Otitis externa and otorrhoea

1. Otitis externa and otorrhoea

The discharging ear is a common presentation in primary care, often put down to otitis externa. Otitis externa is common, affecting 10% of the population in their lifetime, but there are other causes of otorrhoea to consider. We will take a closer look at some of the pitfalls in the diagnosis of otitis externa, and why these consultations are not always as straightforward as we might think!

Is it otitis externa?

This article was reviewed in June 2023.

1.1. Presentation

The classic symptoms of otitis externa will come as no surprise: pain, itch,

discharge, hearing loss. However, not all symptoms are present in all patients, and it can be difficult to distinguish otitis externa from other common causes of a painful or discharging ear, including otitis media.

Let's consider the symptoms in more detail to ensure we do not miss other causes of otorrhoea. Systemic symptoms such as fever, headaches or loss of appetite are unusual for otitis externa and should prompt us to reconsider the diagnosis (BMJ 2021;372:n714).

Pain

- Pain is the predominant symptom of otitis externa, affecting around 70% of cases.
- An older BMJ review reminds us that pain tends to *accompany* the discharge with otitis externa, but *comes before* the discharge starts with otitis media (BMJ 2011;342;d2299).
- Moving the tragus or pinna will elicit pain in patients with otitis externa.
- Deep or severe pain, out of proportion to the rest of the presentation, should make us wary of more serious conditions such as malignant otitis externa (see section on malignant otitis externa, below).

Itch

Persistent itch may be a symptom of the infection itself, but could be an indicator of underlying dermatitis (such as eczema or seborrhoeic dermatitis) as a cause for recurrent otitis externa.

Discharge

- Discharge from a bacterial infection may appear white and purulent, is usually scant but can be thick.
- Discharge from a fungal infection can be white, black or grey, and may appear fluffy. Fungal spores may be visible.

Hearing loss

Hearing loss in otitis externa is usually caused by narrowing of the ear canal from swelling or discharge, so should improve as the infection is treated (see *Hearing loss: GEMS* for more detail on how to assess this).

Tinnitus

Pre-existing tinnitus may be worsened by infection, but otitis externa is not usually a cause of isolated tinnitus (see *Tinnitus*: *GEMS* for more detail).

1.2. Risk factors

The following may be considered risk factors (BMJ 2011;342;d2299):

- Water exposure.
- Hot, humid environments.
- Previous ear surgery.
- Immune compromise: including diabetes and older adults.
- Skin conditions, including eczema, seborrhoeic dermatitis and psoriasis.
- Hearing aid use or other in-ear devices, e.g. earplugs or earbuds.

- Trauma, often from cleaning or scratching.

1.3. Pitfalls: five things not to miss when diagnosing otitis externa

Misdiagnosing it as otitis media	Otitis media with perforation also causes a painful, discharging ear with reduced hearing, so distinguishing between this and otitis externa can be difficult. It's even harder in a screaming child or where the ear drum is obscured by discharge! • History can point us towards the most likely cause. • Remember: discharge in otitis media usually comes AFTER the pain, and there are often accompanying URTI symptoms. There may be a fever. • Otitis media with perforation is less common in adults than in children. (BMJ 2011;342;d2299)
Is it a fungal infection?	2% of otitis externa is fungal, usually Candida or Aspergillus species. • Consider this when otitis externa fails to improve with topical antibacterial treatment. • More likely with previous antibiotic use, diabetes, immune compromise. • You may see white (Candida) or black (Aspergillus) fungal spores in the ear. (BMJ 2014;348:g150, Otolaryngol Head Neck Surg 2014;150(1):S1-S24)
Malignant otitis	Malignant otitis externa is osteomyelitis of the temporal bone

externa: rare but serious	secondary to otitis externa, where infection spreads along the skull base, affecting soft tissues, cartilage and bone. Consider the diagnosis in people with non-resolving otitis externa associated with disproportionate pain and fever, particularly in the presence of: • Diabetes, immune compromise or in older adults (90% of malignant otitis externa occurs in people with diabetes). • Cellulitis. • Associated vertigo or hearing loss. • Cranial nerve involvement: facial nerve palsy. If suspected, refer for urgent same-day ENT review. (BMJ 2021;372:n714)
Cholesteatoma: easily missed	Cholesteatoma tends to affect the upper part of the tympanic membrane, and is more common in patients who have recurrent infections. • It can present with chronic painless ear discharge and reduced hearing (BMJ 2021;372:n714). • A GP with 2000 patients might expect to see a new case every 5 years. • If a good view of the tympanic membrane is not possible, call these patients back in 2–4 weeks for a second look when all has settled. (BMJ 2014;348:g150, BMJ 2011;342;d2299)
Foreign body: a mimic	*Foreign body can mimic or cause otitis externa: a satisfying discovery and another good reason to routinely examine patients with ear symptoms.* Refer if cannot be safely removed in primary care. (BMJ 2011;342;d2299)

1.4. Treatment

Treatment has three purposes: to relieve symptoms now; to address the underlying infection and inflammation; and to consider any prevention that may be necessary to avoid future episodes.

