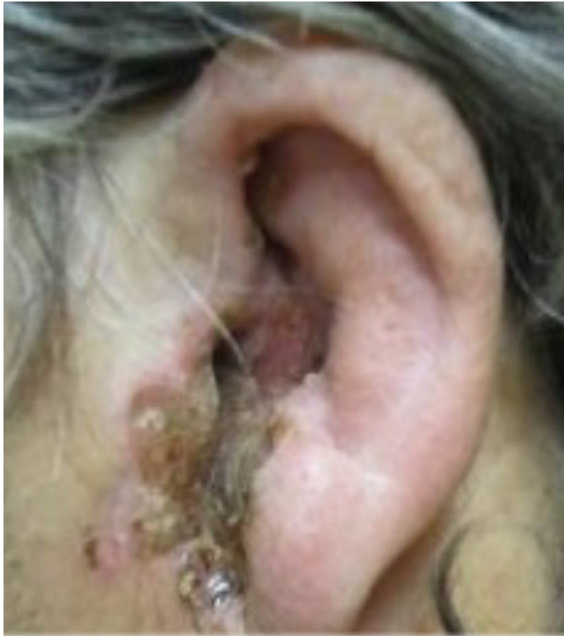
Monash Health 2016.2

SAQ 7

A 65 yo man presents to the ED with 3/52 of ongoing severe left ear pain & discharge.
He has been seen twice by his LMO and managed with sofradex ear drops and augmentin tablets.
Temp 38.5 HR 110 BP 130/70



a) What is the most likely diagnosis

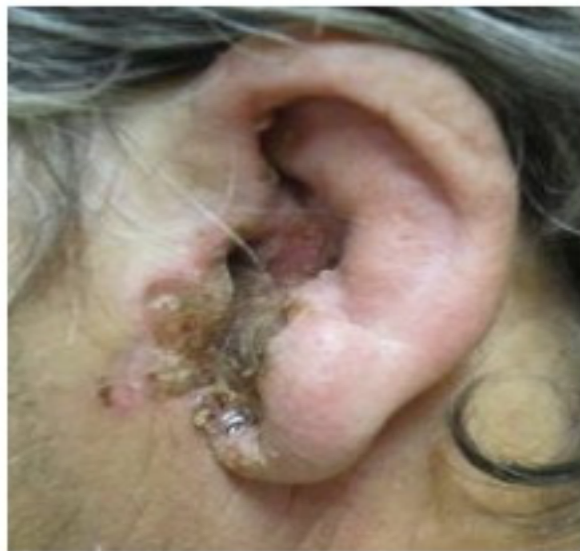
b) List & Justify/give rationale for 4 investigations

c) List 4 potentially serious/life threatening complications of this condition

d) Outline 3 aspects of your treatment (including dose/ duration where relevant)

Malignant (necrotizing) otitis externa

- Progressive, lethal infection of EAC, surrounding tissue and skull base
- Elderly diabetic/ immunocompromised pts.
- *Pseudomonas aeruginosa*



Points to consider when asked to justify or provide a satisfactory rationale

- when and why you would perform the test(s)
- What you would be looking for
- Test utility/ or likely yield
- Clinically relevant information

Features of an unsuccessful answering

- Investigtion without adequate explanation
  - Eg FBE signs of infection

- Listing investigations in a self evident fashion
  - Eg U+ E to check for electrolyte abnormalities
  - CRP/ESR – inflammatory markers

- Investigations showing no clinical perspective
  - Eg CXR for pneumonia in this pt

- Omitting key investigations

- Writing “Baseline” as justification for investigations

List & Justify/give rationale for 4 investigations

investigation	Justification/Rationale
MCS ear swab	Expect Pseudom (95% cases)+/- fungal sp as pt not responding standard OEx Rx
CT brain/skull	CT scanning may show temporal bone calcium loss and osteitis (not sensitive!, looks for alternate diagnoses/complications
Bone scan	The most sensitive test for O/Myelitis , looking for osteoclast and osteoblast activity.
BSL	Expect poor diabetic control /elevated BSL & Hba1C
ESR	ESR is typically elevated in necrotizing external otitis; therefore, it is a useful indicator of treatment response.
WCC	Expect low neut with immunocompromised pt or elevation >15-20 with systemic sepsis
Renal function	Impairment with DM may need care with contrast or dose adjustment for antibiotics

List 4 potentially serious/life threatening complications of this condition

- Osteomyelitis base of skull with CNopathies (VII,X,XI)
- Meningitis
- Encephalitis
- Brain abscess
- Cavernous sinus thrombosis
- Dural sinus thrombosis

Outline 3 aspects of your treatment (including dose/duration where relevant)

- **Antibiotic IV Ciprofloxacin/tazocin/3rd gen ceph+aminoglycoside/**
- **Analgesia needs to address severe pain**
- Mx Diabetes
- Ear toilet/adjuncts inc dexameth /ear wick/Cipro drops
- Admission/referral debridement

Treatment

- **The excellent antipseudomonal activity of fluroquolones** has generally made them the treatment of choice for necrotizing otitis externa,
- although a **combination of a beta-lactam antibiotic and aminoglycoside** is also effective.
- In severe cases, a prolonged course of parenteral antibiotics may be needed, but the excellent gastrointestinal absorption of the fluoroquinolones allows milder infections to be treated with a two-week course of oral therapy. Typically **oral** cipro for 6–8 weeks, with surgery considered in select severe cases. Always swab and culture any discharge from the ear before starting treatment. 95% are caused by pseudomonas
- Treatment should also include **surgical debridement of any granulation or osteitic bone**