

## Chapter 7

# Eye and Ear Problems

### Eye problems: The red eye

Conjunctivitis is a common condition resulting in red eyes, caused by infection, allergy or irritation. There are other more serious types of red eyes, which are usually more painful, that need to be considered. Notes on some of the causes of painful red eyes are provided below.

A good 'rule of thumb' is that if eye pain and change in vision are significant features, patients should be referred to the general practitioner (GP) surgery. In some parts of the United Kingdom, optometrists (opticians) will also manage these patients and will have direct access to eye clinics if onward referral is needed. Pharmacists should make themselves aware of these local care pathways, if relevant. Many other common eye problems are now managed by optometrists, and in many instances the patient can be directed to them for advice and care.

#### What you should know

Causes of red eye

- Conjunctivitis

  - Infective

  - Allergic

- Blepharitis

Other causes – painful red eye

- Corneal ulcers

- Keratitis

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Iritis/uveitis

Glaucoma

One or both eyes affected?

Duration of symptoms

What is the appearance of the eye?

Pain, gritty feeling, photophobia?

Is vision affected?

Any discharge from the eye(s) – purulent, watery?

Does the patient wear contact lenses?

## 7

## Significance of questions and answers

### Eye and Ear Problems

### Conjunctivitis

The term *conjunctivitis* describes inflammation of the conjunctiva, which is a membrane covering the anterior white part of the eye (sclera) and the inside of the eyelids. It can become inflamed due to infection, allergy or irritation. The two main features are eye redness, due to dilatation of blood vessels over the sclera, and discharge; the conjunctiva on the inside of the eyelids contains cells that produce mucus, and glands that produce tears, and when inflamed more of these are secreted.

### Infective conjunctivitis

Both bacteria and viruses can cause conjunctivitis. Viral conjunctivitis is the most common overall cause of infectious conjunctivitis and usually does not require treatment. Viral conjunctivitis is often accompanied by other signs of viral respiratory tract infection, such as cough and cold. The main symptoms of conjunctivitis, apart from redness or 'pinkness', are an uncomfortable gritty sensation and a discharge. It is not a painful condition. The discharge is sticky and purulent in bacterial infections and more watery in viral infections. Only one eye may be affected initially, but symptoms usually affect both eyes within a few hours. If symptoms of conjunctivitis are confined to one eye, this suggests the possible presence of a foreign body or another condition accounting for the red eye. A systematic review found that a purulent discharge with sticking together of eyelids on waking and lack of itching were stronger factors associated with bacterial conjunctivitis compared with the other types. Itching was the symptom most strongly related to allergic conjunctivitis.

All patients with conjunctivitis and pain in the eye(s) should be referred to the GP surgery. Also anyone who says their vision is affected (other than transient blurring, cleared by blinking, due to the discharge) should be referred for urgent assessment.

### Management of conjunctivitis

Acute bacterial conjunctivitis is frequently self-limiting. A Cochrane systematic review found that 65% of cases of bacterial conjunctivitis resolve anyway



within 2–5 days when treated with placebo. This review concluded that use of antibiotic eye drops is associated with 'modestly improved' rates of both clinical and microbiological remission and recommended that 'use of antibiotic eye drops should be considered in order to speed the resolution of symptoms and infection'.

'Watchful waiting' is therefore a reasonable alternative option, particularly as many cases will be viral. Systematic reviews show no increased rate of serious harm with placebo, compared with antibiotics. If there is a sticky discharge, gentle cleansing of the outside of affected eye(s) with cotton wool soaked in water can be recommended regardless of whether treatment is being suggested.

→ *Chloramphenicol eye drops* 0.5% every 2 h for the first 24 h and then four times daily or *chloramphenicol eye ointment* 1% can be used over-the-counter (OTC) for the treatment of acute bacterial conjunctivitis in adults and children aged 2 years or over. Symptoms usually settle in a few days. Five days treatment is usually adequate, but treatment should be continued for 48 h after resolution of symptoms.

People with infective conjunctivitis or those treating someone who is infected should wash their hands regularly and avoid sharing towels and pillows, as sometimes the infection can be contagious. Contact lenses should not be worn until the infection has completely cleared and until 24 h after any treatment has been completed. This is important as if lenses are left in with bacterial conjunctivitis, serious ulceration of the eye can occur.

→ If conjunctivitis symptoms persist for longer than 1 week, further investigation is needed, and referral to the GP surgery is indicated. Patients should be advised that medical advice is urgently needed if the eye(s) become markedly painful, there is photophobia (discomfort to light) or marked redness or vision is affected.

## Other conditions with similar symptoms

### ✓ Allergic conjunctivitis

This produces irritation and a watery discharge. Itchiness may be a significant feature, and sometimes, the conjunctiva over the whites of the eyes are very swollen or 'oedematous'. It typically occurs in the hay fever season but can occur at other times in some people, for example, due to pet allergy. It is sometimes difficult to differentiate between infection and allergy, and therefore referral is needed if there is doubt.