Symptomatic treatment

As pain is a predominant feature for most, pain relief should be recommended.

Advise self-care measures, including a warm or cold flannel to the affected ear, and simple analgesia with paracetamol or ibuprofen (NHS ear infections accessed June 2023).

Treating the infection and inflammation

Topical treatments

There is an absence of high-quality evidence comparing different topical treatments for otitis externa head-to-head.

A meta-analysis of 19 trials showed that topical antibiotics, antiseptics, glucocorticoids and acidifying agents were similarly effective at treating otitis externa (Cochrane 2010;(1):CD00474).

Options include:

Topical acetic acid 2% spray	May be used in mild cases.
Topical antibiotics	**Aminoglycoside drops** In the UK, aminoglycoside antibiotic drops, e.g. gentamycin, are often advised for otitis externa because Pseudomonas and Staphylococcus make up most infections. They are theoretically contraindicated in people with a known tympanic membrane perforation, *but* can be used on specialist advice. Do I need to worry about aminoglycosides causing deafness? (BMJ 2011;342;d2299) • Even in patients with perforated ear drums, aminoglycoside eardrops will not reach ototoxic levels in short courses of 1–2 weeks. • The drops can remain in the inner ear for up to 6 months, so beware using repeat courses. **Fluoroquinolone drops** • Ciprofloxacin 0.3% eyedrops may be used off-licence to treat otitis externa. • The BNF suggests using 0.25ml (0.5mg) twice daily for 7 days (most droppers dispense 0.05ml/drop so this would equate to 5 drops).
Topical antifungals	Clotrimazole 1% is available as eardrops for fungal otitis externa. Acetic acid may be used off-licence.

Oral antibiotics

Oral antibiotics are rarely needed for straightforward otitis externa in

primary care. They are less effective than topicals (BJGP 2001;51(468):533), and can cause unwanted side-effects and promote antibiotic resistance.

They should only be considered where there is extension of infection beyond the ear canal (cellulitis) or host risk factors, including diabetes and immunocompromise. Cellulitis can be a sign of more serious infection or malignant otitis externa (Otolaryngol Head Neck Surg 2014;150(1):S1-S24).

If oral antibiotics are prescribed, topical antibiotic drops should be used alongside (BMJ 2021;372:n714).

As a good rule of thumb, if you think your patient needs oral antibiotics, consider referring to exclude malignant otitis externa.

Prevention

Prevention is focused around reducing exposure to the risk factors listed above (BMJ 2014;348:g150, BMJ 2011;342;d2299):

- Managing any underlying conditions such as diabetes, eczema, seborrhoeic dermatitis or psoriasis to reduce risk of infections may help.
- Avoid using a hearing aid or other in-ear devices in the affected ear until the infection has settled.
- *Don't put anything in your ear smaller than your elbow.* Give advice to avoid hazards such as the use of cotton buds, bent paper clips, toothpicks, keys, etc. to itch or clean the ears.
- For those with a history of infection related to water exposure, advise patients to keep the ear dry until the infection is fully resolved, and

take steps to prevent water getting in the ear during swimming or bathing.

1.5. Treatment failure

A BMJ Practice Pointer article states that (BMJ 2021;372:n714):

- 65–90% of people improve clinically within 7 to 10 days.
- Those who still have some symptoms after 7 days should continue treatment for up to 14 days.
- If symptoms have not resolved after 14 days, this should be considered a treatment failure and prompt us to consider swab +/- referral to ENT emergency clinic *(depending on clinical picture)*.

1.6. When should I swab?

NICE CKS (accessed June 2023) says we should consider taking a swab:

- If infection fails to respond to initial treatments, to help target antimicrobials (the BMJ Practice Pointer article suggests this should be after 14 days (BMJ 2021;372:n714)).
- In recurrent or chronic otitis externa.
- If infection has spread beyond the external auditory canal.
- In severe infections.

1.7. When should I refer?

ENT emergency clinic referral is advised when adequate treatment of otitis externa is not possible in primary care (BMJ 2021;372:n714). This may include:

- Swelling causing complete canal stenosis requiring a wick.
- Complete canal occlusion due to discharge or debris, requiring micro suction to allow topical treatment to penetrate.
- Treatment failure (as detailed above).
- Malignant otitis externa. Remember: this is an ENT emergency and warrants same-day referral.

Many ENT departments will run emergency clinics to enable people with conditions such as otitis externa to be seen on the same day.

Suspected cholesteatoma should prompt ENT outpatient referral (BMJ 2011;342;d2299).

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- Otitis externa is a common cause of otorrhoea, but other causes should be considered.
- Malignant otitis externa is an ENT emergency: symptoms include disproportionate pain, fever and facial nerve palsy.
- Cholesteatoma can be a complication of recurrent or chronic ear infections.
- Aminoglycoside drops can be used for short courses in ears with a perforated drum.

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