

**Ayurvedic management of otosclerosis - A Case report**  
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**Abstract:**

*Otosclerosis* is a term derived from oto, meaning “of the ear,” and sclerosis, meaning “abnormal hardening of body tissue.” The condition is caused by abnormal bone remodeling in the middle ear. Bone remodeling is a lifelong process in which bone tissue renews itself by replacing old tissue with new. In *otosclerosis*, abnormal remodeling disrupts the ability of sound to travel from the middle ear to the inner ear. A Hindu, married 50 yr old Female patient visited the outpatient department of Institute with complaint of Diminished of hearing in both ear (Left ear > Right ear), Ringing sensation in both ear & Blocking of both ear. The patient was diagnosed as case of *Otosclerosis* with clinical findings & Investigations done.

*Tablet Lakshadi guggulu 2TDS (each 250mg), Tablet Amarsundari Vati 2TDS (each 250mg), Powder combination of Aamalaki churna (1gm) + Ashwagandha Churna (1gm) + Punarnava Churna (500mg) + Jatamansi Churna (500mg) + Sunhi churna (250mg) + Godanti churna (250mg) And Symp Dashmooladi Kwath 10ml TDS* were administered for 6 months. After the 6 months treatment, a significant response in various symptoms such as Diminished of hearing, Ringing sensation & Blocking of ear was found.

## Introduction-

*Otosclerosis* is a term derived from oto, meaning “of the ear,” and sclerosis, meaning “abnormal hardening of body tissue.” The condition is caused by abnormal bone remodeling in the middle ear. Bone remodeling is a lifelong process in which bone tissue renews itself by replacing old tissue with new. In *otosclerosis*, abnormal remodeling disrupts the ability of sound to travel from the middle ear to the inner ear. *Otosclerosis* is the most common cause of middle ear hearing loss in young adults. It typically begins in early to mid-adulthood. It is more common in women than in men. The condition may affect one or both ears. Risks for this condition include pregnancy and a family history of hearing loss. Caucasians are more likely to develop this condition than people of other races. In the Caucasian population the estimated prevalence is between 0.3% and 0.4% but this is thought to be less in the Asian population.

However, there is a dearth of high level studies evaluating the incidence and prevalence of *otosclerosis* in the non-Caucasian population. The sex incidence of *otosclerosis* in India is much common for men than women. This is in contrast to the general accepted view that *otosclerosis* is more common in women than in men. *Otosclerosis* affects about 1 or 2 people in India out of every 100. It may however sometimes develop in young children as well. It is a problem which causes gradual hearing loss. Currently, there is no effective drug treatment for *otosclerosis*, although there is hope that continued bone-remodeling research could identify potential new therapies. Mild *otosclerosis* can be treated with a hearing aid that amplifies sound, but surgery is often required. In a

procedure known as a stapedectomy, a surgeon inserts a prosthetic device into the middle ear to bypass the abnormal bone and permit sound waves to travel to the inner ear and restore hearing. Hearing aids & *stapedectomy* work well for some while for others; it may not be a perfect solution due to many reasons. In classics of Ayurveda this ailment has been described as *Badhira* under the heading of ear diseases. *Vatahar Chikitsa (Neuroprotective Treatment) & Asthidhatu poshak (Bone-healing)* Chikitsa is one of the major treatments for *Otosclerosis*. Clinical observation has shown its effectiveness in the management of Hearing loss.

## Case Report-

A Hindu, married 50 yr old Female patient visited the outpatient department of Institute OPD No. 201719479, with complaint of Diminished of hearing in both ear, Ringing sensation in both ear & Blocking of both ear. The patient was diagnosed as case of *Otosclerosis* with clinical findings & Investigations done.

A history of the present illness revealed that the patient was apparently normal 5 year back. Gradually he experienced the above said symptoms in her Right ear. The problem increased day by day, and the patient consulted his family physician & was on internal medicine which does not relieve the condition for a time being. After 1 month, the patient experienced frequent ringing sound in ear, increased deafness & Blocking of ear. Hence, the patient consulted ENT surgeon where the patient was diagnosed as Right ear *otosclerosis* disease. The patient was undergone surgery (*Stapedectomy*) for her right ear

3.5 year back , but the hearing loss cured by some extent and the disease does not cured completely. After 6 month same symptoms was found by patient in her left ear too. Again she visited ENT surgeon who diagnosed it as otosclerosis now in left ear And advise for surgery. The patient was not willing to go for operation again, so she visited Our opd for ayurvedic treatment . After doing clinical otoscopic examinations , Radio-logical investigations ( x ray mastoid Schullers view) & Hearing Test( Pure tone Audiometry & Impedance Audiometry) was diagnosed with otosclerosis(karnabadhira).

The personal history revealed that the patient is vegetarian . Patient was not addicted to any addiction . There was genetic linkage of the disease observed in the family ,her mother was suffered from same diseased & Operated for it.

The general examination of patient showed pulse rate of 76/min, respiratory rate of 21/min ,blood pressure of 130/90mm of Hg & body weight of 52 kg.

Otoscopic examination of Tympanic membrane showed Bilateral sclerosis With retraction of Tympanic membrane (Homograft Tympanic Membrane in Right ear). Tuning fork test revealed positive Rinne's test for right ear & Negative Rinne's test for left ear while Weber's test showed sound lateralised to left ear. Which showed that patient having conductive deafness in left ear. Audiological Examination (Pure tone Audiometry) showed mild conductive hearing loss in right ear & Moderately severe hearing loss in left ear . Based on clinical examination, the patient was diagnosed as a case of otosclerosis.