### ✓ Management

In allergic conjunctivitis due to hay fever, if there are other symptoms related to allergic rhinitis (e.g. sneezing, runny nose and nasal blockage), oral anti-histamines and nasal corticosteroids will treat most of them and may relieve eye symptoms (see Chapter 1 Respiratory Problems: Allergic rhinitis (hay fever)).

Protection  
(advised)  
Referral



For predominant or significant eye symptoms, antihistamine drops can be helpful. Some preparations for pharmacist supply (P drugs) are also combined with sympathomimetic decongestant. They should not be used for more than 7 days.

If there is prolonged exposure to allergens in allergic conjunctivitis, then the continued use of a topical antihistamine becomes inappropriate, and it may be better to recommend drops containing a mast cell stabiliser such as *sodium cromoglicate* or *lodoxamide*. Another mast cell stabiliser preparation, *nedocromil sodium*, is also sometimes used, but is only available on prescription. These drugs help to treat allergic reactions by blocking the attachment of immunoglobulin/allergen complexes to mast cells.

*Sodium cromoglicate* 2% eye drops can be recommended OTC (P and GSL) for the treatment of both seasonal and perennial allergic conjunctivitis (not suitable for children younger than 1 year). Several proprietary brands are available. Warn patients that they might experience a mild transient burning or stinging sensation after administration. The drops should be used four times a day and are relatively quick acting at relieving symptoms but should be continued regularly to prevent symptoms returning. Contact lens wearers may need to leave lenses out while using them (see specific product details). They remain effective when used for long periods of time, but some of the product instructions recommend seeing a doctor if used continuously for more than 14 days.

*Lodoxamide* is used in a similar way and can be supplied as a P medicine. It should not be used in children under 4 years of age.

### ✓ **Blepharitis**

Blepharitis describes inflammation of the margin of the eyelids. Characteristic symptoms are itchy, stinging and sticky eyes. The symptoms and appearance are like conjunctivitis and the conditions are often confused. It tends to be a chronic condition, and often there is an underlying chronic infection. Treatment can control symptoms and prevent complications; however, periodic relapses and exacerbations can occur. In some patients, there is an association with acne rosacea or seborrhoeic dermatitis (see Chapter 3 Skin Conditions).

Management of blepharitis involves advice on good eyelid hygiene, including advice to avoid eye make-up. Patients are usually given an instruction sheet on eyelid hygiene<sup>1</sup>: this involves soaking the closed eyes with a warm cotton wool pad or flannel and subsequently cleaning the eyelids by wetting a cloth or cotton bud with cleanser (for example, baby shampoo diluted 1 : 10 with warm water or bicarbonate solution) and wiping along the lid margins. This washing helps clear the debris and reduces inflammation of the eyelid margin.

③ Sometimes topical antibiotics are used for flare-ups of the condition, and long-term treatment is often needed (6 weeks or more). Although pharmacists can advise and support patients who have this common condition, confirmation of the diagnosis and initiation of treatment is best done by the optometrist or at the GP surgery.



### ✓ Subconjunctival haemorrhage

A subconjunctival haemorrhage is a very common cause of a red eye. It is caused by a small bleed behind the membrane layer of the conjunctiva and results in redness over the white of the eye (sclera). It can look very alarming, but it causes no discomfort and is usually harmless. The redness usually clears within 1–2 weeks. It is most commonly a spontaneous, unexplained occurrence, and patients can usually simply be reassured. The only reason to refer them to the GP surgery would be if high blood pressure was suspected (for example, no recent check-up) or if they had unexplained bleeding or bruising elsewhere.

### Painful eye conditions

→ *not CRU, or ID (Referral)*

### → Corneal ulcers, keratitis

Corneal ulcers may be due to an infection or a traumatic abrasion. The main symptom is that of pain as the cornea is exquisitely sensitive. There may be surrounding scleral inflammation. An abrasion can be caused by contact lenses, but wearers may not get as much pain as constant contact reduces the pain sensation. Early diagnosis is important as the cornea can become permanently scarred, with loss of sight. The cornea is the transparent covering over the front of the eye, and early ulcers may not be visible without staining. This involves examining the eye under ultraviolet light after instilling *fluorescein drops*, which will colour and highlight an otherwise invisible ulcer.

Keratitis is inflammation of the cornea, often with infection. It often presents with a unilateral, acutely painful red eye, and the patient complains of discomfort from bright light (photophobia). Sometimes it is caused by ultraviolet light damage from a welding torch or from sunbeds. It may be caused by herpes simplex virus or, occasionally, a bacterial infection. If herpes virus is the cause, there is usually an associated history of cold sores. *Acanthamoeba keratitis* is sometimes seen in soft contact lens wearers and is associated with poor lens hygiene, extended wear and swimming while wearing lenses. It can cause serious problems and can be difficult to treat.

### Management

If these conditions are suspected, ~~urgent~~ referral is indicated to the optometrist or GP. A common cause of corneal ulcers is a foreign body caught under the eyelid, and these are usually easy to remove. Superficial ulcers caused by such trauma will usually heal quickly. Simply leaving the lens out will usually heal ulcers caused by contact lenses. Often a short course of antibiotic eye drops or ointment is also supplied to prevent secondary infection. Severe ulcers and keratitis caused by infection require assessment and treatment by specialists at an eye hospital.

