a misconception that Ayurveda has no role in managing emergencies. But while referring Ayurvedic texts we may get so many perspectives, which prove Ayurveda had a role in managing emergencies and once there was emergency management through Ayurveda. One published case report on Ayurvedic management of Coma shows still studies are going on in emergency conditions like coma, where internal administration of medicines has no role but Ayurvedic treatment procedures like Nasya and Dhmapana (medicated smoking) etc. have pivotal role<sup>1</sup>.

Panchakarma (five internal bio-cleansing therapies) is one of the major areas of Ayurveda, where five treatment modalities are explained for treating various diseases as per disease severity, disease location, etc. viz. Vamana (therapeutic emesis), Virechana (therapeutic purgation), Nasya (medication through nasal route), Niruha Basti (therapeutic decoction enema) and Anuvasana Basti (therapeutic unctuous enema)<sup>2</sup>. Panchakarma can be used in various aspects, i.e. it can be used in curative aspect, palliative aspect and in nourishing aspect<sup>3,4</sup>. Nasal medication is known as Nasya which delivers drugs directly to the brain. Nasya has its special features because nasal administration needs only little quantity of medicine and it is directly administered into the nose from where it can reach up to the brain and provides greater action<sup>5</sup>.

There are various modalities of Nasya which can be applied in various disease conditions in various forms viz. Marsha Nasya (high dose medication through nasal route) and Pratimarsha

Nasya (low dose medication through nasal route), Avapida Nasya (nasya therapy by expressed juice from paste), Pradhamana Nasya (Nasya therapy by medicated powder insufflations). Dhuma Nasya (Nasya therapy using fumes of medicines)<sup>6,7</sup>. Pradhamana Nasya can be applied to the nose in 2 ways either by snuffing using a tube of 6 Angula (approx. 15 cm) length or by snuffing the medicated Choorna which is tied in a thin cotton cloth<sup>8,9</sup>. Pradhamana Nasya is specifically indicated for Cetovikara (diseases which affect mind and consciousness) and in Sanyasa (coma)<sup>10,11</sup>.

Sanyasa (coma) occurs when vitiated Doshas (regulatory functional factors of the body) affects the action of Kaya (body), Vak (speech faculty) and Cetas (consciousness); when the vitiated Doshas enters the Pranayatana (seats of life/essential organs for life), which weakens the patient and bring about absolute unconsciousness<sup>12</sup>. While explaining the management Sanyasa, immediate administration of most Tikshna Nasya and Pradhamana Nasya are recommended<sup>13</sup>.

Coma, the severest form of reduced alertness in which the patient is in the deep sleep-like state from which the patient can't be aroused<sup>14</sup>. The word stupor derived from the Latin word 'stupere'. Stupor can be defined as a state of reduced sensibility and response to stimuli. It can be distinguished from the coma. In stupor, the patient can be aroused with vigorous and repeated stimulation. It can be induced by CNS agents. Stupor means that only vigorous and repeated stimuli will arouse the individual and when left undisturbed, the patient will immediately lapse back to the unresponsive state<sup>15,16</sup>.

One case of deep stupor (Grade III state of awareness as per Grady coma Scale<sup>17</sup> - and score seven on Glasgow coma scale GGCS<sup>18</sup> (Table 1) was managed with Ayurvedic treatment modality. It was challenging to give medicines to unconscious patients in the oral or rectal route. Considering the patient's condition and as per the immediate availability of medicines, in the present study, we have selected Rasnadi Choorna<sup>19</sup> for Pradhama Nasya. The medicine was administered by Pottali method i.e. after placing the medicinal powder in a fine thin cotton cloth it was just introduced into patient's nostrils. Immediately after snuffing patient awakened and became alert.

