

## A CASE STUDY OF KARNANAADA WSR TO TINNITUS

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Article Received on 22/10/2019

Article Revised on 12/11/2019

Article Accepted on 02/12/2019

## ABSTRACT

*Ayurveda* is the science of life. It is one of the most ancient medical science in the world. *Ayurveda* helps people to maintain health by following various do's and don'ts. It is full of different management techniques for various diseases. Sense organs are considered important parts of the body. *Ayurveda* describes these sense organs as *Indriya*. The ear is called *Karna Indriya*. Different *Acharyas* described many preventive measures to keep ear healthy. But even then if diseases occur there are many treatment modalities to cure them. *Karnanaada* is one of the diseases of the ear. It is described as a condition in which one hears sounds like *Bheri*, *Mridang*, etc. In modern science, *Karnanaada* can be correlated with Tinnitus. It is a condition in which there is a perception of sound that appears to originate in the head in the absence of external stimuli. Epidemiologically this disease is present in 38% population below the age of 40 years and 68% population above the age of 40 years. Tinnitus is not merely a life-threatening disorder. It costs quality of life (QoL) by impairing hearing loss of sound sleep and irritation. In this case study patient presented with symptoms of tinnitus. He is treated with *Snehana* and *Brihama*. Patient got 80% relief with this treatment.

KEYWORDS: *Karnanaada*, *Karnapoorana*, Tinnitus.

## INTRODUCTION

**Karnanaada**

*Karnanaada* is a *karna-roga* studied under *urdhavajatrugata vikara*.

The term *Karna* refers to organs which are responsible for the perception of the sound (includes external, middle and internal ear). The term *Nada* or *Ninada* refers to that which produces rhythmic sounds in the ear.

The vitiated *Vata dosha* either entering into other channels or encircled by *Kapha dosha* in *Shabdavaha Srotas* produces different types of sounds<sup>[1]</sup> like *Bheri*, *Mrudanga*, *Shankha*, etc. in the ears is known as *Karnanaada*.<sup>[2]</sup>

The vitiated *Vayu* gets lodged in the *Shabdavaha Srotas*, thereby causing different types of sounds in the ear called as *Karnanaada*.<sup>[3]</sup>

**Nidanas of Karnanaada – (Etiology) General Aspects**

The following are the aetiological factors responsible for the causation of the *Karnanaada Pratishtyaya* (Rhinitis), *Avashyaya* (Exposure to cold wind currents), *Jalakreeda* (Swimming), *Karna Kanduyana* (constant rubbing or irritating the ear with finger or any other instruments), *Mithya yoga* of the *Shastra* (improper usage of

instrument for diagnosis and treatment on the ear), *Atiyoga*, *Ayoga*, *Mithya yoga* of the *Shabda* (Incompletable correlations of sensation of sound (excessive, low, nil) with the organ of hearing) and other factors causing *Vata Prakopa*. Among three *doshas* *Vata* is considered major *dosha* for the causation of *Karnanaada*.

**Clinical features**

*Karnanaada* is described as an independent disease. It is also present as *Lakshana* of other diseases. There are no *Poorvaroopas* explained for *Karnanaada* but it is a *Poorvaroopas* of many *Rogas* for example- *Apasmara*, *Vataja Unmada*, *Grahini*.

**Roopa (clinical features)**

*Nanavidha Shabdan* – Different types of sounds hearing in *Shabdavaha Srotas*, *Vividhanshabda* like *Bheri*, *Mrudanga*, *Shankha*, *Bhrungaara*, *Kauncha*, *Mandoora*, *Tantri*, *Saamturyasvanam* are heard in *Shabdavaha Srotas*.

*Acharya Haarita* explained that *Karnanaad* can be caused by different *dosha* and sounds produced accordingly in the disease. If one hears sounds like crepitus of teeth, flute with burning than it is due to *pitta*

*dosha*. If one hears sounds of thundering its due to *Kapha dosha*.<sup>[4]</sup>

It is also has been explained as *lakshana* of various diseases-

*Vataj jawara, Vataja arsh, Krimij Shiroroga, pandu, Vataj Shiroroga, Sannipataj jawara.*

#### **Samprapti of Karnanaada**

*Hetus*, as described in *Nidana*, causes vitiation of *Vata*. *Vata* gets lodged in the *Shabdavaha Srotas*. It causes a perception of different sounds and causes *Karnanaada*.

#### **Tinnitus**

Tinnitus is the perception of sound in the absence of any external input.

