

A REVIEW ON PANCHABAUTIKA TAILA NASYA IN MANAGEMENT OF VAK VIKARA IN CHILDREN

Deepthi B. Rao^{1*} and Jithesh Chowta²

¹PG Scholar, Department of P.G. Studies in Kaumarabhritya, Alva's Ayurveda Medical College, Moodabidri.

²Associate Professor, Department of P.G. Studies in Kaumarabhritya, Alva's Ayurveda Medical College, Moodabidri.

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*Corresponding Author

Dr. Deepthi B. Rao

PG Scholar, Department of
P.G. Studies in
Kaumarabhritya, Alva's
Ayurveda Medical College,
Moodabidri.

ABSTRACT

A child's entire development and intelligence can be determined by their intelligent speech and language. Speech disorders in children affect their fluency and intelligibility. Disorders of speech and language affects up to 8% of preschool-aged children. Nearly 20% of 2-year-old are thought to have delayed onset of speech. By age 5 year, 19% of children are identified as having a speech and language disorder. Function of speech is carried out by *Udana Vaayu* which is situated in *Uras*. Certain functions of *Udana Vaayu* are responsible for *Vak Pravritti*. Hence *Vikruta Avastha* of *Udana Vaayu* will lead to *Vak Dosh*. In *Ayurveda* it is mentioned that *Taila* is best *Vata Shamaka* and *Nasya* does *poshana* to the *Shiras*. In *Kashyapa Samhita*

Panchabautika Taila is indicated in *Vakvikara* as *Nasya*. Hence attempt is made for conceptual study about it.

KEYWORDS: *Vak Vikara, Nasya, Panchabautika Taila, Speech Disorders.*

INTRODUCTION

Speech refers specifically to sounds produced by the oral mechanism, including the lips, tongue, vocal cords, and related structures.^[1] Speech disorder is defined as disruption in the production of the phonetic aspects of words, phrases, and sentences so that communication is partially or, in severe cases, completely unintelligible to listeners.^[2] Speech disorders include articulation, fluency, and resonance disorders.^[3]

Speech disorders are not directly mentioned in our classics, can be understood by applying basic principles of Ayurveda. The balance of inspiration (by *Prana Vata*) and expiration (by *Udana Vata*) is essential for normal speech and phonation. Any deviation in the above leads to *Vak Vikara* in childrens.

MATERIALS AND METHOD

The classical Ayurvedic textbooks like *Kashyapa Samhita*, *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Sangraha*, *Ashtanga Hridaya* and modern textbooks along with journals, article and internet sources were referred for details on *Vak Vikara* and Speech Disorders.

Udana vata

Function of speech is carried out by *Udana Vayu* which is situated in *Uras* and has functional range from nose to umbilicus.^[5]

The word *Udana* is derived from the Sanskrit root उत्-*above*, आ-*around* and दा- *to give*, ल्युट्-*pratyaya-activator/does*.

Udanavata resides in the *Uras* and moves in the regions of the throat, nose, umbilicus. While *Vagbhata* added some functions viz will and memory power i.e., *Smrithi*-means *Samskarajanya Jnanam Smrithi* – the knowledge arised by *Samskara*. The *Vakpravrutthi* or the production of speech is an important act.

Prana Vayu moves in the chest region. Thus, speech is produced by coordinated functions of *Prana* and *Udana*.

Vak utpatti

Vak Utpatti^[6] is the production of articulate sounds always bearing a definite meaning. The *Atma* associated with *Buddhi* and the later inturn orders the *Manas*. Thus, the *Manas* under the influence of *Buddhi* stimulates the *Jataragni*. The *Jataragni* stimulates *Udanavata* and finally the *Udanavata* produces speech. This *Udana vata* starts to move upwards from the *Nabhi* means first production of speech takes place at *Nabhi*.

The words which we speak are of two types.

1. *Dhwanyatmaka Shabd*as -Produced by the movements of vocal cords and characterized by just crude sound.

2. *Varnatmaka Shabd*-Produces by the co-ordinate movements of the tongue, lips, palate, cheeks and various syllable and words will be produced.

In the due course of development when the *Vayu* is vitiated or occluded by *Kapha* it will lead to delayed milestones of speech.^[7]

Production of speech

The cortical center for speech production is located in the Broca's area in the left frontal lobe in a right-handed person and vice versa. Other areas of brain concerned with production of speech include Wernicke's area (temporal lobe), the tract of nerves that connect Broca's and Wernicke's areas and angular gyrus.^[8]

Speech is composed of two mechanical functions: (1) phonation, which is achieved by the larynx, and (2) articulation, which is achieved by the structures of the mouth.