### Case report

Male Patient from Tamil Nadu having age 21 years not having any history of drug abuse and psychological illness was admitted to the National Ayurveda Research Institute for Panchakarma (NARIP) for the treatment of Katisula (Low back pain). The patient was normal before one month. He had a fall on his low back in the bathroom with which he felt severe pain in low back region. Then he consulted a nearby Physician and given him a bandage on low back region with certain leaves with which the pain got symptomatically reduced. But after one week he came to lift his Grandma weighing 70 kg as she had a fall. This resulted in severe pain in his low back region. The patient complains of having unbearable pain so that he was not able to sit. As soon as he sits from lying position, he gets severe pain and the pain radiates up to his head along with numbness of both upper limbs and nausea. He consulted Allopathic doctors in Chennai and took an X-Ray of lumbar spine which showed no abnormalities and done physiotherapy and skin traction and also taken medications for two days. After that, he came to National Ayurveda Research Institute for Panchakarma (NARIP), Cheruthuruthy and got admitted here. Informed consent was obtained from patient before the start of study treatment and procedures.

He had given oral medications for low back pain along with external therapeutic procedures which included Lepam (ointment - external application of medicines in the form of paste), Abhyanga (therapeutic massage) and Bashpa Sweda (sudation therapy). Medications were taken internally and Abhyanga and Bashpa Sweda were done for two days, but by evening the pain aggravated severely in the low back region and was referred to nearby Allopathic Hospital. There he had given IV injection and discharged from there and he came back to NARIP by 10 pm on the same day and as he was feeling drowsy and he did not wake up till next day even by 10.30 am. His attender informed that he had not taken dinner on the last day and even does not have the breakfast and did not even pass urine and motion till the time. After physical examination it was found that the patient was in the deep stupor state, was not responding to any stimuli like sound, touch, vibration, cold and hot, arousal for few seconds occurred only after deep pain stimuli (While taking a blood sample for checking Random Blood Sugar) but instantly the patient entered into stupor stage. All his vitals were monitored regularly. Blood pressure was 120/80 mm of Hg; Oxygen saturation was 97%; Pulse Rate was 90/min (it kept on increasing, showing Tachycardia); ECG was normal; Pupil slightly reacted to light; Random Blood Sugar was 98 mg/dl; At 12.30 pm, Blood pressure was 118/70 mm of Hg; still he did not wake from the stupor state. Then we planned to administer Pradhama Nasya with Rasnadi Choornam which is Tikshna (having high potency and causes intense stimulation of nasal mucosa) and soon after inhalation, patient coughed and woke up. He complains of giddiness and increased appetite. He had given Drakshadi Kashaya Panakam and Gorochnadi Gulika sublingually for headache and giddiness. Within half an hour his headache and

giddiness got relieved. Blood pressure came to 110/70 mm of Hg and pulse rate reduced to 78/min.

### RESULT AND DISCUSSION

In Charaka Samhita, it is clearly stated that, in weak persons, when very strong Doshas get located in the abode of vital breath (vital organs) and affects the action of body (Kaya), speech (Vak) and consciousness (Cetas) and causes Sanyasa (coma). The person affected with coma looks like stick-like and as dead and immediately succumbs to death if the emergency is not managed quickly<sup>20</sup>. Sanyasa is managed with immediate administration of most Tikshna Nasya and Pradhama Nasya<sup>21</sup>. Nasya is the procedure where medicine applied through nostrils can reach up to the brain.

Studies show that most of the therapeutics used for treating diseases of the brain is not so effective because of the complex brain structure and its barriers. Recently advanced approaches have emerged for drug delivery through nose. Intranasal drug delivery provides direct drug transport to the brain through trigeminal and olfactory pathways<sup>22</sup>. The Blood-Brain Barrier (BBB) and Blood Cerebrospinal Fluid barrier limits the drug delivery to the brain. The alternative method to deliver drugs directly to the brain is having the risk of infections. Nose to brain (N2B) pathway is a less invasive and patient-friendly method where medicines can be applied directly into the brain through the nasal cavity. The skull base forms the roof of the nasal cavity which is lined by olfactory epithelium and harbours nerves that project to the brain. Studies in humans and rodents show N2B deliver substances through the olfactory ad trigeminal nerve. The intranasal pathway composed of two routes viz. intracellular and extracellular. The intracellular pathway takes place through olfactory neurons and extracellular pathways through direct entry of molecules to the cerebrospinal fluid<sup>23-25</sup>.

