

Hearing loss

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Acute hearing loss

Acute hearing loss is a common issue and it is important to identify the cause. For example, conductive hearing loss is often due to relatively non-urgent causes (e.g. infection, wax impaction, and foreign bodies). On the other hand, sensorineural hearing loss can be due to more sinister or emergent causes (e.g. stroke, tumour, and autoimmune disease).

In this podcast, Dr Joel Hardman talks to James about the differentials, how to evaluate the patient, and shares some example cases.

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About Dr Joel Hardman

Dr Joel Hardman graduated medicine from the [University of Sydney](#) in 2010. He completed his internship and residency at Westmead Hospital, NSW. Joel has completed two years as a Senior Resident Medical Officer/Unaccredited General Surgery and two years in [Ear Nose and Throat Surgery](#). Joel completed his Masters in microRNAs in papillary thyroid cancer at the University of Sydney in 2016, was the Ear Nose and Throat Senior Resident Medical Officer at Royal Prince Alfred Hospital last year and is currently working as a Registrar at Sydney Adventist Hospital.

Hearing loss

With Dr Joel Hardman, ENT Registrar at Sydney Adventist Hospital, Sydney, Australia

Introduction

Hearing loss is a common issue with a range of differentials, both otological and non-otological. It is important to be able to assess and differentiate between conductive hearing loss, which is often due to relatively non-urgent causes (e.g. infection, wax impaction and foreign bodies), as opposed to sensorineural hearing loss, which can be due to more sinister or emergent causes (e.g. stroke, tumour, autoimmune disease).

Case 1

You are asked to review a 67-year-old gentleman admitted with an infective exacerbation of COPD and numerous cardiovascular comorbidities. He is reporting new right-sided hearing loss with associated tinnitus.

1. Initial questions over the phone?

- Any focal neurological signs e.g. slurred speech – this would require a more urgent review to exclude stroke

2. Possible differentials

- Most likely conductive hearing loss secondary to a middle ear effusion which can occur with upper/lower respiratory tract infections
- Gentamicin ototoxicity
- Thrombo-embolic or microvascular event given cardiovascular risk factors

3. Assessment

- **History**
 - Characterise hearing loss – which ear, duration, onset, fluctuant or constant
 - Ear symptoms – pain, discharge
 - Associated symptoms – dizziness/vertigo, visual changes, sensory/motor changes
- **Examination**
 - Full neurological examination, including cranial nerves
 - Ear examination
 - Observe externally for features of infection
 - Tuning fork tests
 - Weber test – place tuning fork on midline of forehead, assess for lateralization of sound: if lateralized to bad ear, suggestive of conductive hearing loss (conduction issues masks ambient noise, therefore tuning fork sounds louder); if lateralized to good ear, suggestive of sensorineural hearing loss
 - Rinne test – place tuning fork on mastoid process then in front of ear to assess air vs bone conduction: In conductive hearing loss, bone > air conduction
 - Can also assess hearing without tuning fork i.e. whisper test – whisper number into one ear while rubbing tragus of

- other ear
- Otoscopy if able
 - Important to position patient properly – have them sitting up, pull pinna posteriorly
 - Be gentle
 - Try changing angle slightly if unable to see much

4. Investigations and management

- In this case, conductive hearing loss most likely related to a middle ear effusion
 - Further investigations not necessarily required
- Management would involve supportive measures and treating the associated infection, however would not necessarily commence antibiotics for the ear infection itself as will likely self-resolve
- Consider referral for hearing testing / specialist involvement if:
 - No improvement in a few weeks
 - Recurrent ear infections
 - Any concern re: possible complications e.g. mastoiditis, intracerebral abscess

Case 2

A patient with a history of atrial fibrillation incidentally reports acute hearing loss with associated vertigo and is found to have sensorineural hearing loss on examination.

Important to rule out stroke and involve neurology team

Case 3

A patient reports sudden sensorineural hearing loss over 24 hours associated with tinnitus on a background of Grave's disease.

Keep in mind a broad differential, particularly if not obviously a simple cause (e.g. infection, obstruction) and stroke has been ruled out

Other causes – idiopathic, tumours within the ear, autoimmune, multiple sclerosis

5. Treatment of sudden onset sensorineural hearing loss

- There is a role for high dose steroids (i.e. 1mg/kg/day up to 60mg/day of prednisone for 1 week); can also be given via intratympanic injections of steroids

if not tolerating orals or no improvement after 1 week

- Antivirals not routinely given



Take home messages

- Think of non-otological causes first as these can be urgent
- Differentiate between conductive vs. sensorineural hearing loss to help guide need for investigations and treatment

Related Podcasts

- [Sore ear](#)
- [Vertigo and dizziness](#)
- [Stroke](#)

Tags: #acute hearing loss,#conductive,#ear effusion,#foreign body,#hearing,#hearing loss,#sensorineural,#wax impaction