Symptoms can be unilateral or bilateral, present with or without hearing loss, and resemble ringing, hissing, whistling, humming, buzzing, chirping, or clicking sounds.

Tinnitus are often categorised qualitatively as non-pulsatile (typically subjective) or pulsatile (often objective).

Subjective non-pulsatile tinnitus is the most common and is only heard by the patient, whereas objective pulsatile tinnitus can sometimes be heard by an observer and is caused by an internal bodily vibration or noise.<sup>[5]</sup> Tinnitus can affect both physical and psychological well-being, with 1 in 5 patients reporting bothersome tinnitus with decreased sleep, concentration, or mood.<sup>[6]</sup> Increasing tinnitus severity is inversely associated with QoL. For most patients with chronic tinnitus (symptoms for > 6 months), there is no cure, as the symptoms are the result of hearing loss (typically related to age or noise exposure).<sup>[7,8]</sup> Over time, the severity of tinnitus might fluctuate.

Worsening symptoms were rumored in Bastille Day of patients once five years, while 18% noted improvements.

Complete resolution of tinnitus was seen in 16% of patients.<sup>[9]</sup> Factors that affect the expected outcome and QoL in patients with tinnitus include mood disorders such as anxiety and depression.<sup>[10]</sup> The need for increasing masking sounds in the management of tinnitus is also associated with long-term distress.<sup>[11]</sup> Symptoms and causes. Although tinnitus is often considered idiopathic, the most likely causes can be determined from the case history and patient symptoms.

Age-related hearing disorder (presbycusis) and noise exposure stay the foremost common causes.

Nonpulsatile tinnitus: Nonpulsatile tinnitus can have a unilateral or bilateral presentation.

When symptom happens unilaterally, it might result from cerumen impaction, tympanic membrane perforation, chronic otitis media, otosclerosis, or cholesteatomas, all of which can cause conductive hearing loss.

Unilateral tinnitus might also result from chronic noise exposure, acoustic trauma, semicircular canal dehiscence, Bilateral tinnitus is most commonly caused by age-related hearing loss, noise exposure, acoustic trauma, or otosclerosis.<sup>[1,12]</sup> Individuals who are taking or who have taken ototoxic medications, including high-dose acetylsalicylic acid, nonsteroidal anti-inflammatory drugs, aminoglycoside antibiotics (eg, gentamicin), loop diuretics (eg, furosemide), and chemotherapeutics (eg, cisplatin, valproic acid, quinine), might also experience bilateral tinnitus. Moreover, poor sleep and excessive use of caffeine or alcohol can aggravate the severity of tinnitus.

Pulsatile tinnitus: Pulsatile tinnitus can be categorized as either pulse synchronous, where the rhythm of the noise or click is synchronous with the heartbeat (detected at the radial pulse), or pulse asynchronous. Pulse-synchronous tinnitus might have an underlying vascular cause. The most common is idiopathic intracranial hypertension, caused by elevated intracranial pressure that transfers pulsations through the cerebrospinal fluid. Vibrations are transferred to the fluid in the cochlea causing tinnitus.<sup>[13,14]</sup> Arterial bruits and venous hums can also present as pulse-synchronous tinnitus, with an associated "whooshing" sound caused by the turbulent flow of blood in vessels near the cochlea.<sup>[15]</sup>

Moreover, general cardiovascular disease, arteriovenous malformation, aneurysms, and vascular ear tumors such as paragangliomas (eg, Glomus tympanicum and Glomus jugulare tumors) can present with pulse-synchronous tinnitus.

Pulse-asynchronous tinnitus usually has an associated mechanical cause. These are often pulsatile noises owing to spasm or myoclonus of muscles within the middle ear, including the tensor tympani and stapedius muscles.<sup>[16]</sup>

The speedy contraction of the palatal muscles and also the salpinx may additionally manufacture a speedy pulsatile clicking sound.

#### **CASE REPORT**

A patient aged 51 years presented with a complaint that he hears ringing sound in his right ear for the past 5 months. On further enquiry, he explained that sound was high-pitched and non-pulsatile.

There was no associated ear pain or discharge. He additionally explained that there was a progressive decrease in hearing in both ears. This substantially affected his quality of life by disturbing sleep and mood.

Patient Occupational history- worker in textile factory (chronic noise exposure zone) and no history of any discharge, T.M. perforation, any trauma, any surgery, DM, HTN, PTB, ototoxic medications, vertigo, vomiting.

