Critical Analysis of Badhirya with special reference to Hearing Loss

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ABSTRACT
Maharshi Sushruta has mentioned 28 types of Karna-Roga in Uttar Tantra and Badhirya is one among them. Badhirya is caused due to the vitiated Vata Dosha or Vatakapha Doshas by deranging or obstructing the Shabdavaha Srotas (pathway of hearing) or Shabdavaha Sira (auditory nerve) or due to negligence of Karnanada etc and gives rise to diminished hearing or incapability of hearing. Deafness is defined as a partial or complete inability to hear. Defect at any level from sound transduction to interpretation can cause hearing loss. Therefore, deafness (hearing loss) can be considered under the caption of Badhirya. In the present study, a review is presented on Badhirya and hearing loss to enlighten the correlation and thus providing an alternative treatment option for hearing loss.

KEYWORDS
Vata, Kapha, Badhirya, Hearing Loss
INTRODUCTION

Shalakya is an important branch of Ayurveda which deals with the diseases manifesting above clavicular region. Aacharya Susrutha is the only person who explained Ophthalmology and ENT in a systematic manner in Uttara tantra portion of his treatise Sushruta Samhita. Aacharya Sushruta has mentioned 28 types of Karna-Roga in Uttar Tantra and Badhirya is one of them. According to Ayurveda, Shrottrendriya originates from Akasha Mahabhoota. Shabda (sound) travelling through Vata in the presence of Aakasha (space) comes in contact with Shrottendriya Adhishthana (Karna) and transmitted through Shrottendriya to the Shravana Buddhi which is responsible for perception of sound. So, Vata plays important role in normal hearing procedure. According to Aacharya Sushruta, vitiated Vata Dosha along with Kapha resides in Shabdanuvaha Sira and in the absence of appropriate treatment the person will suffer from Badhirya without any doubts. Acharya Dalhana comment on this Samprapti that not only Vata Dosha but also Rakta, Pitta and Kapha Doshas also reside in Shabdanuvaha Sira causing Badhirya. According to Aacharya Vagbhatta, Vata associated with Kapha and getting increased or by neglect of Karnanada, gives rise to hearing of loud sounds only, hearing with difficulty and gradually leads to deafness.

Hearing loss or hearing impairment is a partial or entire inability to hear. It can result in hearing conversational speech or loud sounds with difficulty. It can be unilateral or bilateral. Disabling hearing loss refers to hearing loss more than 40 decibels (dB) in the better hearing ear in adults and a hearing loss more than 30 dB in the better hearing ear in children. 'Deaf' people have profound hearing loss mostly which indicates very little or no hearing. They generally use sign language for communication.

Deafness can be divided basically into three types- sensorineural, conductive and mixed. A sensorineural hearing loss results from lesions of the cochlea, VIIIth nerve or central auditory pathways. Conductive hearing loss occurs when there is problem in external or middle ear which interferes with conduction of sound to the inner ear. Mixed hearing loss occurs when both conductive and sensorineural hearing loss are present.

Low and middle-income countries have great number of people with disabling hearing loss. Over 5% of the world’s population or 466 million people have disabling hearing loss (432 million adults and 34 million children). It is estimated that
by 2050, over 900 million people or one in every 10 people will have disabling hearing loss. Approximately one third of people over 65 years of age are affected by disabling hearing loss.

**Nidana**

The specific etiology of each Karnaroga is not mentioned in any Ayurvedic classics, certain common etiological factors of Karnaroga are described which are – Avasyaya, Jalakrida, Karnakandu, Mithya yogensastra, and Pratisyaya. While going through Sushrutha Samhita the following Nidana were described to cause the disease Badhirya which were described in different chapter in the contexts of some special disease or references in different Sthana of Sushrutha Samhita.