### → Uveitis (iritis)

Uveitis, sometimes known as iritis, is inflammation of the iris and surrounding cilia body. It may occur in association with some forms of arthritis, sarcoidosis



or tuberculosis. It sometimes occurs as an isolated event with no obvious cause. In some cases infection seems to be the trigger. It mostly affects both eyes, but may be unilateral. The inflammation causes 'deep' eye pain, which is felt more within the eye than is the superficial gritty pain of conjunctivitis, and there is no discharge. The affected eyes are red, mostly around the cornea (circumcorneal inflammation or 'injection'), and the pupils may be contracted due to muscle spasm in the iris, and possibly irregular. Blurring of vision and photophobia are common.

### Management

Untreated uveitis can cause severe eye damage and loss of vision. If suspected, urgent specialist referral is necessary. Treatment is with topical corticosteroids (sometimes oral) to reduce inflammation, often alongside eye drops to paralyse and dilate the iris.

### Glaucoma

Glaucoma occurs when the pressure of the fluid within the eye becomes abnormally high. There are two main types of glaucoma where (i) it occurs suddenly or (ii) develops slowly and insidiously.

It is the sudden onset type, acute closed-angle glaucoma, that causes a painful red eye. In most cases the iris folds over and blocks the drainage of fluid from the eye (it 'closes the angle'). The pressure builds up rapidly, and the cornea swells and becomes hazy, causing impaired vision and a halo appearance around lights. It should be suspected in a person with an acute painful red eye. It is more common in Asian people, in women and in older people. People with acute glaucoma develop sudden onset headache and nausea. Vomiting is common. The pupil becomes fixed and the eye hard and tender. In older people, headache may be the main symptom, and it can sometimes be difficult to diagnose.

### Management

Emergency hospital referral is necessary to prevent permanent loss of sight. The extreme pressure within the eye rapidly damages the optic nerve. After lowering pressure with drugs, treatment usually involves an operation or laser therapy to remove part of the iris. This lowers the pressure and should prevent it from developing again. Sometimes the unaffected eye is also treated as it is at high risk of acute glaucoma.

Chronic 'open-angle' glaucoma is the more common type of glaucoma that affects 2% of people aged over 40 years. This condition starts slowly and insidiously, without warning symptoms. The optic nerve is slowly damaged, which leads to loss of peripheral visual fields and blindness if not treated. Chronic glaucoma can be detected by an examination at the optician. It can run in families and regular check-ups are advised if there is a family history of glaucoma,



especially in those over 40 years of age. Free eye tests are available to those over the age of 40 years who have a close relative with glaucoma.

### → Contact lenses

There are two main types of lens: hard (gas permeable) and soft (hydrogel). Soft lenses are the most popular because of their comfort. One-day disposable lenses, which are worn once and require no maintenance or storage, are becoming increasingly popular. Another type of lens is extended wear disposables that can be reused for up to a month but should normally be removed and cleaned at night time. If patients keep lenses in for longer periods of time, this increases the chances of complications such as corneal ulcers, keratitis, and *Acanthamoeba keratitis* infection. Rubbing against the inside of the eyelid can cause a condition called papillary conjunctivitis.

Contact lenses should not be worn if the patient has conjunctivitis or is using certain eye drops (they should always check the patient information leaflet). Soft contact lenses can absorb the preservative benzalkonium chloride used in eye drops, and this can cause irritation and inflammation. Consequently, soft lenses should not be worn when using eye drops containing this preservative.

## ✓ Eye problems: The dry eye

Dry eye is a common problem, particularly in older adults. Sometimes the term keratoconjunctivitis sicca is used. The tear film is needed to maintain a healthy eye surface and for enabling clear vision. Tears are made up of a complex mixture of water, salts, lipids, proteins and mucus. The lipids, or oily component, surround the tear film and help to prevent evaporation of the water, and the mucous component helps spread the tear film evenly over the surface of the eye. In dry eyes, the quantity or the composition of tears changes; either not enough salty fluid is produced by the tear glands, or tears may evaporate too quickly, or they may not spread evenly over the cornea (or a mixture of these things). Tear production diminishes with age and is affected by female hormones, so the problem is most common in older women.

### What you should know

#### → Causes of dry eye

- Environment
- Medical conditions
- Medication

What are the symptoms – pain, gritty feeling, photophobia?

Is vision affected?

Does the patient wear contact lenses?



## Significance of questions and answers

### Environment

- ① Windy, dry climates increase tear evaporation. Long periods of time spent working at a computer screen are associated with dry eye because blinking tends to be less frequent; thus redistribution of the tear film happens less often.

### Medical conditions

Patients with rheumatoid arthritis, diabetes or thyroid problems are more likely to experience dry eyes.

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### Medication

Antihistamines, beta-blockers, chemotherapy, diuretics, HRT, oral contraceptives, selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants (TCAs) may affect the quantity and composition of tears. Preservatives in topical treatments may also contribute to dry eyes.

