

## RING IN THE NEW EAR!

Posted by Mike Karegeannes on December 9, 2015 in TMD



**You say you've got a  
ringing in your ears?!?**

Tinnitus is commonly defined in my profession as the perception of a sound in the absence of an external sound source. In essence, it's hearing something that isn't actually there, and is often described by patients as ringing in their ears. Because tinnitus may arise from so many conditions, ranging from hearing loss to high blood pressure to medications, diagnosing the cause or causes can be a challenge. For many people, the ringing begins for no obvious reason.

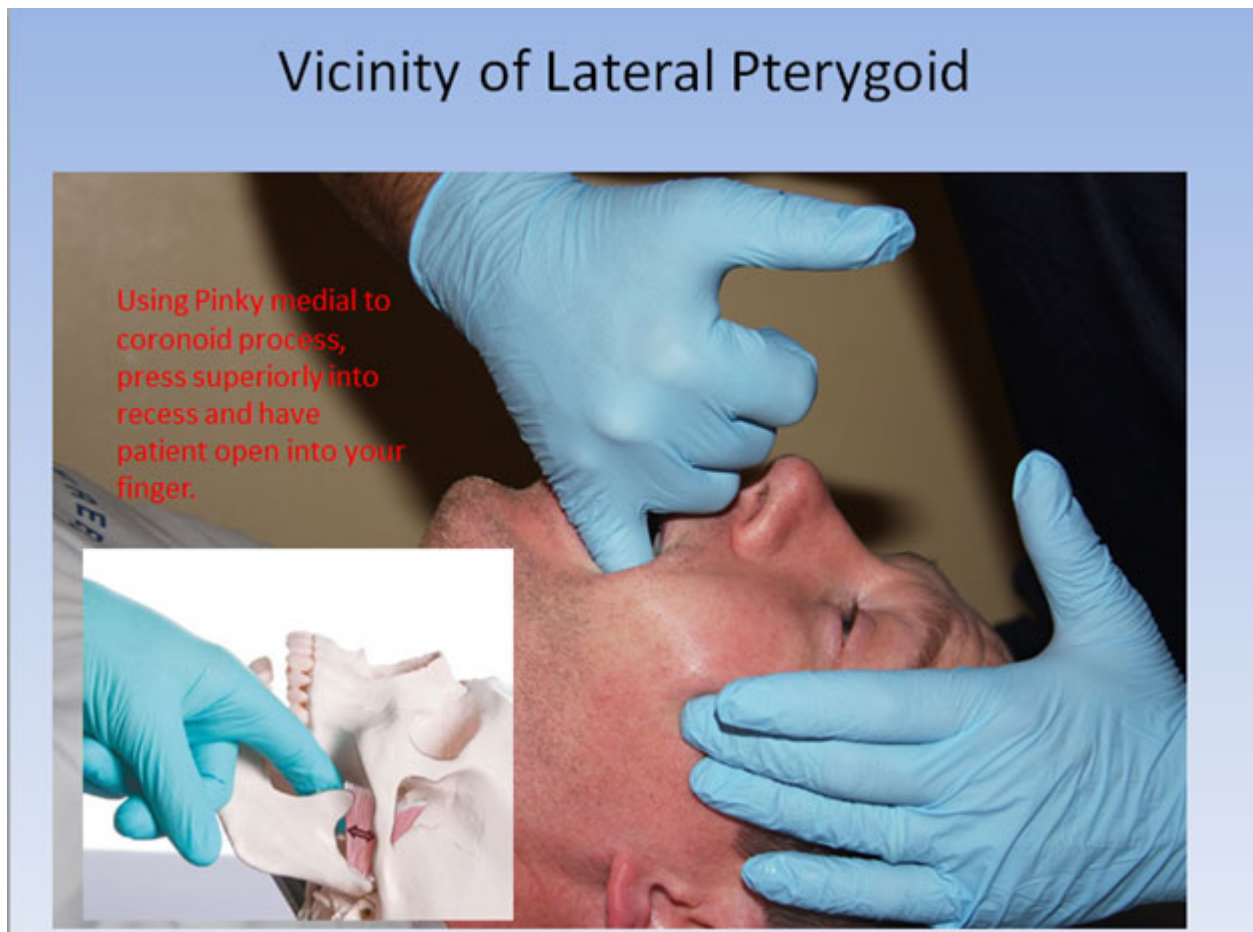
The unique cause of otic (ear) symptoms is still a mystery for many. Included among several suggested origins are Meniere's disease (a disorder of the inner ear that can affect hearing and balance), acoustic neuroma (a benign primary intracranial tumor), ear trauma, noise exposure, otosclerosis (a hereditary disorder causing progressive deafness due to overgrowth of inner ear bone), ototoxic drugs (medications known to cause permanent damage to the ear) and presbycusis (loss of hearing that gradually occurs in most individuals as they grow older), and Temporomandibular Disorders (TMD). A wide range of other causes are frequently reported in otolaryngology practice including Tinnitus accompanied by vertigo (dizziness) and other ear symptoms which have been implicated in patients with a compromised systemic condition like abnormal systolic and diastolic blood pressure levels, however no correlation has been demonstrated (Weiss, 1972; Chatellier).

As a clinician examining patients who complain of tinnitus, I feel it is very important to find out if they have been evaluated by their primary doctor, an ENT (ear, nose and throat) doctor or an otolaryngologist. If they have been cleared by one of the above professionals, I look to various muscles that have shown to possibly contribute to ringing in the ear, fullness in the ear, or slight hearing loss. I

will also attempt various mobilizations to the various cranial bones around the ear to see if I apply an input to the nervous system will that in any way alter their perception of symptoms. It is also imperative to do a complete evaluation of the temporomandibular system, craniomandibular system and cervical spine. Below I will touch upon a few areas I target to attempt to help alleviate this very annoying symptom.

If indicated, I will typically perform gentle soft tissue mobilization to the muscles mentioned below.

The lateral pterygoid muscle refers pain deep into the temporomandibular joint and to the region of the maxillary sinus, and can cause tinnitus as well.



The medial pterygoid muscle refers pain in poorly circumscribed regions related to the mouth (tongue, pharynx, and hard palate), below and behind the temporomandibular joint (TMJ), including deep in the ear, but not to the teeth. Stiffness of the ear may be a symptom of medial pterygoid TrPs (trigger points). In order for the tensor veli palatini muscle to dilate the eustachian tube, it must push the adjacent medial pterygoid muscle and interposed fascia aside. In the resting state, the presence of the medial pterygoid helps to keep the eustachian tube closed. Tense myofascial TrP bands in the medial pterygoid muscle may block the opening action of the tensor veli palatini on the eustachian tube producing baro hypoacusis (ear stuffiness).

## Medial Pterygoid



***Myofascial Pain and Dysfunction: The Trigger Point Manual, Janet G. Travell, David G. Simons, Lippincott Williams & Wilkins, 1992***

Ear Symptoms such as ringing/fullness in the ears may be related to an increase in activity of:

- Tensor Typani
- Tensor Veli Palatini
- Levator Veli Palatini

***“it is understood that anatomically they are muscles of the middle ear although they are really muscles of mastication because they are modulated by motor neurons coming from the trigeminal motor nucleus”***

***“jaw muscular activity may cause ear symptoms resulting from the tensor typani and tensor veli palatine muscles participation”***

***Ramirez, A. L. M.; Sandoval, O. G. P. & Ballesteros, L. E.; Theories on Otic Symptoms in Temporomandibular Disorders: Past and Present; Int. J. Morphol., 23(2):141-156, 2005.***