- By trauma on Vidhura Marma
- By installing Vishana tail in ear
- By Dosha of Shukra and Shonita in Janambala Pravrita Rogas
- Due to Karnarsha
- Due to hearing of profound sound in Ritu Kala
- Because of Ardita

Causes of hearing loss in modern science are as mentioned in table 1 –

**Table 1 Causes of Hearing loss**

<table>
<thead>
<tr>
<th>Conductive Hearing Loss</th>
<th>Sensorineural Hearing Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Congenital causes-</strong></td>
<td><strong>Congenital causes-</strong></td>
</tr>
<tr>
<td>• Meatal atresia</td>
<td>present since birth due to anomalies of the inner ear or damage to the hearing apparatus by prenatal or perinatal factors</td>
</tr>
<tr>
<td>• Fixation of stapes footplate</td>
<td></td>
</tr>
<tr>
<td>• Fixation of malleus head</td>
<td></td>
</tr>
<tr>
<td>• Ossicular discontinuity</td>
<td></td>
</tr>
<tr>
<td>• Congenital cholesteatoma</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acquired causes-</th>
<th>Acquired causes-</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External ear</strong></td>
<td>• Infections of labyrinth</td>
</tr>
<tr>
<td>Any obstruction in the ear canal, e.g. wax, foreign body, furuncle, acute inflammatory swelling, benign or malignant tumour or atresia of canal.</td>
<td>• Labyrinth or VIIIth nerve trauma</td>
</tr>
<tr>
<td><strong>Middle ear</strong></td>
<td>• Noise-induced hearing loss</td>
</tr>
<tr>
<td>• Perforation of tympanic membrane</td>
<td>• Ototoxic drugs</td>
</tr>
<tr>
<td>• Fluid in the middle ear</td>
<td>• Presbycusis</td>
</tr>
<tr>
<td>• Mass in middle ear</td>
<td>• Ménière’s disease</td>
</tr>
<tr>
<td>• Disruption of ossicles,</td>
<td>• Acoustic neuroma</td>
</tr>
<tr>
<td>• Chronic suppurative otitis media</td>
<td>• Sudden hearing loss</td>
</tr>
<tr>
<td>• Cholesteatoma</td>
<td>• Familial progressive SNHL</td>
</tr>
<tr>
<td>• Fixation of ossicles</td>
<td>• Systemic disorders, e.g. diabetes, hypothyroidism, kidney disease, autoimmune disorders, multiple sclerosis, blood dyscrasias</td>
</tr>
<tr>
<td>• Eustachian tube blockage</td>
<td></td>
</tr>
</tbody>
</table>

**Chikitsa**

Acharya Sushruta has mentioned general line of treatment for Karnaroga. It comprises of Snehana, Swedana, Ghrita pana, Rasayana Sevana, not to do excessive work, to take bath except head, not to indulge in intercourse, not to talk excessively. Acharya Charaka and Acharya Vagbhata had advocated daily Karnapurana to avoid the diseases of the ear. Treatment modalities mentioned for...
Badhirya are Snehavirechana, Raktamokshana, Bastikarma, Murdhabasti, Nasya, Dhupana etc. According to Acharya Vagbhatta poor hearing associated with Sopha and Kleda, should be given Vamana therapy. Deafness found in Bala, Vridha and that persisting for a long time is not treatable.

According to modern science treatment of hearing loss depends on the specific cause if known as well as the extent, type and configuration. Most of hearing loss resulting from age and noise are progressive and irreversible. Some types of hearing loss, mainly conductive types, can be medically or surgically corrected but others cannot. Commonly used treatment modalities for sensorineural hearing loss are properly fitted hearing aids, cochlear implants and other assistive devices.

**Samprapti**

- **Nidana Sevanam**
- **Dosha Prakopanam**
- **Sarva Sroto Prasaranam**
- **Shabdavaha Srotasa Sthana Sanshrayaam**
- **Shabdavahanam Asamarthata**
- **Karna Badhirya**

**Samprapti Ghataka**

- **Nidana**
  - **Vata & Kapha Prakopaka**
- **Dosha**
  - **Vata**
- **Dushya**
  - **Rasa**
- **Srotasa**
  - **Shabdavaha**
- **Sroto Dusti**
  - **Vimarga Gamana**
- **Dosha Marga**
  - **Bahya**
- **Adhisthana**
  - **Karna**
- **Pratyatma Lakshana**
  - **Badhirya**

**Pathyapathya**

Pathya Ahara includes Godhuma, Shali, Mugda, Yava, Patola, Shigru, Vartaka, Sunnishanaka, Kanttilaka, Purana Ghrita and Mamsa of Lava, Mayura, Harina and Kukkuta etc. Patients should practice Brahmacharya and Abhashanam. They should follow Dinacharya and Ritucharya...
including Snehana, Swedana, Virechana, Vamana, Nasya and Rasayana.

Ahara Dravyas predominant in Guru Guna and which leads to increase in Kapha should be avoided. Head bath, vigorous brushing of teeth, physical exertion, exposure to humid climate, scratching the ear etc. should also be avoided.

