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**Published paper's title :
Assessment of Sensorineural
hearing loss: a review**

**Author : Dr Vishwambhar Singh, M.B.B.S.,
M.S. (ENT), IMS, BHU, Varanasi.**

Review Paper

Assessment of Sensorineural hearing loss: a review

Dr Vishwambhar Singh

Declaration

The Declaration of the author for publication of Research Paper in Asian Journal of Modern and Ayurvedic Medical Science (ISSN 2279-0772) I Vishwambhar Singh the author of the research paper entitled Assessment of Sensorineural hearing loss: a review declare that , I take the responsibility of the content and material of my paper as I myself have written it and also have read the manuscript of my paper carefully. Also, I hereby give my consent to publish our paper in ajmams , This research paper is my original work and no part of it or it's similar version is published or has been sent for publication anywhere else.I authorise the Editorial Board of the Journal to modify and edit the manuscript. I also give my consent to the publisher of ajmams to own the copyright of my research paper.

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ABSTRACT *Sensorineural hearing loss (SNHL) has varied aetiology and its diagnosis is challenging. Though many modalities for assessment are available none is a full proof, a battery of investigations is required to reach a final diagnosis. This paper looks into approach to reach the final diagnosis of SNHL.*



INTRODUCTION

Primarily the function of the ear was balance which gradually also adapted for function of hearing with the evolution and branchial structures which were basically useful in lower animals for oxygen exchange took over as organs for hearing impendence. The ear is a marvellously complex and sensitive organ. Unfortunately, damage to the organ, whether through disease, physical insult, long term exposure to excessive noise or simply the effects of aging, can cause the ear to malfunction. The result of malfunction is usually to produce some degree of deafness.

Hearing is one of the primary senses of human being its loss lead to some degree of deterioration in the quality of life. Thus assessment of hearing becomes one of the most important duties of an otorhinolaryngologist. The hearing loss may be

1. Conductive.
2. Sensorineural.
3. Mixed.

Sensorineural hearing loss may be congenital or acquired. Whatever the cause may be but it would be result of insult to cochlea or auditory nerve and its central connections.

HISTORY AND EXAMINATION

A proper history and examination commonly points towards a diagnosis, so it must be done carefully. The duration, laterality, chronicity and hearing loss from patients prospective must be enquired into. Associated symptoms of aural fullness, tinnitus, discharge, vertigo, dizziness, otalgia, headache must be sought. Other systemic complains must be assessed.

Surgical history, trauma, history of ototoxic drug intake and exposure to occupational or accidental noise must be taken. Family history of losses must be sought into.

General physical examination must not be missed, it can be helpful sometimes directly. Otoloscopic examination of ear to rule out asom, csom, neoplasm or other external and middle ear disorder may be limited value but required. The tuning fork test can help us to know type and severity of hearing loss.

HEMATOLOGICAL INVESTIGATIONS:

These include complete blood count, blood sugar, renal function test, thyroid function, VDRL or FTA-ABS, autoantibody testing as required by hints from history and examination.

AUDIOLOGICAL BATTERY OF INVESTIGATIONS:

Pure tone audiometry

It is subjective test for evaluation of hearing but still most reliable one. It helps us to know the degree and type of hearing loss and so the threshold of a particular patient.

Tympanometry and acoustic reflex

To provide more clues to diagnosis, and excluding possibility of a conductive component in patients with profound or bilateral losses in presence of masking dilemma. The integrity of reflex arc also provides insight into the same.

Brain stem evoked response audiometry

The test to study the auditory pathway from cochlear nerve to brainstem (I; e: retro cochlear). The five waves their latency, interpeaklatency and amplitude provides information about sight of lesion and sometimes its nature. It has limited value in diagnosing small acoustic neuromas, investigation of choice in such cases is t2 weighted fast spin echo MRI > gadolinium enhanced standard MRI. Though these being expensive, BERA screen may be performed initially.

Others



Electrocochleography allows measurement of cochlear microphonics, summing and action potential auditory nerve (SP:AP ratio is often elevated in case of Meniere's disease). Otoacoustic emissions can inform about functional status of outer hair cells of cochlea. Vestibular function testing is important aspect to be evaluated in cases of meniere's disease. Recently introduced Auditory Steady State Response (ASSR) can be used to objectively predict frequency specific hearing threshold in all patients irrespective of age, mental state and degree of hearing loss. Radiological investigations like MRI and CT scans are required sometimes.

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