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REVIEW ON KARNA ROGA W.S.R TO NIDAN

Vd. Nikit P. Rathod*[1], Vd. Suryakant Dwivedi[2] and Vd. Sneha Tiwari[3]

[1]Assistant Professor, Shalakya Tantra Sai Ayurved College and Research Institute Vaijapur Dist India.
[2]Associate Professor, Shalya Tantra Shri K.R. Pandav Ayurved College Nagpur
[3]Associate Professor, Kayachikitsa Shri K.R. Pandav Ayurved College Nagpur.

***Corresponding Author: Vd. Nikit P. Rathod**

Assistant Professor. Shalakya Tantra Sai Ayurved College and Research Institute Vaijapur Dist India.

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INTRODUCTION

The rising prevalence of ear disorders worldwide can be contributed to the current stress-prone lifestyle, pollution, and issues like hygiene, ignorance, and poor infrastructure further add to the woes of developing countries. Otitis-media-related hearing impairment has a prevalence of 30.82 per ten-thousand.[1] By 2050, nearly 2.5 billion people are projected to have some degree of hearing loss.[2] It is estimated that there are more than 500,000 people affected by Meniere's disease in India.[3] Ear Polyps, Tinnitus, Benign Paroxysmal Positional Vertigo, etc., are some other major disorders that gradually turn into hearing and neurological disabilities. Despite expensive diagnostical and medical advancements, the exact triggering factors and aetiology have not been determined yet. Hence, thorough research can be conducted linking the time-tested concepts of Karna roga with their contemporary ear disorders.

1. Avashyaya (Exposure to Mist and Snow) - Excessive contact with cold or humid weather is Avashyaya. Especially during the winter season, it causes the vitiation of both Vata and Kapha Dosha because of its Sheetatava property. After Nidana Sevana, the ear that Vatadi Dosha already vitiates leads to increased Kleda Bhava of Mamsa and Rakta, which facilitates the growth of Krimi in Karna and further causes Karnashoola.6 Therefore, Avashyaya can lead to Krimikarna, which can be analyzed according to symptoms of otomycosis, and Karnashoola (otalgia) is one among the presenting symptoms in otalgia. In present times, when the body is exposed to a cold environment, the initial physiological response of the vascular system is peripheral vasoconstriction. This shunts blood extremities to the core, ensuring perfusion and oxygenation of vital organs and reduction of heat loss. Sustained subjection of the body to freezing temperatures leads to tissue ischemia (lack of oxygen), which is further amplified by vasospasm (contraction of the arteries). Hypercoagulability of blood resulting from platelet and erythrocyte (red blood cell) aggregation causes thrombosis (clots), thus increasing tissue hypoxia. Clinically, frostbite injury presents with loss of sensation and pale, waxy, bluish skin discoloration (cyanosis). Blisters and oedema can also be seen in affected areas. Exposed regions of face and head are susceptible to frostbite. Thus, digits, toes, ears, nose, and cheeks are often areas at risk.

Jalakrida (Playing in the Water) - Jalakrida includes swimming under water, diving, bathing in the river, sea, fountain, or sprinkling water. They are Sheeta in property, leading to Kapha vitiation. Spending more time in water causes Vata Prakopa also. Underwater diving may lead to Avarana of Vata in the ear, resulting in a discharge that is called Karnasrava. Karnashoola can also be seen as a symptom of Srava. During underwater diving, the Eustachian tube is not able to maintain middle ear pressure at the surrounding atmospheric level. At the time of rapid descent in underwater diving, this disequilibrium causes middle ear Barotrauma. The pressure in the middle ear gradually becomes less than ambient pressure, and the Eustachian Tube (ET) should open to equilibrate these pressures. With a pressure difference to descend beyond 1.4 meters' depth, ET is locked. This sudden negative pressure causes retraction of the tympanic membrane, hyperemia, engorgement of vessels, and hemorrhages. This phenomenon can also occur during uncontrolled ascent. Sometimes, when these pressure changes are transmitted to the cochlea through round and oval windows, inner ear barotrauma occur. The stapes footplate and associated ligaments provide additional support to the oval window compared to the round window through these pressure changes. When High-pressure air is forced into middle ear space, it causes rapid outward displacement of the stapes and inward displacement of the round window membrane. The disruption of Reissner's membrane and the basilar membrane can happen due to this high-pressure wave.