On examination, pulse was 78/min, blood pressure was 128/84 mm of Hg, and respiratory rate was 22/ min.

Examination of Ear- pinnae, pre and post aural area, external auditory canals, and Tympanic Membranes were WNL after that a Qualitative test for hearing by Tuning fork - Rinne's Test- AC>BC (B/L), Weber's Test- lateralized to better hearing ear (Rt.) and ABC reduced (B/L).

The oral cavity proper, Larynx and Nose were also WNL.

#### The Treatment plan for the patient

*Vataja* disorders are best treated with *Snehana*. Properties of *Vata dosha* are exactly opposite to that of *Snehana* as *Karnanaada* is *Vataja* disorder so treatment will be *Snehana*.

*Karnapoorana* is a type of *Snehana*. *Snehana* is regularly indicated for a healthy ear.

This procedure is specially used for the treatment of ear diseases along with its *Brihamana* drugs.

*Brihamana* is required because *Dhatukshya* is also a cause of *Vata* vitiation.

#### MATERIAL AND METHOD

1. *Karnapoorana* with *Mahamasha taila* (after sunset) for 7 days.
2. *Shamana Aushadha*.
- A. *Mahavatavidhwansa* rasa- 250 mg., *Tankana Bhasma*- 250 mg., *Giloya Satva*- 500 mg., *Godanti Bhasma*- 500 mg., (With honey early morning and in the evening).
- B. *Ashwagandha Churna*- 3 gm. (with lukewarm milk twice a daily).
- C. *Balarishtama*- 20 ml. (with equal water twice a day).

**Follow-up:-** three follow up at the difference of one week.

#### The procedure of *Karnapoorana*

*Karnapoorana* is described as a preventive measure for ear diseases and a treatment modality. It is a process in which the ear is filled with lukewarm *Taila*, *Swarasa*, *Sneha-dravya* or *Gomutra*, etc. *Karnapoorana* comes under the external type *Snehana*. *Acharya Vagbhata*<sup>[17]</sup> and *Shaarangadhara*,<sup>[18]</sup> have described the procedure of *Karnapoorana*.

Indulging daily in *Karnapoorana* can prevent *Vata-roga* of *Karna* including *Karnashoola*, *Karnanada*, *Badhirya*,<sup>[19]</sup>

The entire procedure of *Karnapoorana* broadly can be divided into 3 steps.

#### 1. *Purva Karma*

- The patient should made to lie down on the right or left lateral depending on the affected side.
- Gentle massage with lukewarm oil around the ear for a short period should be done.
- Mild hot fomentation around the ear should be done.

#### 2. *Pradhana Karm*

- The medicated liquid (oil) should be gently warmed by keeping in lukewarm water.
- The external auditory canal should be straightened by pulling the pinna backward and upwards.
- The liquid (oil) should be poured in drops till the ear canal is filled up.

#### *Dharana Samaya*<sup>[17]</sup>

*Tailadi Dravya* – After sunset

- The root of the ear should be gently massaged to potentiate the action of the drug.
- The medicated oil should be retained in the same position for 100 *Matras* (5 minutes).

#### Indication of *Dharana* according to disease<sup>[17]</sup>

In *Karnaroga* – 100 *Matra*

#### *Dhaaranakala*<sup>[20]</sup>

- In painful diseased condition - Till pain relieves.
- In *Swastha* - Hundred *Matra* (approx. 5 minutes).

#### 3. *Pashchata Karma*

- The excess oil should be taken out of the external auditory canal by dry cotton.
- After retaining the medicated oil for the prescribed time, the ear should be cleaned with dry cotton mopping.
- In bilateral cases, the same procedure should be repeated in the fellow ear also.

With the administration of *Snehana Dravyas*, the *Vayu* is eliminated and *Mridutva* in the body is produced. This finally results in the removal of *Malasanga*. The vitiated *Dosha*, which obstructs the *Srotasa*, is eliminated with the help of *Snehana*.

#### RESULT

After every follow-up patient reported slight comfort and improvement. After 21 days patient came for follow up and explained that his problem is not completely cured but he has 70 to 80% relief. His hearing loss is improved with a sound sleep. Previously he used to be irritated due to lack of proper sleep now he is relaxed.

He is asked to maintain a healthy and noise-free workplace. He is advised to take healthy food and stay away from stressful situations.

#### Probable Mode of Action

**A. Karnapoorana of the patient** is done with *Mahamasha taila*. Main-content of *Mahamasha taila* is mungo beans and sesame oil. Based on these contents most probable mode of action can be explained.