DISCUSSION

Aacharya Sushruta has mentioned the disease Badhirya under the caption of Karnagata Roga. The vitiated Vata Dosha or Vata Kapha Doshas by deranging or obstructing the Shabdavaha Srotas (auditory canal) or Shabdavaha Sira (vessels) and Shabdavaha Nadi (nerves) or neglecting Karnanada etc. diseases causes difficulty in hearing or incapability of hearing i.e. Badhirya. Therefore Badhirya can be of three types-

Table 2 Types of Badhirya

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Dosha predominance</th>
<th>Involvement of ear parts</th>
<th>Types of deafness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kaphanubandha</td>
<td>Bahya Karna (External Ear)</td>
<td>Conductive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Madhya Karna (Middle Ear)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Vatanubandha</td>
<td>Antah Karna (Internal Ear)</td>
<td>Perceptive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shabdavaha Nadi (Cochlear Nerve and higher center)</td>
<td>(Sensorineural)</td>
</tr>
<tr>
<td>3</td>
<td>Kaphavatanubandha</td>
<td>Bahya Karna (External Ear)</td>
<td>Mixed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Madhya Karna (Middle Ear)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Antah Karna (Internal Ear)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shabdavaha Nadi (Cochlear Nerve and higher center)</td>
<td></td>
</tr>
</tbody>
</table>

All the Nidanas mentioned for Karnaroga vitiates Vata and Kapha Dosha like excessive exposure to Avasyaya and its Sheetatwa property, the function of auditory nerve may be affected, leading to sensory neural deafness. Jalakrida having Seetha in property, lead to Kapha and Vata vitiation which cause imbalance in Na-K-2Cl ion that may lead to abnormality in formation of endolymph and perilymph that may cause neural deafness. Moreover the causes of conductive hearing loss like wax, otitis media, any growth, cholesteatoma etc all have abnormalities of Kapha Dosha.

When there is disturbance in Vata Dosha, sound is not conveyed from ear to brain. In some cases vitiated Kapha obstructs the Vata pathway because of which Vata fails to conduct the sound waves. Therefore the hearing ability of one goes on deteriorating gradually and can be lost completely. Snehana is mentioned in treatment of Badhirya, which can be administered by two ways – external and internal. Karnapurana come under the external snehana. Generally medicated oil is used for Karnapurana as Taila is having virtue of Vata Shamana but do not aggravate.
Kapha. In addition medicine is used as luke warm, so it has beneficial effect not only on Vata but also removes Avarana of Kapha, thereby helps in reducing Badhirya. In all types of Karna rogas, Ghrita Pana is indicated according to Ayurvedic classics. Ghrita Pana comes under internal Snehana. With the administration of Snehana dravyas, the Vayu is eliminated & mridutva in the body is produced. The vitiated Doshas, which obstructs the srotas, are eliminated with the help of snehana\(^2\). It is explained that Nasa being doorway to Shirah, the drug administrated through nostrils reaches Sringata by Nasa Srota and spreads in the Murdha (Brain), taking routes of Netra (eyes), Shrotra (ears), Kantha (throat) Sira Mukhas and removes the morbid Doshas from Urdhwajatrugata completely just like the removing Munja grass from its stem\(^2\). Nasya therapy helps in removal of Srotas obstruction and Shamana of vitiated Doshas. Before the Nasya and Karnapurana, Sthanika Abhyanga and Swedana is given which helps in stimulation of vasodilator nerves which are spread out on the superficial surface of face, this increases the blood circulation to the brain. As mentioned earlier, Badhirya occurs due to vitiation of Vata and Kapha – Pitta- Rakta Doshas which resides in Shabdanuvaha Sira and as per Aacharya Susrutha, in Siragata Vata Raktamokshana is indicated. Therefore Raktamokshana can be an effective therapy in Badhirya. Basti is main treatment modality for Vataja Roga and Badhirya is Vata dominant disease. Similarly Shirobasti helps in pacifying Vata Dosha by giving strength to the nervous system.

**CONCLUSION**

It can be concluded that hearing loss of modern science comes under the caption of Badhirya in Ayurveda. Considering the limitations of treatment in cases of sensorineural hearing loss, presbyacusis, and other varieties of mild to moderate deafness, above mentioned Ayurveda treatment modalities of Badhirya may prove beneficial.
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