### Symptoms

People with dry eyes may report irritated, gritty, scratchy or burning eyes, a feeling of something in their eyes, excess watering and blurred vision.

### Vision

Patients with dry eyes may report experiencing some blurring of vision when they first wake up in the morning.

### Contact lenses

Individuals who wear contact lenses are more likely to experience dry eyes.

## When to refer

Most cases of dry eyes are mild to moderate and can be managed by the patient using self-care. Severe symptoms or those that do not improve with self-care should be referred to the GP or optometrist. Extreme cases can result in considerable discomfort and eye ulceration.

## Management

① Treatments for dry eyes aim to restore or maintain the normal amount of tears in the eye to minimise symptoms of dryness. There are two main treatments: lubricant eye preparations and treatments that replenish the oily



layer and reduce the evaporation of tears. The former include a range of drops, gels and ointments. Patients who wear contact lenses should use a preservative-free preparation. Preparations to replenish the oily layer include eye drops containing synthetic guar gum or a spray containing liposomes. Liposomal eye sprays can be applied onto the closed eyelids; when the eyes open, the liposomes spread across the surface of the eye, creating a new oily film.

### Practical advice

Using a humidifier at home and work can help keep the air moist. Opening windows, even for a short time, will also help to refresh and moisten the air. Avoiding tobacco smoke and smoking cessation should help. Avoid drugs known to aggravate the condition (topical antihistamines will make it worse). Wearing sunglasses (especially of a wraparound style) outside will protect the eyes from the drying effects of sun and wind. If using a computer for long periods, ensure that the monitor is at or below eye level, avoid staring at the screen, and take frequent breaks to close/blink eyes.

### Recommended treatments for dry eye syndrome

Recommend artificial tears and ointments in people with dry eyes where *Practical advice* is insufficient.

The severity of the condition and the person's preference should guide choice:

- For people with mild or moderate symptoms, artificial tears alone are usually sufficient.

→ Hypromellose is the most commonly used product but requires frequent administration (ideally 30-min intervals initially until symptoms improve, then decreased frequency).

→ Products containing carbomers or polyvinyl alcohol require less frequent application but may be less well tolerated.

→ Sodium chloride (saline) is short acting and suitable as 'comfort drops' or for use with contact lenses.

○ If a product causes irritation or if soft contact lenses are worn, consider switching to one that is preservative-free – hypromellose, carbomers, polyvinyl alcohol, sodium chloride, carmellose sodium, hydroxyethylcellulose and sodium hyaluronate are available without preservatives.

○ The preservative that most often causes eye irritation is benzalkonium chloride.

○ If more than six applications are used daily, consider using a preservative-free product as the risk of irritation from the preservative increases with the frequency of dosing.

→ ■ For people with severe symptoms, preservative-free artificial tears are suitable. Consider adding an ocular lubricant ointment to use at night.

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with placebo drops even in those who are subsequently shown to have bacterial infections on laboratory testing. In other words, most infections resolve spontaneously. In Ellie's situation it would be important to find out her mum's ideas, concerns and expectations about conjunctivitis and its management. She may be very insistent on a prescription, and many GPs would be persuaded by her wishes and issue one, especially given the time pressures of a consultation. If possible, time spent listening to her concerns, and addressing them could avoid a prescription and a rerun of this scenario in the future.

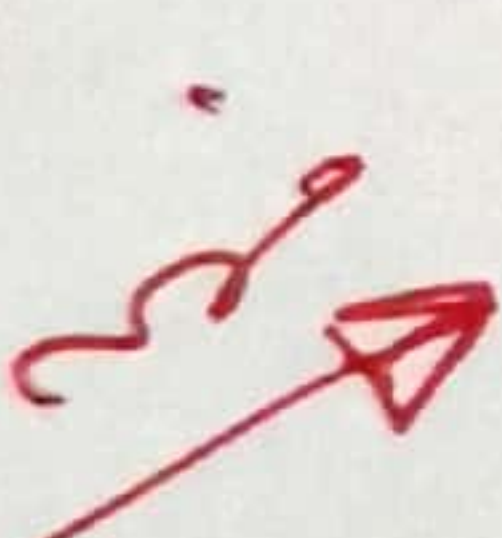
### *The parent's view*

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Eye and Ear Problems

I wasn't happy with the pharmacist. I come here a lot for advice and usually he's really good. But this time he told me that the infection would probably go away by itself without treatment. And in any case he said he couldn't sell me anything, and I would have to take Ellie to the doctor. I was worried that the infection might get worse or even damage Ellie's eyesight for the future. Anyway, the doctor gave me some eye ointment and the infection cleared up in a few days. I don't see why the pharmacist couldn't have done the same.

## Common ear problems



Although the treatment of common ear problems is straightforward, it does depend on accurate diagnosis and may require a prescription. It is not always possible to determine the problem from the story. A key issue for the pharmacist is the potential risk from not examining the inside of the ear and seeing how the ear looks. Unless the pharmacist is trained in clinical examination of the ear, diagnosis is best made by the doctor, who can examine the ear with an auroscope (also known as an otoscope). Referral to the doctor is therefore advisable for most ear problems. Ear problems that commonly present are described below.

