Tinnitus

Disclaimer

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Background

About tinnitus
- Common – symptoms and incidence increases with age
- Usually indicates a problem in the auditory system
- Serious pathology is rare but unilateral tinnitus should be investigated
- Common causes:
  - Presbycusis (age-related hearing loss)
  - Noise exposure
  - Ear related e.g. infection, damage from scuba diving, wax blocking canal
  - Stress or anxiety
  - Raised blood pressure
  - Ototoxic medication e.g. NSAIDs, loop diuretics, antibiotics, beta-blockers

Assessment

Investigate all unilateral tinnitus
Investigate all unilateral tinnitus to exclude acoustic neuroma or arteriovenous malformation.

1. Ask about nature and history of tinnitus. If:
   - constant, take a history of recent trauma, noise exposure, medication.

History

- Recent trauma e.g. loud noise, head injury, barotrauma – tinnitus usually resolves over hours.
- Most tinnitus is of gradual onset and associated with hearing loss secondary to presbycusis and/or noise damage.
- Ototoxic medication:
  - Usually dose-related and reversible e.g. diuretics, quinine.
  - If due to ototoxic chemotherapy, reversibility less likely.
   - fluctuating, with vertigo or deafness, consider Ménière’s disease.

Ménière disease

- Episodic rotational vertigo, tinnitus, and sensorineural hearing loss – usually low frequency.
- May experience a sensation of fullness in the ear.
- Tinnitus often worsens at the time of a vertiginous episode.
- Attacks last at least 20 minutes, usually hours.
- Usual patient aged 20 to 50 years.
- Males and females are equally affected.

- pulsatile, consider vascular cause.

2. if chronic tinnitus, consider anxiety and depression as a cause or an association and treat accordingly.
3. Examine:
   - ear canal and remove wax.
   - ear drum for effusion, infection, or other abnormalities.
4. Arrange an **audiogram** to check for **asymmetrical sensorineural hearing loss**.

5. If unilateral tinnitus, exclude **acoustic neuroma** or arteriovenous malformation.

### Suspected acoustic neuroma

- **Unexplained cause and asymmetry of hearing:**
  - $\geq 15$ dB at 2 consecutive frequencies (bone conduction)
  - $\geq 20$ dB at 3000 kHz (masked bone conduction)
  - $\geq 30$ dB at any frequency (masked bone conduction)

- **Any asymmetry with associated unilateral tinnitus, vertigo or imbalance, or other neurology.**

- **A family history of neurofibromatosis type 2.**
  - **Neurofibromatosis type 2**
    - A central form with central nervous system tumours rather than skin lesions.
    - Tend to have bilateral acoustic neuromas.

- If audiogram shows significant asymmetry, consider sending patient for magnetic resonance imaging (MRI) brain scan.

- If MRI is contraindicated, computer tomography (CT) may be used – but small acoustic neuromas may not show. For more information, see [Diagnostic Imaging Pathways: Tinnitus](#).

6. If **pulsatile tinnitus**, arrange CT angiography (head and neck)\(^1\).

### Pulsatile tinnitus

**Pulsatile tinnitus describes the sound of blood whooshing or pulsing in the ears and can be due to vascular anomalies.**

### Management

1. Arrange **urgent or routine ENT referral** if:
   - unilateral tinnitus plus asymmetrical hearing loss.
   - pulsatile tinnitus $>6$ months duration
   - rapidly worsening tinnitus, deafness, or loss of balance.

2. If bilateral tinnitus associated with (symmetrical) presbycusis and no other symptoms, ENT review is not needed.

3. If noise-induced hearing loss, consider [audiology referral](#) for hearing aids.

4. Aim treatment at managing the tinnitus once a serious underlying condition has been ruled out. The impact on quality of life is important.
   - Tinnitus may be associated with or aggravated by stress – consider relaxation techniques.
   - **Lifestyle changes** may be beneficial.
**Lifestyle changes**

Advise patient:
- Avoid exposure to loud noise.
- Foods do not directly cause tinnitus, but alcohol reduction may be helpful.
- Caffeine reduction e.g. coffee, tea, coke, energy drinks.
- Stress reduction e.g. regular exercise, yoga, or meditation.
- Play soothing music or white noise at night if difficulty getting to sleep when there is no background noise.

- Educate and provide patient information.
- For support groups, contact the Tinnitus Association of Victoria.

5. Consider prescribing or deprescribing medication:
- Generally, medication is of no benefit.
- If depression, anxiety, or severe tinnitus, consider tricyclic antidepressants e.g. nortriptyline hydrochloride 25 to 50 mg at night, or a selective serotonin reuptake inhibitor (SSRI).
- Stopping an ototoxic medication may help.

**Stopping ototoxic medication**

*Often, tinnitus is the first sign of ototoxicity.*

Discontinuing ototoxic medications (e.g. NSAIDs, loop diuretics, antibiotics, beta-blockers) can prevent progression to hearing loss and/or balance systems dysfunction in some patients, even if tinnitus does not resolve.

6. If patient is anxious or very disabled by symptoms, consider arranging private ENT referral or audiology referral. A private audiology provider, can provide management options, including:
- amplification or hearing aids – only useful if indicated for hearing loss via increasing the signal to noise ratio
- information and support

**Referral**

- Arrange an **urgent or routine ENT referral** if:
  - unilateral tinnitus plus asymmetrical hearing loss.
  - pulsatile tinnitus > 6 months duration.
  - rapidly worsening tinnitus, deafness, or loss of balance.

- If noise-induced hearing loss, consider audiology referral for hearing aids.

If patient is anxious or very disabled by symptoms, arrange private ENT referral or audiology referral.

- For support groups, contact the [Tinnitus Association of Victoria](#).
Information

For health professionals

Further information

➢ Patient – Tinnitus
➢ Australian Journal of General Practice – A Review of Tinnitus

For patients

➢ Better Hearing Australia – Victoria
➢ Better Health Channel – Tinnitus
➢ Beyond Blue – Relaxation Techniques
➢ Tinnitus Association Victoria

Sources

References


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