**1. Mungo beans:** contain aspartic acid which plays an important role in hormone production and thus helps the nervous system to work properly.

The second major substance found in mungo is glutamic acid it helps in protein production which is said to be helpful in learning and memory production.

**2. Sesame:** oil is a chemical composition that says it is also rich in glutamic acid, potassium, copper, choline, etc.

The action of glutamic acid is already explained. potassium is a mineral that helps to control blood pressure which is one of the important causes of tinnitus.

Copper improves the immune system thus overall health is affected.

Choline is similar to Vit. B12.

*Karnapoorana* itself is a *Vatashamaka* process when given with *Mahamasha taila* it becomes more helpful. *Snehana* (oil) has the best action on *Vata* diseases and *masha* itself is *Brihaghana* which causes *Shamana* of *Dhatukshya Janya Vata Vyadhi*.

**B. Mahavatavidhwansaka rasa** has established *Vata shamana* property.

**C. Tankana Bhasma, Giloya Satva, Godanti Bhasma** are jointly very good antimicrobial drugs and they also boost immunity.

**D. Ashwagandha Churna** is a drug that is *Brihamana*, general body tonic and mood elevator which is very helpful in old age and depressed people.

**E. Balarisht** is *Vatashamaka*.

#### DISCUSSION

Ayurveda is a science that emphasizes not only the treatment of disease but there is more importance given to the prevention of disease.

*Karnanaada* is a disease caused by vitiated *Vata*. There are many causes described which are responsible for the occurrence of disease. Specific Hetus for *Karnanaada* is *Jalakreeda, Karnakandu, Mithya Yoga* of *Shastra*, etc. Other factors responsible are *Ratrijagaran, Ati-Vyayama,*

*Pramitashna*, etc. Lack of proper diet causes *Dhatukshya* which ultimately causes *Vata Prakopa* and when *Vata* goes to *Shabdavaha Srotas* it causes *Karnanaada*. The patient hears sounds like *Bheri, Mridang*, etc.

Tinnitus can be correlated with *Karnanaad* because of the similarity in clinical features. Tinnitus is a disease in which one hears ringing, Tapping sound in the ear. There are many causes of tinnitus stress, loud noise, hypertension, lack of proper diet and sleep, weak immunity, etc.

When it comes to prognosis of disease *Karnanaada* can not be cured completely but its associated symptoms can be relieved by using various procedures and drugs.

Treatment of the disease is first of all preventive measures that should be considered. Patients should be advised to take proper food and sleep and to follow a healthy lifestyle. Treatment of underlying cause must be done first.

In *Ayurveda*, there are lots of procedures and medicines which can be given to patients for treatment. In the case of *Vataja* disorders like *Karnanaada, Snehana karma* is considered as the best procedure because of its tremendous effects on *Vata dosha*. *Karnapoorana* is the type of *Bahya Snehana*. *Mahamash taila* is a very good *Vatashamaka* drug as it is prepared with *Sneha* along with other *Dravya* which acts especially as *Vatashamaka*.

*Dhatukshya* is also considered as a cause of *Karnanaad* so *Brihaman* given *Ashwagandha* and *Balarisht*. *Ashwagandha* also acts as a stress reliever.

#### CONCLUSION

In the present case-patient having symptoms of *Karnanaada* treated with *Vata Shamaka Chikitsa*. *Karnapooran* given with *Mahamasha taila* as a process of *Bahya Snehana* along with oral medications which are potent *Vata* pacifiers and *Brihaman* in nature. *Mahamasha taila* contains drugs that are very effective in *Vataja* disorders. *Shamana* medicines given to the patient are *Ashwagandha, Giloya, Tankana* has immunity booster effects which are beneficial in *Karnanaada* as weak immunity is also considered as a contributing factor in the occurrence of *Karnanaada*. *Vatavidhwansaka rasa* as the name suggests is strong *Vata Shamaka Aushadha* known for ages. *Balarishta* is useful in this situation because *Bala* has *Brihamana* property and preparation in the form of *Arishtam* adds to its *Vata Shamaka* action.

In the modern era, people follow an unhealthy lifestyle which is the cause of many disorders. Our environment where we live and where we work should be healthy. In the case of tinnitus noise-free places should be opted to work. *Ayurvedic* literature also mentioned that *Atiyoga* and *Ayoga* of *Indriya* should be avoided. Prevention

should be given prime importance in the management of the disease.

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