### What you need to know

Earwax  
 Otitis externa (OE)  
 Otitis media  
 Glue ear  
 One or both ears affected?  
 Symptoms – pain, itching  
 Is there any hearing loss?



## Significance of questions and answers

### → Earwax

Earwax is a normal physiological substance in the ear canal. It is produced by ceruminous glands, which are modified sweat glands lying within the ear canal. The wax (cerumen) aids removal of skin debris from the ear canal and cleans, lubricates and protects the lining of the ear canal; it also has antibacterial properties. Wax is usually soft and works its way out of the ear, but excessive build-up of hard earwax can develop in some people. Cotton wool buds should never be poked into the ear to clean or clear it as wax is pushed further in and it is possible to damage the eardrum.

### ✓ Symptoms

Wax blocking the ear is one of the commonest causes of temporary deafness. It may also cause a discomfort and a sensation that the ear is blocked. Rarely, it can cause dizziness and nausea.

### ✓ Management

#### ✓ Ear drops

The ear can often be unblocked by using ear drops, which soften wax and sometimes allow it to run out. Ideally the ear should be examined prior to use. Many people have had recurrent problems, recognise the symptoms and will purchase these drops from the pharmacy. If this is not adequate to clear the problem, the ear drops will have softened the wax, enabling ear irrigation at the GP surgery. Some pharmacists (and optometrists) now offer a service to remove wax. In some people with complicated ear problems, suction clearance of wax is advised by an ear specialist.

#### Recommendations for use of ear drops to soften earwax

- Do not advise drops if you suspect the person has a perforated tympanic membrane (usually determined from previous history).
- Prescribe ear drops for 3–5 days initially, to soften wax and aid removal.
- Olive oil or almond oil drops can be used three to four times daily for 3–5 days (do not prescribe almond oil ear drops to anyone who is allergic to almonds).
- Sodium bicarbonate 5% ear drops can also be used.
- Warm the drops before using them (e.g. let the bottle stand in the room for about half an hour or place the bottle in warm water).
- Pour a few drops into the affected ear.
- Lie with the affected ear uppermost when putting in drops.

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- Stay like this for 2–3 min to allow the drops to soak into the ear and the earwax.
- Warn the person that instilling ear drops may cause transient hearing loss, discomfort, dizziness and irritation of the skin.

Source: Adapted from NHS Clinical Knowledge Summaries: <https://cks.nice.org.uk/earwax>.

A systematic review found that oil-based and water-based preparations are equally effective at clearing earwax and for softening earwax before ear irrigation.

**Prevention.** In people with recurrent problems due to earwax, regular use of ear drops may be helpful to prevent build-up of wax. Some people recommend once weekly.

**Ear irrigation.** If any wax remains despite this treatment, referral to the doctor or nurse is advisable. An electronic ear irrigator is used, which directs a regulated pressurised flow of water at body temperature into the ear. The use of drops for 3–5 days to soften the wax prior to this is recommended to make the procedure more effective.

## Otitis externa

Otitis externa (OE) involves inflammation and infection of the skin in the ear canal. One in 10 people experiences it at some time in their life. OE may be localised or diffuse. In the former (due to a furuncle or boil), the main symptom is severe ear pain and, in the latter, a combination of some or all of pain, itching, hearing loss and discharge. Sometimes the ear canal is a site of eczema, which causes OE and may become secondarily infected.

OE can be precipitated by ear trauma (scratching, foreign bodies and use of cotton buds), swimming (especially in dirty or polluted water), chemicals (hairspray, hair dyes, shampoo and drops for earwax [ceruminolytics]) and skin conditions (eczema, seborrhoeic dermatitis and psoriasis). OE is five times more common in swimmers than in non-swimmers. It is more frequent in hot and humid environments and is 10 times more common in summer than winter.

## Symptoms

The symptoms of OE are usually pain, itchiness and discharge. A boil (furuncle) can cause intense pain because of pressure in the confined skin and cartilage of the ear canal. Referral to the doctor may be necessary for accurate diagnosis.

It is possible that the same symptoms can arise from a middle ear infection (otitis media) with a perforated eardrum. In such a situation, which usually involves a child, the middle ear infection is likely to be associated with an upper respiratory tract infection. As the middle ear infection develops, so does the pain. It is often intense and remains so until the drum perforates, alleviating the pressure and pain and leading to a discharge.



## Management

A good history is essential, including questions about any previous OE and recent foreign travel (association with swimming pools). Patients with OE should be referred to their local surgery, where they may be seen by a GP or a nurse. Some surgeries have a policy of taking a swab to enable treatment with an antibiotic to which the responsible bacterium is sensitive, rather than treating on a trial-and-error basis, which may lengthen time to healing. Thorough cleansing of the external ear canal is needed in severe cases of OE. This is performed under direct vision using microsuction or dry swabbing by an ear specialist. In some severe cases the ear may be packed with an antiseptic ribbon and intravenous antibiotics are used.