It may be due to the action on neurotransmitters to the brain and thereby stimulating the excitatory neural pathway through the cribriform plate of ethmoid bone<sup>26</sup>. In this case, Tikshna (high potency) drug selected for Pradhama Nasya was Rasnadi Choorna (Table 2) as it contains ingredients like Trikatu which are Tikshna (high potency) and Ushna (~hot) in nature. These types of drugs may directly stimulate the brain by directly stimulating through the excitatory pathway by acting on the neurotransmitters<sup>27</sup>. Transnasal drugs in powder form may stimulate the limbic system and hypothalamus<sup>28</sup>.

The action of Nasya explained in Ayurvedic Classic Ashtanga Sangraha as the medicines administered through nostrils can reach up to the brain and it draws out the entire vitiated Doshas<sup>29</sup>. This correlation may be due to the wide spectrum of Nasya as it can be applied to various disorders of head and neck in various forms.

### CONCLUSION

Nasya the Ayurvedic mode of drug delivery to the brain via nasal administration which was developed and practiced years back and is practicing widely in this epoch for treating various diseases of head and neck. Ayurveda has a wide spectrum of applicability in various disorders. This case report is an attempt to reveal the effect of Nasya in an unexpected medical condition and it also gives a new ray of hope to conditions of disturbed consciousness. More studies are to be conducted along with the help of Modern Science and Technology to prove its action in various disease conditions.

Table 1: As per Glasgow coma scale assessment of patient before Nasya and after Nasya

	Score Before treatment	Score After treatment
Eye opening	2	4
Best motor response	4	6
Best verbal response	1	5
Total score	7/15	15/15

Table 2: Ingredients of Rasnadi Choorna

Serial number	Name of the ingredient		Botanical Name
	Name in Sahasrayoga	Sanskrit Name	
1.	Rasna	Rasna	<i>Alpinia galanga</i>
2.	Amukkura	Ashwagandha	<i>Withania somnifera</i>
3.	Devadaru	Devadaru	<i>Cedrus deodara</i>
4.	Katuka	Katuki	<i>Neopicrorhiza scrophulariiflora</i>
5.	Chennyaya	Kumari	<i>Aloe barbadensis</i> Miller
6.	Chenchilya	Sarjam	<i>Shorea robusta</i>
7.	Kottam	Kushta	<i>Saussurea robusta</i>
8.	Vayambu	Yacha	<i>Acorus calamus</i>
9.	Gairika	Gairika	<i>Kaolinum</i>
10.	Nisa	Haridra	<i>Curcuma longa</i>
11.	Yashti	Yashtimadhu	<i>Glycyrrhiza glabra</i>
12.	Bala	Bala	<i>Sida cordifolia</i>
13.	Musta	Musta	<i>Cyperus rotundus</i>
14.	Sunti	Sunti	<i>Zingiber officinale</i>
15.	Maricha	Maricha	<i>Piper nigrum</i>
16.	Pippali	Pippali	<i>Piper longum</i>
17.	Puti	Puti	<i>Sterculia foetida</i>
18.	Sahasravedhi	Hingu	<i>Ferula assa-foetida</i>
19.	Jalam	Hreebera	<i>Plectranthus vetiveroides</i>
20.	Usira	Usira	<i>Vetiveria zizanioides</i>
21.	Phenakam	Phenaka	Sponge
22.	Sreekhanda	Chandana	<i>Santalum album</i>
23.	Agaru	Agaru	<i>Aquilaria agallocha</i>
24.	Tintrimidalasira	Amlika	<i>Tamarindus indica</i>

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