

## PRACTICE

## 10-MINUTE CONSULTATION

## Otorrhoea

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This is part of a series of occasional articles on common problems in primary care. The *BMJ* welcomes contributions from GPs.

A 49 year old woman presents to her general practitioner with discharge from her left ear and otalgia. She had used olive oil drops for ear wax and completed a course of amoxicillin for presumed otitis media. Her symptoms have persisted despite treatment.

### What you should cover

Ask about :

- Otorrhoea
- Otagia
- Tinnitus
- Vertigo
- Hearing loss

Most ear disorders will present with one or more of these five symptoms.

### What is the link between otorrhoea and otalgia?

Otitis externa presents with pain and discharge simultaneously. Patients with acute otitis media present with increasing otalgia. Otorrhoea starts when the tympanic membrane perforates, which resolves the earache. Acute otitis media is more common in children than in adults. Both otitis externa and acute otitis media carry a risk of intracranial disease if inappropriately treated.<sup>1 2</sup> Secondary symptoms such as headache, diplopia, pyrexia, neurology, and unrelenting pain indicate the need for more aggressive management.

### Risk factors

Psoriasis, eczema, previous otitis externa or otitis media, and ear surgery all increase the chance of future ear disease. The

patient's hobbies, occupation, and activities provide insight into potential ear disease, in particular:

- Water exposure: canal abnormalities and otitis externa
- Use of ear defenders, hearing aids, or headphones: otitis externa
- Flying: barotrauma and perforation
- Diabetes or immunodeficiency: necrotising otitis externa
- Use of cotton buds: many patients use these to try to remove wax from the ear
- "Hopi" candles: some patients use these to try to remove wax from the ear.

### Prevalence and incidence

- 10% of people have otitis externa at some point in life. Only 2% of primary otitis externa is fungal.<sup>1</sup>
- Acute otitis media is commonest in children, with 80% having at least one episode by age 3 years.<sup>2</sup>
- Cholesteatoma presents in 10 new patients per 100 000 a year. A general practitioner with 2000 registered patients might see one new case in five years.<sup>3</sup>

### Examination

Note the colour of any discharge. Blood or clear fluid is important in patients with a history of trauma. If a purulent discharge is refractory to treatment, sending a swab for microhistological culture may guide further treatment.

Tragal pressure causes deformation of the ear canal, and is a good indicator of otitis externa. Pain over the mastoid or the temporal bone on percussion should ring alarm bells as it suggests bony involvement.<sup>2</sup> Use otoscopy to systematically assess the external and middle ear:

- Ear canal: is there erythema, discharge, structural abnormality, or stenosis?

- In the tympanic membrane inspect for colour, retraction or bulging, and perforation
- Carefully inspect the upper part of the tympanic membrane for cholesteatoma or crusting. A normal tympanic membrane is translucent with well defined anatomy. Obstructive debris can be removed with a wax hook or suction where available. The whole tympanic membrane may not be visible, but other clinical findings should be sufficient to enable a diagnosis.

## What you should do

Careful history and examination is essential in differentiating otitis externa from otitis media.<sup>1 2</sup>

*Pseudomonas* spp causes 40% and *Staphylococcus aureus* 30% of cases of otitis externa. Aminoglycoside based drops are a good treatment option for both organisms unless they are resistant.<sup>4</sup>

Aminoglycoside based ear drops are safe for short term use (one to two weeks) in patients with a perforated tympanic membrane as the concentrations in the solution are not sufficient to be ototoxic. However, the drops will remain in the inner ear fluid for up to 6 months so repeat courses should be used with caution.<sup>4</sup>

The use of fluoroquinolone drops (such as ciprofloxacin and ofloxacin) for patients with otitis externa is based on good evidence, and they are safe with perforations.<sup>4</sup>

Check for a foreign body, particularly in children, but also in adults with a history of cotton bud or candle use (advise them against further use). A foreign body can precede otitis externa.

Otitis externa responds best to ear drops that contain an antibiotic and a steroid. Empirical treatment with drops containing an aminoglycoside (such as framycetin, dexamethasone, and gramicidin) will cover the most common pathogens and reduce inflammation.<sup>1 4</sup>

When otitis externa causes canal stenosis, wick insertion or prolonged treatment is needed, plus specialist input from an ear, nose, and throat emergency clinic.

Patients with acute otitis media may need oral antibiotics to cover respiratory pathogens such as *Streptococcus pneumoniae* and *Haemophilus influenzae*.<sup>2</sup>

- In patients with otitis externa that need more than two treatment attempts, swab the ear and refer the patient for specialist input and microsuction toilet. Never syringe a discharging ear
- Hearing aids should not be worn in an ear being treated for otitis externa.

Some ear, nose, and throat departments may have a nurse led suction clinic, which is ideal for troublesome, recurrent, or impacted wax. However, if suction is needed in an ear with infection, discussion may be needed with an emergency clinic.

The following advice should be given to patients:

- If you are prone to recurrent ear infections, avoid getting water in your ears. Keep your ears dry when showering,

bathing, or washing your hair by gently placing cotton wool in the ear and covering with Vaseline to make a splash-proof barrier. Wax can be softened by putting olive oil drops into the ears regularly for one or two weeks. The ears are self cleaning, and wax will gradually work its way out without the need for cotton buds.

- Do not wear a hearing aid in an ear that is infected--this encourages bacteria to grow in a moist environment with little ventilation.

## Referral to an ear, nose, and throat specialist

Patients with immunodeficiency or diabetes who have pain when sleeping, focal neurology, or unrelenting otalgia should be admitted immediately to exclude necrotising otitis externa, a severe pseudomonal osteomyelitis.

Crusting may indicate cholesteatoma, which should prompt routine outpatient referral. Cholesteatoma is a collection of locally erosive keratinising epithelium, often accompanied by an unpleasant smelling, longstanding, off-white discharge. Focal neurology or pain requires urgent referral.

Aural toilet is a useful adjunct in removing debris, infected tissue, pus, and impacted wax. These all perpetuate infection, and removal facilitates treatment. Removal of wax alone may be suitable for a nurse led suction clinic where available. Otitis externa that is not amenable to treatment in the community may require advice from an ear, nose, and throat surgeon.

Fungal otitis externa is evident as spores on otoscopy, and treatment should be with antimycotic drops such as clotrimazole. Fungal otitis externa may be precipitated by long term use of antibiotic drops containing steroids.

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- 1 Beers SL, Abramo TJ. Otitis externa review. *Pediatr Emerg Care* 2004;20:250-6.
- 2 Grevers G. Challenges in reducing the burden of otitis media disease: an ENT perspective on improving management and prospects for prevention. *Int J Pediatr Otorhinolaryngol* 2010;74:572-7.
- 3 McHugh TP. Intracranial cholesteatoma: a case report and review. *J Emerg Med* 2007;32:375-9.
- 4 Phillips JS, Yung MW, Burton MJ, Swan IR. Evidence review and ENT-UK consensus report for the use of aminoglycoside-containing ear drops in the presence of an open middle ear. *Clin Otolaryngol* 2007;32:330-6.

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**Further resources**

Patient UK ([www.patient.co.uk](http://www.patient.co.uk))—Website contains sections on otitis externa and otitis media

NHS Clinical Knowledge Summaries ([www.cks.nhs.uk](http://www.cks.nhs.uk))—Website contains sections on otitis externa and otitis media