Phonation-The larynx, is especially adapted to act as a vibrator. The vibrating element is the vocal folds. During normal breathing, the cords are wide open to allow easy passage of air. During phonation, the cords move together so that passage of air between them will cause vibration.

Articulation and Resonance- The three major organs of articulation are the lips, tongue, and soft palate. The resonators include the mouth, the nose and associated nasal sinuses, the pharynx, and even the chest cavity.^[9]

Speech disorders^[10]

Speech disorders include articulation, fluency, and resonance disorders.

1. Articulation disorders

Articulation disorders (Phonetic Disorders) focus on errors (e.g., omissions, substitutions, and distortions) In production of individual speech sounds.

- Omissions: (Bo for boat)
- Substitutions: (Wabbit for rabbit)
- Distortions: (Shlip for sip)

Childhood Apraxia of Speech (CAS) is an inability to utilize motor planning to perform movements necessary for speech during a child's language learning process. The cause may be genetics and sometimes there is no observable cause.

Dysarthria is a motor speech disorder characterized by difficulty articulating sounds. The difficulty in articulation does not occur in planning the motor movement, as happens with Apraxia of Speech.

Instead, dysarthria is caused by inability in or weakness of the muscles in the mouth, face, and respiratory system. Dysarthria can result from congenital conditions, or it can be acquired at any age as the result of neurological injury, disease, or disorder.

2. Fluency disorders

Fluency is the aspect of speech production that refers to continuity, smoothness, rate, and effort. Fluency disorders are difficulties with the rhythm and timing of speech characterized by hesitations, repetitions, or prolongations of sounds, syllables, words, or phrases.

Common fluency disorders include:

- **Stuttering:** Rapid-fire repetitions of consonant or vowel sounds especially at the beginning of words, prolongations, hesitations, interjections, and complete verbal blocks.
- **Cluttering:** Excessively fast and jerky speech

3. Voice disorders

Voice disorders are problems with the quality or use of one's voice resulting from disorders in the larynx. Voice disorders are characterized by abnormal production and/or absences of vocal quality, pitch, loudness, resonance, and/or duration.

1. Organic voice disorders are physiological in nature and result from alterations in respiratory, laryngeal, or vocal tract mechanisms
 - **Structural** — organic voice disorders that result from physical changes in the voice mechanism (e.g., alterations in vocal fold tissues such as oedema or vocal nodules; structural changes in the larynx due to aging)
 - **Neurogenic** — organic voice disorders that result from problems with the central or peripheral nervous system innervation to the larynx that affect functioning of the vocal mechanism (e.g., vocal tremor, spasmodic dysphonia, or paralysis of vocal folds)
2. Functional voice disorders result from improper or inefficient use of the vocal mechanism when the physical structure is normal (e.g., vocal fatigue; muscle tension dysphonia or aphonia; diplophonia; ventricular phonation)

Nasya

Head is considered as *Uttamanga* as it is the seat for vital centers of living creatures and for all the senses.^[11] Nasa is said to be the door of the *Shiras* and helps in the evacuation of *Dosha*, thereby pacifying the diseases. *Nasya* is the main line of treatment for diseases above the clavicle and is the only *Shodhana Karma* for *Urdhwanga*.

Panchabautika taila nasya

Panchabhautika Taila is described by *Acharya Kashyapa* in *Shatakalpadhyaya* to be used in the form of nasal instillation (*Nasya*).^[12]

Equal parts of the drugs are cooked with 16 parts of water to make *kwatha*, which is then reduced to a quarter. Then 1 part of *kalka*, 4 parts of *taila* and *godugda* is added and boiled until the appearance of the foam.

It is indicated in *Mukhata*, *Jada*, *Vakvidwamsa*, *Prajagara*, Diseases of eye, increases *Smrithi* and *Medha*, does *Indriya Prasadana*.