### Acute localised otitis externa

Acute localised OE is caused by a boil (furuncle) in the ear canal and can be intensely painful. There may be associated cellulitis; if so systemic antibiotics should be started and *flucloxacillin* would be the treatment of choice. Regular analgesics help and effective pain relief can be achieved using *paracetamol*. This can be combined with *codeine* when the pain is more severe, although the evidence of benefit is not definitive. Applying heat by holding a hot flannel against the ear can help to relieve pain.

### Diffuse otitis externa

Approximately 90% of diffuse OE cases are bacterial. *Pseudomonas* infections account for two-thirds, and *Staphylococcal* are the next most common. The remaining 10% of infections are fungal, and *Aspergillus* is the most common form. Topical treatments containing an antibiotic alone or in combination with a corticosteroid are effective.

For people who are prone to recurrent OE, the following self-care advice is helpful.

### Self-care advice

- Avoid damage to the external ear canal.
- If earwax is a problem, the person should seek professional advice and have it removed safely to avoid damaging the ear canal.
- Cotton buds or other objects should not be used to clean the ear canal.
- Keep the ears clean and dry by:
  - Using ear plugs and or a tight fitting cap when swimming – people with an acute episode of otitis externa should abstain from water sports for at least 7–10 days
  - Using a hair dryer (at the lowest heat setting) to dry the ear canal after hair washing, bathing or swimming



- Keeping shampoo, soap and water out of the ear when bathing and showering
- Ensure skin conditions that are associated with the development of otitis externa are well controlled:
  - If the person is allergic or sensitive to ear plugs, hearing aids or earrings, they should avoid them or use alternatives (for example, hypoallergenic hearing aids are available).
  - If the person has a chronic skin condition (for example, eczema or psoriasis), they should ensure that this is well controlled if possible.
- Consider using acidifying ear drops or spray (such as EarCalm<sup>®</sup>) shortly before swimming, after swimming and at bedtime. These ear drops are available to purchase OTC at pharmacies.

Source: From NHS Clinical Knowledge Summaries: <https://cks.nice.org.uk/otitis-externa>.

### Otitis media

Otitis media is an infection of the middle ear compartment. The middle ear lies between the outer ear canal and the inner ear. Between the outer ear and the middle is the eardrum (tympanic membrane). The middle ear is normally an air-containing compartment that is sealed from the outside apart from a small tube (the Eustachian tube), which connects to the back of the throat. Within the middle ear are tiny bones that transmit the sound wave vibrations of the eardrum to the inner ear.

A viral cold, especially in children, can lead to blockage of the Eustachian tube and fluid formation within the middle ear. This causes symptoms of pressure and pain (otalgia). Sometimes the fluid can then be secondarily infected by a bacterial infection. Usually the best treatment is pain relief with *ibuprofen* or *paracetamol* as antibiotics make little difference, even if there is a bacterial infection. Children under 2 years, or where there is discharge from the ear, should be referred to the GP practice. If the pain persists for more than a few days, or if the child is unwell (e.g. high fever, very restless or listless, vomiting), then the child should be seen by a doctor. Management of this common condition is described in Chapter 1 Respiratory Problems: Earache.

### **Glue ear**

Some children develop glue ear (also known as serous otitis media). This occurs because the fluid that forms in the middle ear does not drain out completely. In about 50% of cases it follows acute otitis media. The fluid becomes tenacious and sticky. If it affects both ears, it can cause deafness, and in younger children this can interfere with language development. Initially, observation over 6–12 weeks may be appropriate for most children, as spontaneous resolution is

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## Chapter 2

# Gastrointestinal Tract Problems

### Mouth ulcers

Mouth ulcers are common, with recurrent aphthous ulcers affecting as many as one in five of the population. They are classified as aphthous (1- minor or 2- major) or 3- herpetiform ulcers. Most cases (more than three-quarters) are minor aphthous ulcers, which are self-limiting; they are not associated with systemic diseases and their cause is unknown. Other types of ulcer may be due to a variety of causes including infection, trauma and drug allergy. However, occasionally mouth ulcers appear as a symptom of serious disease such as carcinoma. The pharmacist should be aware of the signs and characteristics that indicate more serious conditions.

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### What you need to know

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- 1 → Age  
Child, adult
- 2 → Nature of the ulcers  
Size, appearance, location, number
- 3 → Duration
- Previous history
- Other symptoms
- Medication



## Significance of questions and answers

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Gastrointestinal Tract Problems

### Age

Patients with aphthous ulcers may describe a history of recurrent ulceration, which began in childhood and has continued ever since. Minor aphthous ulcers are more common in women and occur most often between the ages of 10 and 40 years.

### Nature of the ulcers

Minor aphthous ulcers usually occur in crops of one to five. The lesions may be up to 5 mm in diameter and appear as a white or yellowish centre with an inflamed red outer edge. They are painful, clearly defined, round or ovoid, shallow ulcers confined to the mouth. Common sites are the tongue margin and inside the lips and cheeks. The ulcers tend to last from 5 to 14 days.

