Case 12:

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.

For questions and feedback please email us at edinburghentsoc@gmail.com or use our social media pages (@EUENTSOC on instagram, @EdinburghENTSoc on Facebook).

Mrs Potter, a 42 years old woman, presents to her GP with a 2-day history of rapid-onset severe ear pain and fullness. She also complains of otorrhea and mild decreased hearing.

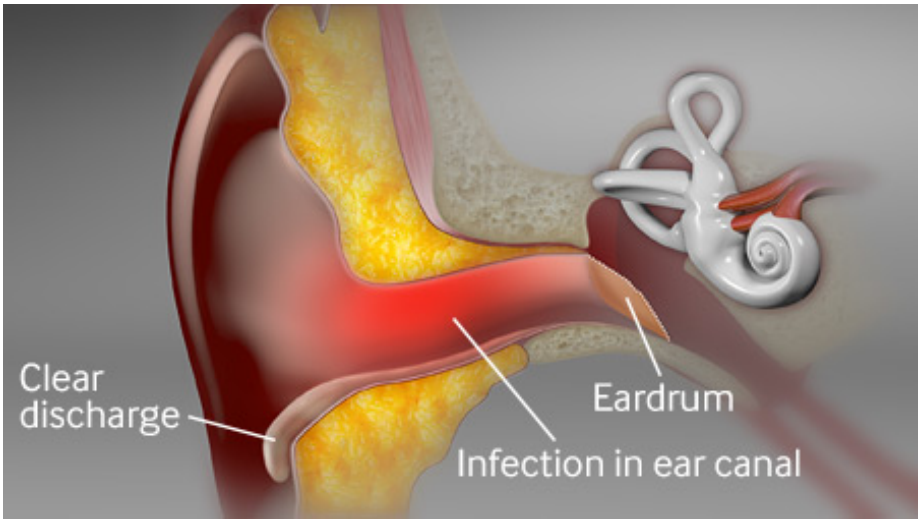
On physical examination, the external ear canal is diffusely swollen and erythematous. There is tragus tenderness and pain with movement of the auricle. The tympanic membrane was partially visualised due to swelling but it did not appear perforated. The concha and pinna look normal.

Question 1: What is the most likely diagnosis?

Answer Q1: **Acute Otitis Externa**

Acute otitis externa (AOE) is defined as diffuse inflammation of the ear canal, which may also involve the pinna and the tympanic membrane. It is a form of cellulitis.

The presentation of AOE is generally characterised by a rapid onset (48hrs) of otalgia, ear canal swelling and erythema. There may also be otorrhea, aural fullness, itching, decreased hearing and an erythematous tympanic membrane → this may make it hard to differentiate with otitis media.



Question 2: What are some risk factors for AOE?

Question 3: What investigations may be appropriate for this case?

Question 4: What treatment is most likely to be offered in this case?

Answers Q2-4:

The most common **risk factors** for AOE are:

- External auditory canal obstruction
- High humidity and warm temperature
- Swimming
- Local trauma e.g. cotton buds
- Allergy
- Skin disease
- Diabetes
- Immunocompromised
- Prolonged use of topical antibacterial agents

AOE investigations:

In non-complicated cases of AOE a simple **swab** for microbiology culture and sensitivity may be performed. However, clinicians may not order any investigations in mild cases.

MRI, CT scan and microscopy of exudate/debris from ear canal may be considered for cases that are not responding to medical therapy and/or if necrotising otitis externa is suspected → granulomatous tissue on examination + immunocompromised or diabetic patient

AOE treatment:

Some mild cases may respond to just analgesia and watchful waiting.

Considering Mrs Potter's symptoms and examination, she would probably benefit from topical antibiotics. In Lothian, it is acetic acid with or without topical corticosteroid.

Oral/IV antibiotics are only used in cases which are refractory to topical treatment or in malignant AOE.

Malignant AOE:

Patients who are diabetic or immunocompromised are much more at risk of malignant/necrotising otitis externa.

These patients are treated much more aggressively with oral/IV antibiotics, topical antibiotics and debridement.

Complications of malignant AOE include:

- Cranial nerve palsy
- Osteomyelitis of the skull base

References:

- BMJ Best Practice Otitis Externa (including diagram): https://bestpractice.bmj.com/topics/en-gb/40
- SFO UK Handbook for Medical Student and Junior Doctors: https://www.entuk.org/sfo-e-book
- Lothian Joint Formularies: https://www.ljf.scot.nhs.uk/LothianJointFormularies/Adult/5.0/(h)/Pages/default.aspx