

Research Article

A Critical Review on Assessment of Karna Roga Nidana in Present Lifestyle

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A B S T R A C T

Hearing is one of our most important senses. It enables us to steer our existence without limitations and helps us to socialize, work and communicate with the world. Similarly, our ancient system of medicine has also given importance to Panchendriya among which Karna is the one responsible for perception of sound. The present-day lifestyle adopted by man is the way of living that helps him to enjoy more aspects of life. These patterns of individual practices and behavioral choices have increased health risks. Majority of ear disorders result due to these inappropriate habits. As prevention is better than cure, Ayurveda helps in understanding causative factors according to modern lifestyle and ways to prevent it. Hence this work aims to critically review causatives of Karnaroga from all available literatures of Ayurveda and establish a link with modern lifestyle causing aural pathogenesis.

Keywords: Lifestyle, Karnaroga Nidana, Literary Review

Introduction

Lifestyle disorders are an inappropriate relationship of people with their surroundings which develops due to their daily habits.¹ The causes of disease relating to both body and mind are three - fold i. e. Prajnapradha, Asatmya Indriyarthasamyoga and Parinama - kala.² Prajnapradha means doing things without discriminating as to whether it is favorable or not for our body and mind. Asatmeindriyarthasamyoga means improper contact of senses with their objects and Parinama refers to the effects of time, natural and physical transformation that occur over time. In past few decades, urbanization that prevailed in India has led to increase of diseases related to lifestyle. In India (2018) 466 million people have suffered from significant auditory loss³ and 17- 20 % from Acute Suppurative Otitis Media (ASOM)

and 7.8 % from Chronic Suppurative Otitis Media (CSOM).⁴ There are few aspects of an individual's lifestyle which when incorporated habitually can damage the organ. The ear forms one of the most essential pathways to interact with world around us. It collects processes and interprets sounds continuously and without conscious effort. In Ayurveda, Acharyas have mentioned Karnaroga Nidanas which are considered as causative factors responsible for manifestation of diseases. In order to cure the disease, it is essential for a physician to understand the Nidanas according to present era. Therefore, an attempt has been made to analyze the Nidanas mentioned in classics and its relevance in modern day lifestyle.

Material and Methods

Each Nidana explained by Acharya Yogaratnakara⁵ and its

assessment in present lifestyle is being explained under headings of present era, vitiated Doshas and the resultant disorders.

1. **Avashyaya (Exposure to Mist and Snow)** - Excessive contact with cold or humid weather is Avashyaya, especially during winter season it causes vitiation of both Vata and Kapha Doshas because of its Sheeta property. After Nidana Sevana, ear which is already vitiated by Vatadi Doshas leads to increased Kleda Bhava of Mamsa and Rakta which facilitates the growth of Krimi in Karna it 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 also when body is exposed to a cold environment, the initial physiological response of vascular system is peripheral vasoconstriction. This shunts blood from extremities to the core, ensuring perfusion and oxygenation of vital organs and reduction of heat loss. Sustained subjection of 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 is presented 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.⁷
 - Present era - Intake of cold items, continuous use of air conditioner and early morning exposure to the mist.
 - Vitiated Doshas - Kapha and Vata
 - Resultant disorders - Karnashoola (otalgia), Krimikarna (otomycosis), frostbite
2. **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. The underwater diving may lead to Avarana of Vata in the ear resulting in discharge that is called Karnasrava. Karnashoola can also be seen as a symptom of Srava.⁸ During underwater diving the Eustachian tube is not able to maintain middle ear pressure at surrounding atmospheric level. At time of rapid descent in underwater diving, this disequilibrium causes middle ear Barotrauma. The pressure in middle ear gradually becomes less than ambient pressure and Eustachian Tube (ET) should open to equilibrate these pressures. A pressure difference

greater than 90 mmHg is created, if the diver continues to descend beyond 1.4 meters' depth, ET is locked. This sudden negative pressure causes retraction of tympanic membrane, hyperemia, engorgement of vessels and hemorrhages. This phenomenon can also occur during uncontrolled ascent. Sometimes when these pressure changes are transmitted to cochlea through round and oval windows, inner ear barotrauma occurs. The stapes footplate and associated ligaments provide additional support to oval window compared to round window through these pressure changes. When high pressure air is forced into middle ear space, it causes rapid outward displacement of stapes and inward displacement of round window membrane. The disruption of Reissner's membrane and basilar membrane can happen due to this high pressure wave.⁹