Major aphthous ulcers are an uncommon severe variant of the minor ones. The ulcers that may be as large as 30 mm in diameter can occur in crops of up to 10. Sites involved are the lips, cheeks, tongue, pharynx and palate. They are more common in sufferers of ulcerative colitis.

Herpetiform ulcers are a variant of aphthous ulcers that present as multiple pinhead-sized ulcers that may fuse to form much larger, irregular-shaped ulcers and are very painful. In addition to the sites involved with aphthous ulcers, they may affect the floor of the mouth and the gums. These ulcers are called 'herpetiform' because the clinical appearance suggests a viral cause, but they are not caused by viral infection. They usually last 10–14 days. Table 2.1 summarises the features of the three main types of aphthous ulcers.

Aphthous ulcers should not be confused with cold sores, caused by herpes zoster virus, which are small blisters that usually develop on the skin and lips

**Table 2.1** The three main types of aphthous ulcers

Minor	Major	Herpetiform
80% of patients	10–12% of patients	8–10% of patients
2–10 mm in diameter (usually 5–6 mm)	Usually over 10 mm in diameter; may be smaller	Pinhead sized
Round or oval	Round or oval	Round or oval; coalesce to form irregular shape as they enlarge
Uncomfortable but eating not affected	Prolonged and painful ulceration; may present patient with great problems – eating may become difficult	May be very painful



around the mouth (see Chapter 3 Skin Conditions: Cold sores). Cold sores often begin with a tingling, itching or burning sensation.

Systemic conditions such as Behçet's syndrome and erythema multiforme may produce mouth ulcers, but other symptoms would generally be present (see below).

### ✓ Duration

Minor aphthous ulcers usually heal in less than 1 week; major aphthous ulcers take longer (10–30 days). Where herpetiform ulcers occur, fresh crops of ulcers tend to appear before the original crop has healed, which may lead patients to think that the ulceration is continuous.

### Oral cancer

Any mouth ulcer that has persisted for longer than 3 weeks requires immediate referral to the dentist or doctor because an ulcer of such long duration may indicate serious pathology, such as carcinoma. Most oral cancers are squamous cell carcinomas, of which one in three affects the lip and one in four affects the tongue, often the undersurface. The development of a cancer may be preceded by a premalignant lesion, including erythroplasia (red) and leucoplakia (white) or a speckled leucoplakia. Squamous cell carcinoma may present as a single ulcer with a raised and indurated (firm or hardened) border. They may be painless initially. Common locations include the lateral border of the tongue, lips, floor of the mouth and gingiva. The key point to raise suspicion would be a lesion that has lasted for several weeks or longer. Oral cancer is much more common in smokers than non-smokers.

### Previous history

There is often a family history of mouth ulcers (estimated to be present in one in three cases). Minor aphthous ulcers often recur, with the same characteristic features of size, numbers, appearance and duration before healing. The appearance of these ulcers may appear to follow trauma to the inside of the mouth or tongue, such as biting the inside of the cheek while chewing food. Episodes of ulceration generally recur after 1–4 months. However, trauma is not always a feature of the history, and the cause of minor aphthous ulcers remains unclear despite extensive investigation.

③ Ill-fitting dentures may produce ulceration, and, if this is a suspected cause, the patient should be referred back to the dentist so that the dentures can be refitted. Another problem that can occur in relation to dentures is candidal infection (thrush). Often this also involves redness, fissuring and soreness at the angle of the mouth (cheilitis). If this is suspected, *miconazole gel* can be used (or oral *fluconazole*) to treat the infection (see Chapter 8 Childhood Conditions: Oral thrush). Advise hygiene measures that involve leaving the dentures

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out for at least 6 h in each 24 h period to promote healing of the gums. Sometimes longer is needed. The dentures should be cleaned and then soaked in a disinfectant solution, for example, *chlorhexidine*, overnight. The dentures can be soaked in any solution marketed to sterilise baby's bottles (providing the dentures contain no metal).

④ In women, minor aphthous ulcers often precede the start of the menstrual period. The occurrence of ulcers may cease after pregnancy, suggesting hormonal involvement. Stress and emotional factors at work or home may precipitate a recurrence or a delay in healing but do not seem to be causative.

⑤ Deficiency of iron, folate, zinc or vitamin B<sub>12</sub> may be a contributory factor in aphthous ulcers and may also lead to glossitis (a condition where the tongue becomes sore, red and smooth) and angular stomatitis (where the corners of the mouth become sore, cracked and red).

⑥ Food allergy is occasionally the causative factor, and it is worth enquiring whether the appearance of ulcers is associated with particular foods.

### Other symptoms

The severe pain<sup>1</sup> associated with major aphthous or herpetiform ulcers may mean that the patient finds it difficult to eat<sup>2</sup> and, as a consequence, weight loss<sup>3</sup> may occur. Weight loss would therefore be an indication for referral.

In most cases of recurrent aphthous mouth ulcers, the disease eventually burns itself out over a period of several years. Occasionally, as in Behçet's syndrome, there is progression with involvement of sites other than the mouth. Most commonly, the vulva<sup>4</sup>, vagina<sup>5</sup> and eyes are affected, with genital ulceration and iritis.