Similarly, in the case of bathing or swimming, the presence of moisture, humidity, and water in the ear canal allows infection to grow as the protective lining, i., cerumen, gets removed and an increase of pH takes place. Among divers, shortly after water immersion, a change in normal microbial flora from Gram-positive to Gram-negative species occurs. This can be associated with otitis externa cases. Some bacterial agents have been frequently isolated from the ear canal of those diagnosed with otitis externa; among them, Pseudomonas aeruginosa, Staphylococcus epidermidis, and Staphylococcus aureus are the most common.

3. Karnakanduyana (to itch)

By Sevana of Kapha Pra Kopaka Nidana, accumulated vitiated Kapha dosha in the ear canal produces a severe itching sensation and inflammation. The continuous itching can also cause Karna Vidradhi. Itching in the ear can be a sign of a serious illness if the examination of the ear does not reveal any significant clinical findings. It can be related to several causes like.

- Acid eructation - with each episode, the patient complains of itching in both ears
- Caries teeth may produce without itching in ears
- Temporomandibular joint pathology
- Itching associated with a blocking sensation in the ear, mostly preceded by an attack of rhinitis

Mode of Action of Nasya

From the explanations given by different Acharyas about the mode of action of Nasya, certain assumptions can be made. Nasa is the only passage to Shirah. So, the medicine taken through Nasa can easily move to Shirah and get absorbed. Nasa being the passage to Shirah, the drug taken through nostrils reaches Shringataka, a Siramarma through Nasa Srota and enters the Murdha (Brain), through Netra (Eyes), Shrotra (Ears), Kantha (Throat) and puts out the morbid Doshas from Urdhwajatru and throws them out from Uttamanga. Drugs, in the form of Nasya, have probable modes of entry in circulation, hence, they can play a vital role in the improvement of eye health. Of course, the position of the head during Nasya Karma also helps the medicines to enter easily into the pathway.34 Probable mode of entry to the circulation might be as follows.

- By general blood circulation, after it is absorbed through the mucous membrane.
- Direct pooling into venous sinuses of the brain via inferior ophthalmic veins.
- Absorption directly into the cerebrospinal fluid. As this medicine is absorbed in ophthalmic vessels, it has its nourishing role in extra-ocular muscles and the eye proper. Along with this, antioxidant properties have a role in maintaining the tissue built.

CONCLUSION

- Shodhana Karmas are always very effective before any therapy. Nasya, being one among them, is the best for Urdhwajatru Vikaras, which includes Netra Vikaras.
- Compared with other Shodhana Karmas, Nasya is a less expensive and less complicated therapy. Since Nasya can give a Sthanika Shodhana of Shirah and Netra being situated in Shirah, it can act faster in Netra and can be more effective.
- Proper administration of Nasya in the early stages of Netra Rogas can even avoid unwanted surgeries.
- Thus it promises a faster and effective therapy for the prevention and cure of Netra Rogas which have already been proven through various research.
- 1 as righty quoted by Acharya Vagbhata.