Sl. No.	Ingredients	Parts	Sl. No	Ingredients	Parts
1	<i>Jivaka</i>	1	13	<i>Meda</i>	1
2	<i>Rishabaka</i>	1	14	<i>Vidanga</i>	1
3	<i>Draksha</i>	1	15	<i>Nilkamal</i>	1
4	<i>Madhuyasti</i>	1	16	<i>Gokshura</i>	1
5	<i>Pippali</i>	1	17	<i>Nidigdika</i>	1
6	<i>Bala</i>	1	18	<i>Saindava</i>	1
7	<i>Pundarika</i>	1	19	<i>Rasna</i>	1
8	<i>Brihati</i>	1	20	<i>Sharkara</i>	1
9	<i>Manjista</i>	1	21	<i>Jala</i>	16 parts
10	<i>Twak</i>	1	22	<i>Tila taila</i>	4 parts
11	<i>Punarnava</i>	1	23	<i>Godugda</i>	4 parts
12	<i>Ansumathi</i>	1			

DISCUSSION

Speech disorders are characterised by a difficulty in producing normal speech patterns. Children go through many stages of speech production while they are learning to communicate. Broca's speech area (area 44 and 45) is located in the frontal lobe close to the lateral cerebral sulcus. In most of the people the planning and production of speech occurs in the left frontal lobe. From Broca's speech area, nerve impulses pass to the premotor regions that control the muscles of larynx, pharynx and mouth.^[13]

According to *Aacharya Charaka*, *Nasa* is the portal (gateway) of *Shiras*. The drug administered through nose as *Nasya* reaches to the brain and eliminates only the morbid doshas responsible for the production of disease.^[14] According to the commentator Indu, the exact *Sthana* of the *Shringatakamarma* is “*Shiraso Antarmadhya Murdha*” which can be considered for the middle cranial fossa. On basis of above facts, the verse i.e. “*Nasa Hi Shirsodwaram*” can be justified which reflexes the action of *Nasya* in head and systemic disorders.

Panchabautika Taila Nasya is described as capable of increasing power of all 5 *Indriyas*.

It contains twenty-two ingredients. Considering the pharmacodynamics of the formulation, there is a predominance of *Madhura*, *Tikta*, *Rasa*, *Ushna Veerya*, *Madhura Vipaka* and *Vata Kapha Shamaka* properties. *Jivaka*, *Bala*, *Meda* are having *Madhura Rasa*, *Ojovardhaka* and *Balya* properties which nourishes the central nervous system. *Yastimadhu*, *Vidanga*, *Twak* are *Kapha Vatahara* in nature and has *Kanta Shuddikara* property. All other ingredients are having *Ushna Veerya Katu Vipaka* also act as *Vata Kapha Shamaka*. *Saindava Lavana* is *Vata Shamaka*, due to *Sheeta Veerya* is *Pitta Shamaka*. It is *Kaphachedaka*.

Tila Taila is used as the lipid medium in this formulation. The best medication for *Vataja* disorder is *Taila*. Because of its *Vyavayi*, *Snigdha*, *Ushna Guna* when it is processed with other drugs it becomes more powerful therapeutically.

The action of *Nasyakarma* can be explained in light of modern anatomical and physiological studies as follows.^[15]

- **At the level of blood circulation**

The drug is absorbed into facial veins, and when blood flows backward through the inferior ophthalmic vein, it reaches the brain's venous sinuses. *Swedana* performed before *Nasya* causes vasodilatation by stimulating the efferent vasodilator nerves.

- **At the levels of lymphatic channels using CSF**

Drug enters the brain through extended arachnoid sheath from brain through submucosal area of nose due to lipid soluble compounds carried through epithelial membrane allowing access into lymphoid tissue.

- **At the level of Neuroendocrinal and Neurovascular stimulation**

The peripheral olfactory nerve is stimulated by *Nasya* and functions as a chemoreceptor. By identifying particles, these chemoreceptors transmit impulses to the olfactory bulbs, which stimulate higher brain centres like the hypothalamus and limbic system. The higher centres are connected to Anterior and Posterior Pituitary. However, it is known that these nerves are connected with the limbic system of the brain including Hypothalamus. The limbic system and the Hypothalamus have the control over endocrine secretions.

- **At the level of neuropsychological levels**

The limbic system of the brain, including the hypothalamus, is connected by the terminal nerves that run alongside the olfactory. Along with being responsible for controlling endocrine secretions, the limbic system is also linked to behavioural aspects of human beings. Thus, certain drugs administered through the nose may have an impact on immediate psychological functions by acting on the limbic system through olfactory nerves.

CONCLUSION

Speech disorders in childhood are a public health concern. Childhood Speech Disorders are associated with effects on the day-to-day lives of individuals and can potentially have negative long-term personal development and opportunity effects.

It is crucial to get an accurate diagnosis of the problem and use precise treatment intervention. *Nasya* is considered as the best line of treatment for the diseases above the clavicle.

Panchabautika Taila Nasya has *Vatahara* property which removes the vitiated *Vata* and nourishes the brain and hence helps in treating *Vak Vikara* in children.

Further clinical studies can be carried out on *Panchaboutika Taila Nasya* in *Vak Vikara* in children.

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