

Case 7:



EDINBURGH UNIVERSITY
EAR NOSE & THROAT
SOCIETY

The Edinburgh ENT Soc cases have not been proofread by any professionals or members of the medical school. They have been made based on the guidelines available at the time.

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A 37-year-old man presents to your clinic complaining of slightly muffled hearing, struggling to clearly hear speech.

The hearing change began rapidly 2 days previously and he has no other symptoms. The change to his hearing is bilateral.

He is diagnosed with **sudden sensorineural hearing loss (SSHL)** and investigated further.

Question 1: What are the potential causes for the sensorineural hearing loss in this man?

Question 2: What parts of the hearing apparatus is affected in sensorineural loss?

Question 3: What investigations are needed in this case?

Question 4: What is the most common treatment for sensorineural hearing loss across all causes?



Answers:

Non-exhaustive list of SSHL causes:

- Infections: viral infection
- Head trauma: surgery, concussion
- Autoimmune diseases : Multiple Sclerosis
- Drugs: gentamicin, chemotherapeutic agents
- Ischaemia: stroke
- Disorders of the inner ear: Meniere's disease
- Metabolic: Diabetes Mellitus
- Neurologic: migraine

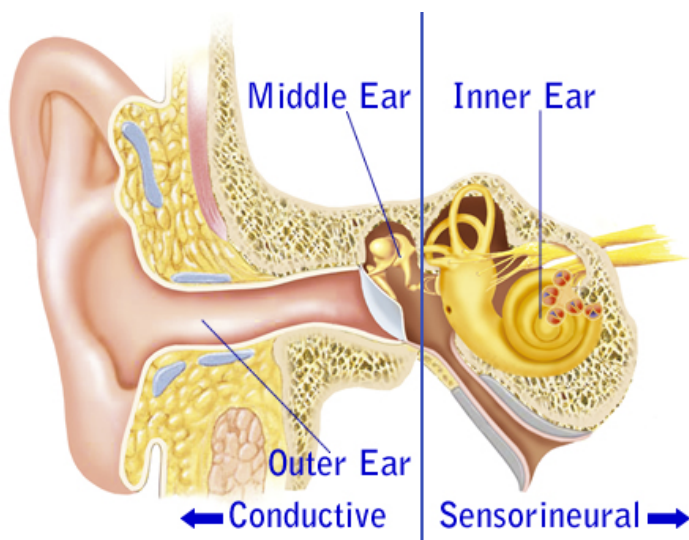
While all these causes can cause SSHL, due to the bilateral symptoms with a short onset and a first presentation, **a viral infection** is the most likely cause in this case.

It is important to ask in the history if the patient has had previous episodes of hearing loss in the past as although it is very rare, hearing loss can be one of the first presentation of MS.

SSSL is defined as a loss of 30dB or greater over at least three contiguous audiometric frequencies occurring within a 72hr period. The most common age group to be affected are patients aged between 30 and 60 years old.

Pathophysiology:

SSSL is caused when sound is not transmitted by the inner ear or auditory nerves or interpreted by the brain.



Investigations:

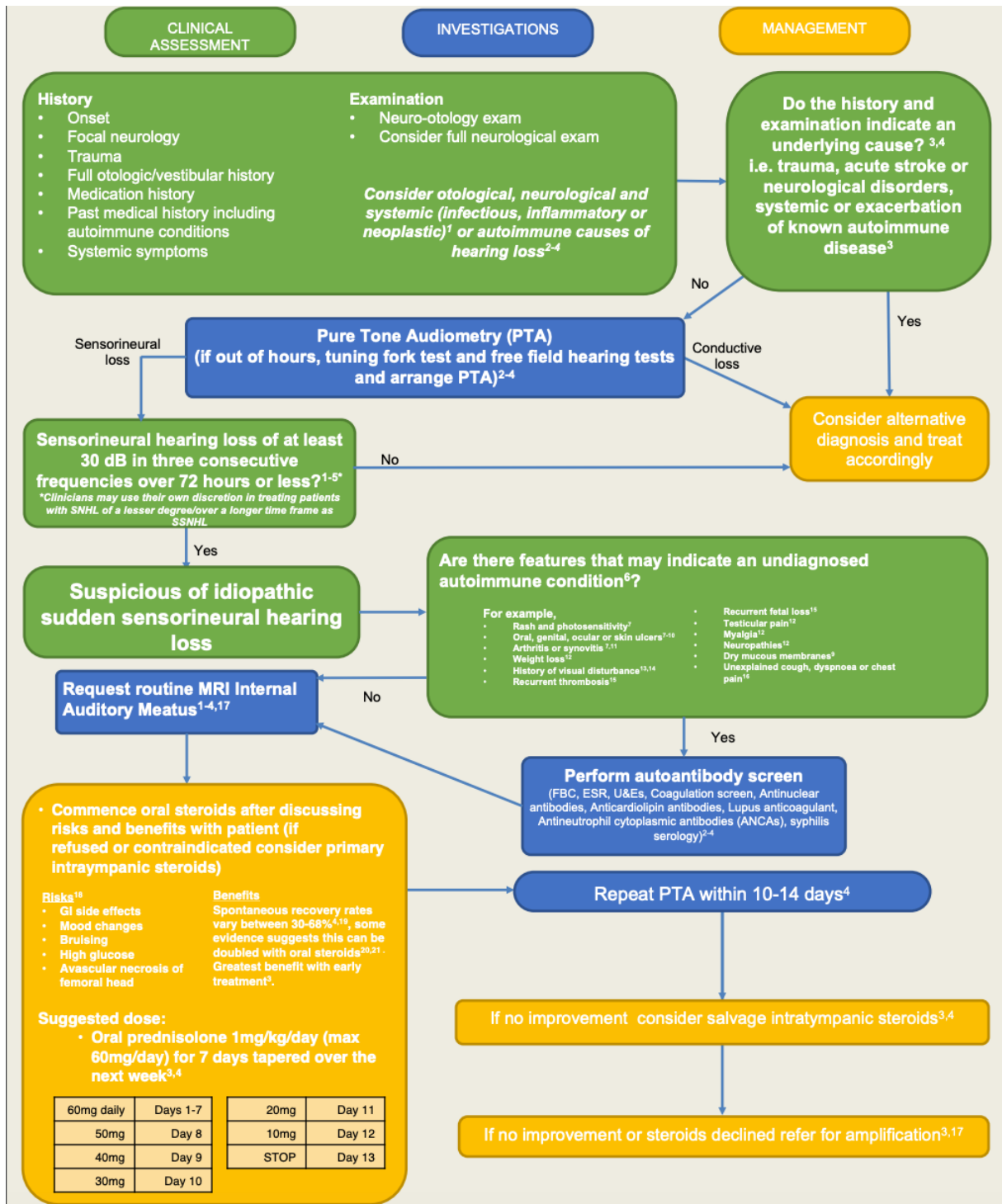
Investigations will be very different between a 70-year-old man with a past medical history of cardiovascular disease who may have had a stroke and subsequent SSHL, and a 37 year old man who has been previously fit and well before developing SSHL.

If we follow the ENT UK guidelines below, our patient would have a Pure Tone Audiometry test and a routine MRI of the internal auditory meatus.

Treatment of SSHL:

It is important to identify and treat the cause of SSHL. However, **corticosteroids** are commonly prescribed as a first line treatment in SSHL as a vast proportion of cases are caused by inflammation. See the flowchart below for more information on corticosteroid prescribing for SSHL.





References:

Management of suspected unilateral SSHL in adults, ENT UK:

<https://www.entuk.org/sites/default/files/files/SSNHL%20SSO.pdf>

Sudden Sensorineural Hearing Loss, Trends in Hearing:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4040829/>