Similarly, in case of bathing or swimming, presence of moisture, humidity and water in ear canal allows infection to grow as the protective lining i.e. cerumen gets removed and increase of pH takes place. Among divers, shortly after immersion in water 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 ear canal of those diagnosed with otitis externa among them *Pseudomonas aeruginosa*, *Staphylococcus epidermidis* and *Staphylococcus aureus* are most common.¹⁰

- Present era - Swimming, water sports, under water diving
 - Vitiated Doshas - Kapha and Vata
 - Resultant Disorders - Karnashoola (otalgia), Karnakandu, Karnasrava (otorrhoea)
3. **Karnakanduyana (to itch)** - By Sevana of Kapha Prakopaka Nidana, accumulated vitiated Kapha dosha in the ear canal produces severe itching sensation and inflammation. The continuous itching can also cause Karna Vidradhi. Itching in ear can be a sign of serious illness, if the examination of the ear does not reveal any significant clinical findings. It can be related to the number of causes like.
 - Acid eructation - with each episode patient complains of itching in both ears
 - The caries tooth without much pain may produce itching in ears
 - Temporomandibular joint pathology
 - Itching associated with blocking sensation of ear, mostly preceded by an attack of rhinitis¹¹

Sometimes, scratching of ear causes abrasions resulting in swollen and tender skin leading to accumulation of debris or pathogens. Ear pain and purulent discharge also occur and if further neglected it can lead to infection of the ear.

- Presentera - Continuousscratchingofear
- Vitiated Doshas - Kapha and Kaphavata
- Resultant disorders - Karnakandu, Karna Vidradhi (abscess in the ear)

4. **Mithyayogenashastrasya** - In electrocochleography (used to cochlear function) atympanic needle electrode is passed through ear drum, causing perforation of membrane. In children improper karnavyadhana samskar¹² can lead to inflammation of local area along withpain. The improper piercing cause injury to Siras present in 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 earlobe or helix. It causes injury to skin, sub dermal fat and to the surface of 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 abnormal proliferation of scar tissue at the site of cutaneous injury. This causes itching, pain, cosmetic deformities which leads to psychological distress to patient.¹³

To remove impacted wax, excessive and unwise use of cotton bud is used by some people which cause discomfort, vertigo and conductive hearing loss. The self-cleaning of ear canal occurs by epithelial migration from tympanic membrane, aided by movements of temporomandibular joint. Sometimes if a sharp instrument like hair pins are used it can also cause injury to external auditory canal or perforation of tympanic membrane which may further lead to otitis externa.¹⁴

- Present era - Improper instrumentation by the surgeon or individual
- Vitiated Doshas - Pitta
- Resultant Disorders - Karnapaka, Karnashoola, Karnapartinaha (Tympanic Membrane Perforation), Karna paligata rogas

5. **Pratishyaya** - The disease occurs by Vega sandharana, Ajeerna, Raja, Atibhashya, Krodha, Rituvaishmya, Shiroabhitapa, Prajagara, Atiswapna, Ambusheeta, Maithuna, Avashyaya, Dhooma. These factors lead to the aggravation of Vata Dosh¹⁵ and other Doshas individually or collectively. ¹⁶ If condition of Pratishyaya is not treated or ignored for a longer period of time then diseases like Apeenasa, Badhirya, hata occur. With prevalence of 10-30%, allergic rhinitis (AR) is the most common allergic disorder. Because of the close anatomical relationship between ET and nasopharynx, allergic disorders such as AR may cause ET dysfunction by inflammation and swelling in this region.¹⁷ 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.¹⁸

