Ear Infections

Overview

Ear infections are commonly regarded as a childhood illness - most suffer an episode during this period. But it is important to remember that adults can also develop infections in one of the three parts that make up the ear - the outer, middle and inner ear.

Ear infections range from minor to very painful and potentially serious medical emergencies. There are many causes, including bacteria, virus and fungus.

The most frequent acute infections are those of the outer canal and the middle ear. Inner ear infections are less common. The symptoms include the specifically ear symptoms - pain, itch and tenderness, discharge, noise (tinnitus) or dizziness.

Causes

1. External Ear Infections

(otitis externa, swimmer's ear, tropical ear) Infections of the external canal are commonly bacterial, but fungi also play a major role. Both forms are commonly associated with warm and humid conditions, or swimming, particularly in dirty water. Inappropriate cleaning techniques that damage the skin inside the ear can allow the infection to take root.

In both forms, the ear may become blocked and painful. If the infection is fungal it may be very itchy.

If the infection is viral there may be blisters on the eardrum, or in some case of herpes zoster infections (varicella/chicken pox virus) the blisters can also be in the ear canal and on the outside of the ear. Often with this type of infection the side of the face that has the ear infection may become paraylsed.

2.Middle Ear Infections

There are a few different types of middle ear infections including acute otitis media (AOM), chronic otitis media (COM), and cholesteatoma)

- **Acute otitis media** is a bacterial infection of the middle ear, common in children aged 5-7. It is often preceded by an upper respiratory tract infection (URTI: colds, influenza). In these cases the germs that infect the nose can get into the Eustachian tube which connects the nose and the middle ear. The tube is shorter and more horizontal in children, making it more prone to infection when that fluid builds up. Once it gets infected pus forms and puts pressure on the eardrum. This makes it difficult for the child to hear and causes pain. It may also rupture the eardrum causing a discharge of pus from the ear.

  Although common, middle ear infections should not be dismissed lightly. Its complications include chronic otitis media, facial palsy (paralysis), severe ear infections, Meningitis and profound deafness.
- **Glue ear.** Also very frequent in young children is otitis media with effusion (OME or serous/secretory otitis media). This results from a blockage of the Eustachian tube, frequently after an acute middle ear infection or a cold. The air of the middle ear is replaced by a watery fluid, yellow pus or mucus. It is a common cause of persistent silent deafness in children and may only be noticed if there is delayed speech development or poor school progress.
- **Chronic Otitis Media (COM)** occurs when the eardrum becomes permanently perforated as a result of acute or recurrent middle ear infections due to either bacterial or fungal infections. "Simple" COM can cause serious hearing damage or mastoiditis (infection of the air chambers within the stub of bone behind the ear). Cholesteatomatous COM occurs when the skin of the ear drum starts to grow back incorrectly and forms cyst (a cholesteatoma) in the middle ear. It is not cancerous but can cause deafness and other serious complications and must be surgically removed.

  Both forms of COM can cause deafness and recurrent, sometimes foul smelling discharge.

3. Inner Ear Infections

Inner ear infections are relatively uncommon and involve either the true inner ear or the nerves in the ear.

Labyrinthitis results from infection of the inner ear itself. Bacterial infection can come from an acute middle ear infection, or more commonly, from cholesteatoma - a growth from the eardrum pushing into the middle ear. It erodes the bony wall of the inner ear, exposing the hearing and balance mechanisms. Severe vertigo, total deafness and severe noise (tinnitus) are common results and respond poorly to treatment.

Viral labyrinthitis is caused viruses like mumps, measles or influenza. It produces similar outcomes, but the hearing loss may be partial and the dizziness may be less. Herpes zoster infection causing facial paralysis may be a cause.

In contrast, viral infection of the nerve of balance to the ear (vestibular neuronitis) may cause severe vertigo, but not tinnitus or deafness, as the hearing division of the nerve is generally unaffected. The dizziness gradually fades over 6-8 weeks, perhaps with minor relapses during this period. The problem occasionally recurs many months after.

Labyrinthitis usually affect adults between their 30-60's.

Symptoms

There are a number of different types of ear infections, so symptoms will vary, depending on the type, but may include all or some of the following:

- Ear symptoms
- Earache, which can be felt inside or around the ear. The pain may worsen when the patient moves the jaw.
- Discharge from the ear.
- Difficulty hearing, mild deafness.
- Noises and muffled sounds in the ear.
- Loss of balance or dizziness (also known as vertigo).
- Associated symptoms
- Headache of varying degrees of severity.
- Fever.
- Nausea.
- Loss of appetite.
- Vomiting.
- Diarrhoea.
- Fatigue.
- Irritability.
- Other

Children may pull, tug or rub the affected ear, or may stick a finger into the ear.

Treatment

The type of treatment depends on the cause of the ear infection.

External Ear Infections

(otitis externa, swimmer's ear, tropical ear)

- This can be treated by thorough cleaning of the ear and then appropriate antibiotics or anti-fungals. Pain relief, such as paracetamol, may be necessary.

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Ear Infections

Middle Ear Infections (acute otitis media - AOM, chronic otitis media - COM, cholesteatoma)

- **Acute otitis media:** Management with antibiotics usually results in rapid improvement and resolution over 10-14 days. If discharge is present ear drops are also used.
- **Glue ear:** this is managed by treating the infection that has caused the blockage in the initial step and frequently, small tubes called grommets may be inserted into the eardrum to help keep it open to allow the fluid to drain properly. Sometimes the adenoids may be removed.
- Topical and oral decongestants are ineffective in managing ear infections, but are useful in treating colds and flu to avoid ongoing ear problems. Steroid treatments are also ineffective.
- **Cholesteatomatous COM** - a non-cancerous growth of eardrum tissue into the middle ear can cause deafness and must be surgically removed. Evaluation and management and are best handled in specialist centres. Surgery aims to eradicate the disease and repair the drum, hearing mechanisms and other damage that may be present. Elimination of infection and repair of the eardrum are usually successful, but full hearing may not return if the eardrum was severely damaged.

Inner ear infections

Labyrinthitis. Whether the cause is bacterial or viral, rest is often advised. Tablets may be given to reduce the feeling of sea-sickness from the vertigo (dizziness) or vomiting it causes.

If there is a bacterial infection antibiotics will be prescribed.

Lifestyle and Diet

It is difficult to prevent ear infections, particularly in children. Vigorous or inappropriate external canal cleaning measures should be avoided; these are often ineffective and cause more trouble than is avoided. Commercial drops to "loosen wax" are of little use; "ear candling" lacks any value.

Children's immature immune systems and their lack of expertise in personal hygiene render them susceptible to the commonly transmitted diseases, particularly the viruses that commonly precede acute middle ear infections. However, careful and continued instruction in this field is a significant benefit, as is a healthy diet and good general household hygiene. Avoiding sick siblings or peer groups is also beneficial. Effective management of colds and particularly middle ear infections can reduce the risk of ear infections.

Support & Online Services

For additional support and resources, visit

- Australian Hearing is part of the Federal Department of Human Services, and delivers services to people with hearing loss www.hearing.com.au
- The Dietitians Association of Australia has an information page to assist patients with maintaining a healthy lifestyle www.daa.asn.au
- The Australian Health Department also provides guidelines on a healthy lifestyle www.health.gov.au

It'sMyHealth

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