Behçet's syndrome can be confused with erythema multiforme, although in the latter there is usually a distinctive rash present on the skin. Erythema multiforme is sometimes precipitated by an infection or drugs (sulphonamides being the most common).

Mouth ulcers may be associated with inflammatory bowel disorders or with coeliac disease. Therefore, if persistent or recurrent diarrhoea is present, referral is essential. Patients reporting any of these symptoms should be referred to their GP surgery.

Rarely, ulcers may be associated with disorders of the blood including anaemia, abnormally low white cell count or leukaemia. It would be expected that in these situations there would be other signs of illness present and the sufferer would present directly to the doctor.

### Medication

The pharmacist should establish the identity of any current medication, since mouth ulcers may be produced as a side effect of drug therapy. Drugs that have been reported to cause the problem include *aspirin* and other non-steroidal

Referral conditions:

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anti-inflammatory drugs (NSAIDs), cytotoxic drugs, *nicorandil*, *beta-blockers* and *sulphasalazine* (sulfasalazine). Radiotherapy may also induce mouth ulcers. It is worth asking about herbal medicines because *feverfew* (used for migraine) has been known to cause mouth ulcers.

It would also be useful to ask the patient about any treatments tried either previously or on this occasion, and the degree of relief obtained. The pharmacist can then recommend an alternative product where appropriate.

### ✓ When to refer

- Duration of longer than 3 weeks
- Associated weight loss
- Ulcer suggestive of cancer
- Involvement of other mucous membranes or eyes
- Rash
- Suspected adverse drug reaction
- Diarrhoea

### ✓ Treatment timescale

If there is no improvement after 1 week, the patient should see the doctor.

### Management

Symptomatic treatment for aphthous ulcers can relieve pain and may reduce healing time. Active ingredients include antiseptics, corticosteroids and local anaesthetics. There is evidence from clinical trials to support use of topical corticosteroids and *chlorhexidine mouthwash*. Gels and liquids may be more accurately applied using a cotton bud or cotton wool, provided the ulcer is readily accessible. Mouthwashes can be useful where ulcers are difficult to reach.

### ✓ Chlorhexidine gluconate mouthwash

There is some evidence that *chlorhexidine mouthwash* reduces duration and severity of ulceration. The rationale for the use of antibacterial agents in the treatment of mouth ulcers is that secondary bacterial infection frequently occurs. Such infection can increase discomfort and delay healing. *Chlorhexidine helps to prevent secondary bacterial infection*, but it does not prevent recurrence. It has a bitter taste and is available in peppermint as well as



standard flavour. Regular use can stain teeth brown – an effect that is not usually permanent. Advising the patient to brush the teeth before using the mouthwash can reduce staining. The mouth should then be well rinsed with water as *chlorhexidine* can be inactivated by some toothpaste ingredients. The mouthwash should be used twice a day, rinsing 10 ml in the mouth for 1 min, and continued for 48 h after symptoms have gone.

### ✓ Topical corticosteroids

*Hydrocortisone* acts locally on the ulcer to reduce inflammation and pain and is thought to shorten healing time (although evidence is weak). It is available as muco-adhesive tablets (2.5 mg) for use by adults and children over 12. A tablet is held in close proximity to the ulcer until dissolved. This can be difficult when the ulcer is in an inaccessible spot. One tablet is used four times a day. Explain that the tablet should not be sucked, but dissolved in contact with the ulcer. Advise that the treatment is best used as early as possible. Before an ulcer appears, the affected area feels sensitive and tingling – the prodromal phase – and treatment should start then. Corticosteroids have no effect on recurrence.

### ✓ Local analgesics

*Benzydamine mouthwash* or *spray* and *choline salicylate dental gel* are short acting but can be useful in very painful ulcers. The mouthwash is used by rinsing 15 ml in the mouth three times a day.

Numbness, tingling and stinging can occur with *benzydamine*. Diluting the mouthwash with the same amount of water before use can reduce stinging. The mouthwash is not licensed for use in children under 12. *Benzydamine spray* is used as four sprays onto the affected area three times a day. Choline salicylate gel is contra-indicated in children under 16 years of age because of possible links with Reye's syndrome.

### ✓ Local anaesthetics (e.g. lidocaine [lignocaine] and benzocaine)

Local anaesthetic gels are often requested by patients. Although they are effective in producing temporary pain relief, maintenance of gels and liquids in contact with the ulcer surface is difficult. Reapplication of the preparation may be done when necessary. Tablets and pastilles can be kept in contact with the ulcer by the tongue and can be of value when just one or two ulcers are present. Any preparation containing a local anaesthetic becomes difficult to use when the lesions are located in inaccessible parts of the mouth.

Both *lidocaine* and *benzocaine* have been reported to produce sensitisation, but cross-sensitivity seems to be rare, probably because the two agents are from

للأداة المفضلة :-  
 - كيفية استخدامه  
 - مدة العلاج (لمرة في اليوم)  
 - العمر المسموح  
 - مآل شير (فإن يكونه محذر، يمكن مضاد التهاب ...)