- Present era - Recurrent rhinitis
- Vitiated dosha - Kapha
- Resultant shoola, Badhirya

6. **Mithyayogenashabdasya** - According to Ayurveda, Shrotendriya originates from Akasha Mahabhoota, Shabda travelling through Vata in presence of Akasha comes in contact with Shrotendriya Adhishtana (karna) and transmitted through Indriya to Shravana Buddhi which is responsible for perception of sound, so Vata plays 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. e. 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 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), a perception that sounds are muffled. When exposure to noise is prolonged or repeated it can cause 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 a period of months or years followed by a slower loss of spiral ganglion neurons.²¹ National Institute of Deafness and Other Communication Disorders have estimated that 15% of present population has got hearing loss due to exposure to loud noise and that may benoise at work, leisure activity or use of mobile phone.

- Present era - Exposure to loud music, extensive use of the ear phones
- Vitiated Dosh - Kapha and Kaphavata
- Resultant disorders - Badhirya, Karna nada (tinnitus)

Maintenance of Healthy Ears Through Ayurveda

Ayurveda lays great emphasis on preservation of health of an individual and prevention of diseases. To maintain the quality of health it includes - Nidanaparivarjana,

Swasthyarakshana and Vikaraprashmana. This can be done by following the principles of Dinacharya.²²

1. Karna Abhyanga²³ - One should apply oil to Shirah-shravana - pada. It is also mentioned that Abhyanga should be done in Manya, Shira, Karna daily, which may prevent Vata Rogas of Karna as it nourishes the sense organs.
2. Karnapoorna^{24,25} - It is a process of filling the ears with Swarasa, Taila, etc to cure the diseases. It is a therapeutic as well as a preventive measure.
3. Nasya²⁶ - Nasya gives purity and imparts strength to Indriyas. The medicine instilled into nostrils will reach the Sringatakamarma, by the Prabhava of drugs it spreads completely over that region and expels the vitiated Doshas from Uttamanga. By practicing this one should not develop Urdwajatravikaras easily.

Further Acharya Sushruta mentions the Chikitsa, once the diseases of the Karna manifests, in every kind of Karnaroga Vata - Prakopa seems to be the chief cause. So Acharyas have mentioned Ghritapana, Rasayanasevana, Brahmacharyapalana along with the avoidance of Vyayama, Shirasnana and Atibhashya are common treatments that have to be followed.²⁷

Pathya and Apathya Ahara and Vihara in Ear Disorders²⁸

- 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

Result and Discussion

In today's fast and advanced life man has become a slave to his habits. The dependency on technology and gadgets has a direct impact on our health. The prolonged exposure to the loud noise and continuous use of headphones lead to ear disorders. As Ayurveda is recognized as the foremost science of life, it describes ways to prevent and manage diseases. It also describes the ear including its disorders and treatments. To avoid diseases one should have a better knowledge of Nidanas. Here, Karnaroga Nidanas has been analyzed according to present lifestyle to have a better understanding. Just following the Nidanas will not directly lead to the diseases but it will first show prodromal symptoms then disease. Therefore, changes should be made in our lifestyle. While adapting to adjustments one can follow the principles of Dinacharya. Amendments in lifestyle through Ayurveda can help us to stop degenerative changes that occur in the ear.

Conclusion

As with all the sense organs the ear's functional part consists of irreversible structures in case of harm done to them. Therefore, a healthy lifestyle must be adopted to combat the damage. The concept of Dinacharya mentioned by the Acharyas should be incorporated in our daily regimes as prevention should be our main objective. Karnapoorna, Abhyanga and Nasya if done regularly helps in strengthening our Indriyas and avoidance of diseases can be done.

Scope of further Studies

Observational research studies with enhanced evaluation of classical and contemporary management for the Karnarogas need to be balanced over and the acceptable solutions to be developed. Proper counseling methods related to Pathya Apathya should be researched and developed that can be incorporated in the lifestyle of an individual. Therefore, a modification in lifestyle according to Ayurveda is the need of this present era.

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