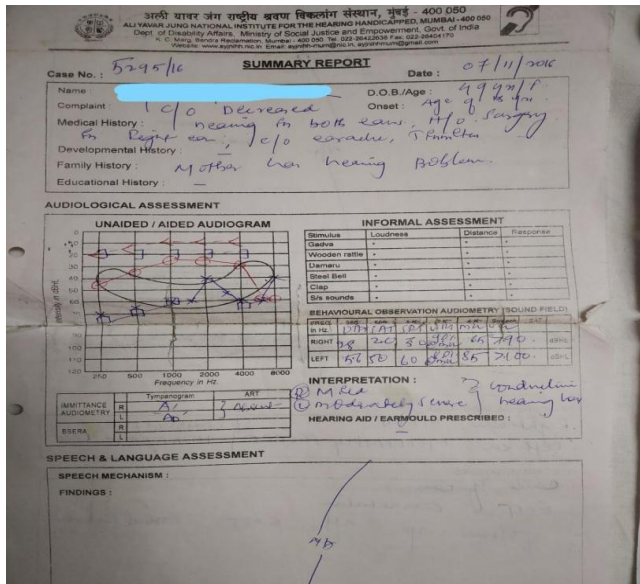
The following oral medicines were administered for 3 months.

- *Tablet.Amarsundari Vati 2TDS (each250mg)*
- *Tablet.Lakshadi guggulu 2TDS(each250mg)*
- Powder combination of following medicines= 1tsf two times daily
  1. *Aamalakichurna(1gm)*
  2. *AshwagandhaChurna(1gm)*
  3. *PunarnavaChurna(500mg)*
  4. *jatamansiChurna(500mg)*
  5. *Sunthi churna(250mg)*
- *Syrup Dashmuladi Kwath10ml TDS.*

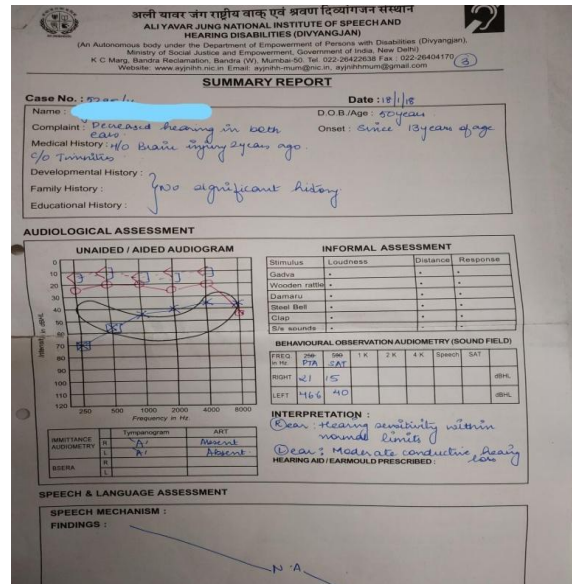
The medicines were procured from outside *Ayurvedic* pharmaceutical shop. Follow up was taken once in 15 days for 6 months.

On the first follow up ,the patient was reported reduction in the symptom of blocking of ear. Ringing in ear were seen once in 4 days or occasionally. Improvement was noted in general sound sleep , anxiety. After 6 month of treatment with above medication patients Audiometry report showed hearing Acuity within normal limit for right ear & Moderate conductive hearing loss for left ear. So Hearing loss from Moderate to Moderately High After 3 month of treatment reduced to mild Hearing Loss which showed reduced hearing loss from previous report.

The patient was on follow up till 1 months, without any single episode of relapse.



BEFORE TREATMENT AUDIOGRAM



AFTER TREATMENT AUDIOGRAM

## Discussion-

Otosclerosis is most often caused when one of the bones in the middle ear, the stapes, becomes stuck in place. When this bone is unable to vibrate, sound is unable to travel through the ear and hearing becomes impaired. According to Ayurved, the patient was diagnosed as a case of *Badhira* with main dosh being *Vata* and *Dhatu dushti* of *Asthi* & *Majja*. Hence the line of treatment mainly includes Neuro-protection, antioxidation & *Asthidhatu poshak* (Bone-healing).

The patient has advised to avoid noisy environment & avoid water entry into ear. The property of *Amarsundari Vati* acts Oto-neuroprotective by virtue of its *Vatashamak* & *Majjakshobhshamak* properties. *Amarsundari vati* acts as *Vatanadishamak* due to *vatashamak* ingredients present in it. It also has potent antioxidant effect. *Amarsundari Vati* is

acidic in nature, excess of hydrogen ions are useful for capillary circulation. Increased  $H^+$  ions concentration dilate the capillary. As *Amarsundari Vati* is having excess of  $H^+$  ions concentration it causes dilatation of capillary. The powder combination medicine are also acts as Neuro Protective. The powder combination acts as Rejuvenating to Vestibulo-Cochlear Nerve, Also acts as Anti-inflammatory reducing degenerative condition of ossicular bone & Nerve. *Tablet Lakshadi guggulu* having contents which are acts as Osteo Protective & helps in healing condition of ossicular bones.

Syp. *Maharasnadi Kwath* produces vasodilatation, reduces pain & inflammation. Improves functional efficiency of affected part. Reduces stiffness of Ossicular Joints & makes



them freely mobile for their proper functioning.

### Conclusion-

Based on clinical signs & symptoms , The disease Presbycusis can be correlated to ayurvedic *Badhira*. In this study Tablet *Lakshadi guggulu* 2TDS (each 250mg) Tablet *Amarsundari Vati* 2TDS (each 250mg), Powder combination of *Aamalaki churna* (1gm) + *Ashwagandha Churna* (1gm)+*Punarnava Churna* (500mg)+ *Jatamansi Churna*(500mg)+ *Sunthi churna*(250mg)+ *Godanti churna* (250mg) And *Syp Dashmooladi Kwath* 10ml TDS was found to be safe & effective in the management of Otosclerosis (*Badhira*).

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