Mithyayogenashastrasya

In electrocochleography (used for the cochlear function), an atympanic needle electrode is passed through the ear drum, causing perforation of the membrane. In children, improper karnavyadhana samskar12 can lead to inflammation of the local area along with pain. Improper piercing causes injury to the nerves present in the ear. The Siras present are Kalika, Marmarika and Lohitika. Injury to Lohita Siras leads to Manyastambha, Apatanaka, Shiroabhighata, Karnashoola. For piercing the ear, usually, a sharp instrument is passed through the lobe or helix. It causes injury to the skin, subdermal fat, and the surface of the opposite side of the ear. In between this soft tissue, scarring develops. Often, in some cases, if inflammation remains persistent and wound healing is delayed, it tends to form keloid. It is an abnormal proliferation of scar tissue at the site of a cutaneous injury. This causes itching, pain, and cosmetic deformities, which lead to psychological distress for the patient.13 To remove impacted wax, some people use excessive and unwise amounts of cotton bud, which cause discomfort, vertigo, and conductive hearing loss. The self-cleaning of the ear canal occurs by epithelial migration from the tympanic membrane, aided by movements of the temporomandibular joint. Sometimes, if a sharp instrument like hair pins are used, it can also cause injury to the external auditory canal or perforation of the tympanic membrane, which may further lead to otitis externa.

Pratishyaya

- The disease occurs by Vega sandharana, Ajeerna, Raja, Atibhashya, Krodha, Rituvaishamya, Shiroabhitapa, Prajagara, Atiswapna, Ambusheeta, Maithuna, Avashyaya, Dhooma. These factors lead to the aggravation of Vata Dosha and other Doshas, individually or collectively. If the condition of Pratishyaya is not treated or ignored for a longer period, then diseases like Apeenasa, Badhirya, and hata occur. With a prevalence of 10-30%, allergic rhinitis (AR) is the most common allergic disorder. Because of the close anatomical relationship between ET and the nasopharynx, allergic disorders such as AR may cause ET dysfunction by inflammation and swelling in this region. In nasal mucosa of young children with chronic otitis, chronic or recurrent OME raised levels of eosinophils, basophils, and histamine have been found. It is associated with allergic rhinitis in 24% to 89% of

cases.

Mithyayogenashabdasya

- According to Ayurveda, Shrotendriya originates from Akasha Mahabhoota, Shabda travelling through Vata in the presence of Akasha comes in contact with Shrottendriya Adhishthana (karna) and is transmitted through Indriya to Shravana Buddhi which is responsible for perception of sound, so Vata plays an important role in normal hearing procedure. By Sevana of Vata Prakopaka Nidana, vitiated Vayu gets lodged in Shabdavaha Shrotas, which is attributed as prime etiological fact or for the causation of karnanada. 19 Thus, proper perception, i., carrying of sound waves inside the Shabdavaha Shrotas, is obstructed, and sound waves cannot be perceived, and this results in Badhirya. 20 In some cases, vitiated Kapha obstructs the Vata pathway because of which Vata fails to conduct sound waves. Listening to amplified music can be responsible for hearing damage. Noise-induced hearing loss can be temporary or permanent, depending on the intensity and duration of exposure. In "temporary threshold shift," the hearing is impaired immediately after an episode of exposure to loud sounds (e.g., attendance at a concert) but recovers after an interval of a few minutes to a few days to 2 weeks. It is characterized subjectively by decreased hearing sensitivity, a feeling of fullness in the ears, tinnitus (ringing), and a perception that sounds are muffled. When noise exposure is prolonged or repeated, it can cause the death of sensory hair cells, and impairment in hearing is permanent. This is referred to as a "permanent threshold shift." The death of hair cells occurs over months or years, followed by a slower loss of spiral ganglion neurons.21 National Institute on Deafness and Other Communication Disorders has estimated that 15% of the present population has hearing loss due to exposure to loud noise, and that may be noise at work, leisure activity, or use of mobile phone.

Pathya and Apathya Ahara and Vihara in Ear Disorders

- Pathya Ahara - Godhuma, Shali, Mudga, Yava, Puranaghrita, Patola, Shigru, Rasayana dravyas
- Pathya Vihara - Sweda, Virechana, Vamana, Nasya, Brahmacharyapalana, Alapbhashna • Apathya Ahara - Kaphakara and Guru Aharas
- Apathya Vihara - Shirasnana, Vyayama Kandooyana

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