Chiropractic Management of a Patient With Tinnitus

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Background

Tinnitus is the ensation of noise or ringing in ears or head, when there is no real sound.
Heard in one or both sides of head.
Can include ringing, roaring, buzzing, clicking, beating, whooshing, whistling, humming, or other noises.
May hear it all the time, or only certain situations.
Can decrease a person's quality of life.
Symptoms experienced at different levels of severity. [1]

Pathophysiology

Can arise from pathological changes along entire auditory pathway.

Most cases develops as a result of initial cochlear lesions e.g., sudden hearing loss, noise trauma, presbycusis, or administration of ototoxic drugs.

Lesions can result in abnormal neuronal activity in central auditory pathways that can then be finally perceived as tinnitus.

Abnormal changes to auditory nerve (e.g., microvascular compression or vestibular schwannoma) can also lead to perception of tinnitus".

Not everybody with hearing loss develops tinnitus, & an abnormal audiogram is **not** detected in all patients with tinnitus.[2]

Primary - Idiopathic

May or may not be associated with sensorineural hearing loss.
Sensorineural hearing loss should be symmetrical.

Secondary – Known Cause

Cerumen impaction
Otitis Externa
Otosclerosis
Otitis Media
Cholesteotoma
Vestibular Schwannoma
Meniere's Disease
Cochleitis / Neuritis
Ototoxic medications
- Antibiotics (e.g., aminoglycosides & vancomycin)
- Diuretics (e.g., frusemide)
- CA medication
- Aspirin or other salicylates

Vascular anomalies (present as pulsatile tinnitus)
Myoclonus (stapedial myoclonus)
Nasopharyngeal carcinoma. [3]

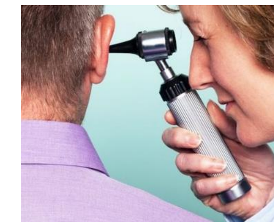
Risk Factors

Seen at any age - males or females, all ethnic groups.
Occurs more frequently in males, elderly, & non-Hispanic whites.
Higher rate among military vets.
More likely to occur in people who are overweight, obese, HTN.
Diabetes, high cholesterol, anxiety disorder.
Linked to long-term noise exposure [1].

Common Complaints

Difficulty sleeping.
Struggling to understand other's speech.
Depression.
Difficulty focusing [1].

Diagnostic Process



History
Examination
Routine cranial nerve & otological examination as well as head, neck, and cervical spine, and local muscle examination.
Audiology
Recommended especially for those presenting with hearing loss.
Imaging
Indicated in certain cases. [3]

Common Treatment Supported by Literature

Hearing Aids
Amplify peripheral & objective sounds &, treats tinnitus by making it less noticeable.
Sound Therapy
External sound is provided to auditory center, patient focuses on this sound &, therefore, has a reduced perception of tinnitus & a sense of relief.
Cognitive Behavioral Therapy
Encourages patient to examine thought process that may result in distress & negativity & teaches skills to restructure these thoughts to bring about positivity. [3]

What About Chiropractic?

Literature supporting or negating Chiropractic as an effective treatment for tinnitus is **scarce**.
One published case report supports manipulation [4].

Patient History

50-year-old male, tinnitus since November 1996.
Insidious onset - no history of trauma.
Visited 3 ENT's, inconclusive diagnosis.
1996 - Bilateral tube installation.
Bilateral tympanic membrane puncture to drain fluid.
1997 - Tubes removed.
Meditation and yoga provide relief, but he has never been able to completely rid himself of tinnitus.
Stress, loud noises, dust, and mold provoke symptoms.
Constant ringing, high-pitched. Feeling of "fullness".
6/10 on VAS
Associated symptoms - chronic ear infections as a child, history of TMJ dysfunction, chronic sinusitis, allergic rhinitis, insomnia.

Diagnostic Reasoning

1. Evaluation from history and physical exam revealed no overt signs of serious pathology.
No "red flags" from history and no neurological deficits.
2. Examination did not reproduce chief complaint.
Upper cervical joint dysfunction and masseter muscle trigger points were noted.
Vestibular apparatus testing was negative.
3. Patient admitted to stressful lifestyle.
Psychosocial risk factors are known to contribute to and exacerbate symptoms.

Treatment / Management

Literature supports the following treatment rationale [5]

1. Deep layer of masseter may become involved giving rise to tinnitus.
2. May be triggered by pressure on trigger points or may be constant.
3. Patient may be unaware of its presence until it's stopped.
4. Unilateral fluctuations in tinnitus likely to occur.

Treatment Recommendations

4–8-week trial of care consisting of cross friction massage to sinus acupressure points including the masseter, muscle stripping to upper traps, pin & stretch suboccipitals, grade V HVLA CMT to cervical joint restrictions.

Treatment Frequency

2 visits / week for 4-8 weeks

After a discussion that there was limited literature support for the proposed treatment, we could offer a trial of treatment including manual therapy if he would like.

Patient consented to trial of care.

Results

Experienced 2-3 days of "relief" post-treatment! Tinnitus diminished, pitch lowered, patient slept better! Tinnitus returned to "normal levels"/ exacerbated with increased stress. Patient reported this was the only intervention he tried that actually had some positive effect on his tinnitus.

Update

Patient visited another ENT specialist for evaluation.
Mild hearing loss bilaterally.
Prescribed hearing aids– patient hesitant at first but admits they've helped.
Patient continues to visit clinic when experiencing exacerbations.

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