



ENDGAMES

CASE REVIEW

Acute otalgia and otorrhoea in primary care

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A 26 year old otherwise well man with no medical history of note attended his general practice with a five day history of severe right ear pain and scanty ear discharge. He had returned from holiday one week earlier, where he had been swimming. He had no headache, fever, or systemic upset.

Clinical examination identified oedema and discharge at the right external auditory meatus but an otherwise normal pinna. Palpation of the right tragus caused sudden onset intense pain, and otoscopy showed oedema of the external auditory canal, with a small amount of discharge obstructing visualisation of the tympanic membrane. He had no post-auricular swelling, erythema, tenderness suggestive of mastoiditis, or signs of meningism. His observations were within normal limits.

Questions

1. What is the most likely diagnosis?
2. How would you manage this patient?
3. When would you refer him to secondary care?
4. What advice would you give him?

Answers

1. What is the most likely diagnosis?

Short answer

Acute otitis externa.

Discussion

The diagnosis is acute right otitis externa, an acute inflammatory condition of the skin of the external auditory canal, generally secondary to bacterial infection.¹ This condition is often seen in primary care, with a reported prevalence of 1% within a 12 month period.^{1,2} Common symptoms associated with this condition include otalgia, otorrhoea, pruritus, and hearing loss.¹⁻³ In uncomplicated disease, clinical examination often shows oedema of the external auditory canal, with or without erythema and discharge, and a normal and intact tympanic membrane.^{1,3} A key clinical sign is tenderness over the tragus, with palpation producing sudden, intense, and severe pain, often out of

proportion to otoscopic findings.^{1,3} In its severest form, acute otitis externa causes severe external auditory canal stenosis, perichondritis, and cellulitis of the pinna and surrounding skin.³

As part of a comprehensive clinical assessment, risk factors should be identified. These include trauma to the canal (ear buds or scratching), water or moisture within the external auditory canal, foreign bodies (including hearing aids), eczema of the ear canal, and a compromised immune system (including patients with diabetes). Common causative organisms include *Pseudomonas aeruginosa* (20-60%) and *Staphylococcus aureus* (10-70%).⁴⁻⁷ Otomycosis is a rare but important cause of otitis externa and should be suspected in recurrent otitis externa after repeated or prolonged topical antimicrobial treatment.⁸

2.

How would you manage this patient?

Short answer

Use of water precautions, topical antimicrobial or antiseptic therapy, and analgesia.

Discussion

The management of this condition is multifaceted. You should stress that water precautions are necessary, with the use of ear plugs or headbands designed to restrict the entry of water into the external auditory canal when showering or bathing. Analgesia is also essential because the condition is often very painful and disrupts sleep.

Acute otitis externa is often treated inappropriately and observational studies have shown that about 45% of patients are prescribed oral antibiotics.^{1,9} The mainstay of treatment for uncomplicated disease is a 7-14 day course of topical antiseptic ear drops. Public Health England recommends acetic acid 2% ear drops as first line treatment.¹⁰ Topical antibiotics, including aminoglycosides (such as gentamicin) and fluoroquinolones (such as ofloxacin), are an alternative option. Because of the risk of ototoxicity with aminoglycosides, these drugs should be avoided in patients with a confirmed or suspected perforated tympanic membrane. However, clinicians should liaise with their local pharmacies regarding the current available options

in their locality. Studies comparing topical antimicrobial therapy, steroids, and acetic acid drops have shown these treatments to be equally effective.⁷⁻¹¹ Patients should notice an improvement in symptoms within 72 hours of starting topical therapy, but it is important to stress that it could take up to two weeks for a complete recovery.⁴ Use ear swabs only in patients who do not improve with topical treatment, those with recurrent disease or suspected malignant otitis externa, and those who have had ear surgery.⁸ Infection and cellulitis associated with acute otitis externa can spread from the external auditory canal to the pinna and face. In such cases oral antibiotics should be started (based on local guidelines), with a low threshold to refer to secondary care if there is not a rapid improvement.

3.

When would you refer him to secondary care?

Short answer

If he does not respond well within 48-72 hours of starting treatment. Patients who develop perichondritis or have pinna or facial cellulitis that does not respond to oral antibiotics may require hospital admission for intravenous antibiotics.

Discussion

Refer patients who have not responded to therapy within 48-72 hours of starting treatment.³ In such cases ear microsuction would allow removal of debris and help in the administration of topical therapy. Severe oedema and obstruction of the external auditory canal (more than 50% stenosed) may require pope wick insertion. A pope wick is a piece of synthetic material inserted into the external auditory canal (with a microscope), that expands once wet to allow topical treatment to reach the medial aspect of the external auditory canal.³⁻⁴ The wick should be in situ for no more than three days and the ear reassessed after the wick is removed.

Patients with severe acute otitis externa who develop perichondritis or are systemically unwell will need emergency or same day referral for possible admission and intravenous antibiotics. A rare but important differential diagnosis to consider in immunocompromised patients or those with diabetes is malignant otitis externa, a potentially life threatening osteomyelitis of the temporal bone.⁸⁻¹³ *Pseudomonas* is the most common pathogen and this should be suspected in patients with severe otalgia, those who do not respond to topical therapy, and those with associated cranial nerve abnormalities.⁸⁻¹³

4.

What advice would you give him?

Short answer

Place particular emphasis on precautions to avoid water entering the external auditory canal and correct administration of topical therapy. Advise him to return for re-assessment if symptoms worsen or he develops any systemic problems.

Discussion

To ensure adequate compliance with topical therapy, effective communication is key. Research has shown that only 40% of

patients administer topical ear drops appropriately.⁸ We advise asking patients to lie on their side so that the affected ear is facing superiorly before administering the ear drops. It is preferable if another person instils the drops and that once the drops are instilled the patient remains in this position for 10 minutes while massaging the tragus. As mentioned previously, water precautions are important during treatment and clinicians should recommend that patients avoid swimming and that they use earplugs, head bandages, or cotton wool smeared in petroleum jelly while showering and bathing.⁴ The rationale behind this is that water exposure can potentially disrupt the normally acidic environment of the external auditory canal created by cerumen, which acts to reduce infection.⁴⁻¹³ It is therefore generally believed that reducing water exposure of the external auditory canal will reduce the rate of acute otitis externa, although high quality evidence to prove this is limited.⁴⁻¹³ "Safety netting" is important in all patients attending general practice, and it is particularly important to stress that patients with acute otitis externa should return for review as soon as possible if they feel systemically unwell or develop erythema of the pinna or neurological symptoms.

Patient outcome

Our patient was started on topical acetic acid drops and simple analgesia and was given safety netting advice. He responded well initially and his symptoms completely resolved after 10 days of treatment.

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Patient consent obtained.

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