

Tensor tympani spasms. Diagnosis and treatment



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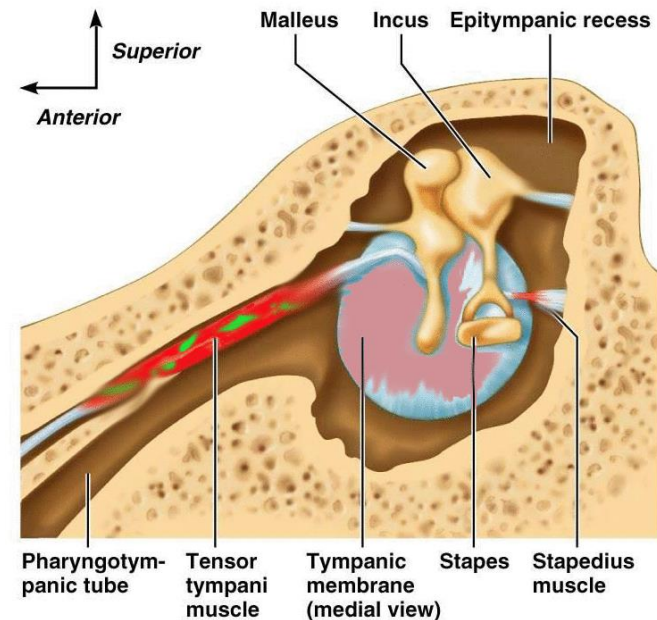
M. tensor tympani – anatomy and function

Anatomy

- 2 cm long striated muscle
- Originates from wall of auditory tube and wall of its own canal
- Inserts on handle of malleus
- Innervated by NV branch

Function

- Pulls the manubrium medially
- Increases stiffness of the ossicular chain and tympanic membrane
- Low-frequency conductive hearing loss?
- Tubal function, synergy with M. tensor veli palatini?
- (Involuntary versus voluntary)



Clinical picture and treatment of spasms

Symptoms and findings

- Complaints of fullness, tinnitus, dysacusis
- Startle reaction (puff of air against orbita), sounds
- Tactile stimulation of face, swallowing, phonation, movement of neck
- Oscillations on reflex-decay recordings
- Otherwise normal otological examinations

Treatment

- No consensus – only case reports
- Surgical: tenotomy of muscle (often including m. stapedius)
- Medical: muscle relaxants, sedatives, anticonvulsants,
- Botulinum Toxin
- Relaxation therapy

Patient case – symptoms

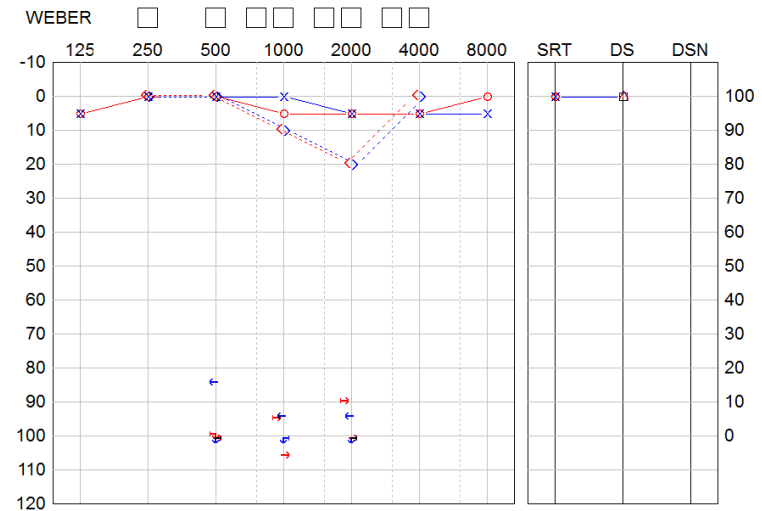
- Forty-three year old woman referred with almost constant tinnitus for more than 1½ year
- The sound was low frequency – deep rumbling sound
- In cases of occasional silence, the noise came back by striking the cheek or the outer ear; by speech; and by sounds;
- Muscular problems related to back of her the neck, hypertrophic masseter muscles and bruxism

- The patients mental condition was severely affected by the noise, and she was reported on sick leave from her job

- No previous problems related to her ears

Patient case – findings

- Normal otomicroscopy, audiometry, and tympanometry
- No signs of oscillations on reflex decay recordings
- Hypertrophic masseter muscles



Surgeries – findings

2015-08 Tympanotomy GA

- Normal approach
- sectioning of the tendon incl stapedial tendon

2015-12 Tympanotomy GA

- Normal approach
- injection of Botox into tendon

2016-06 Tympanotomy GA with

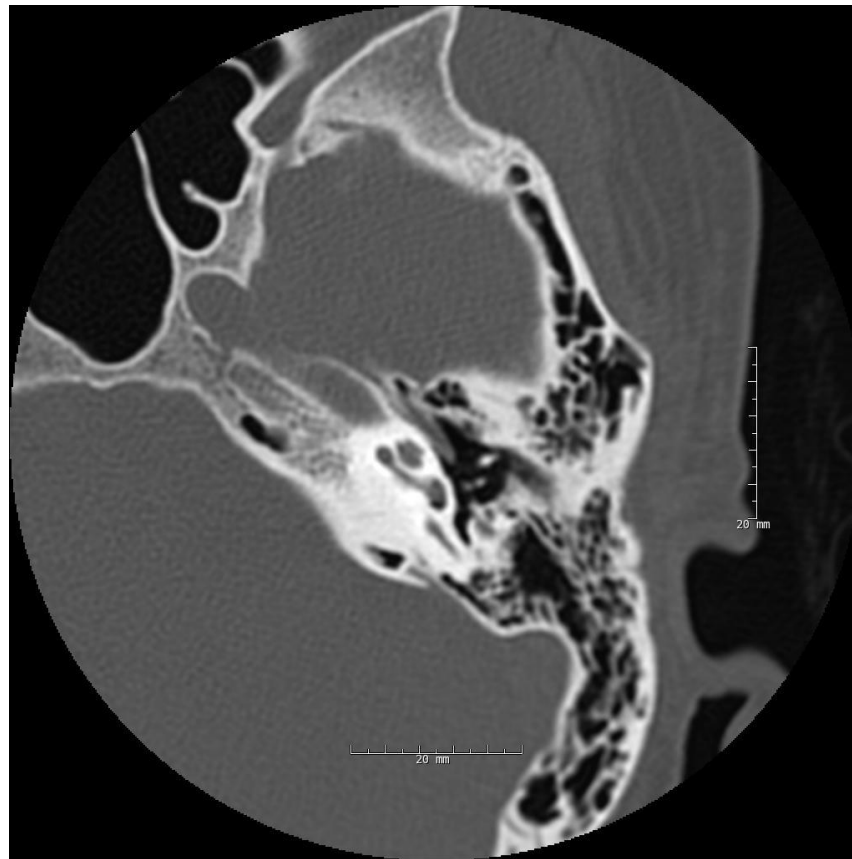
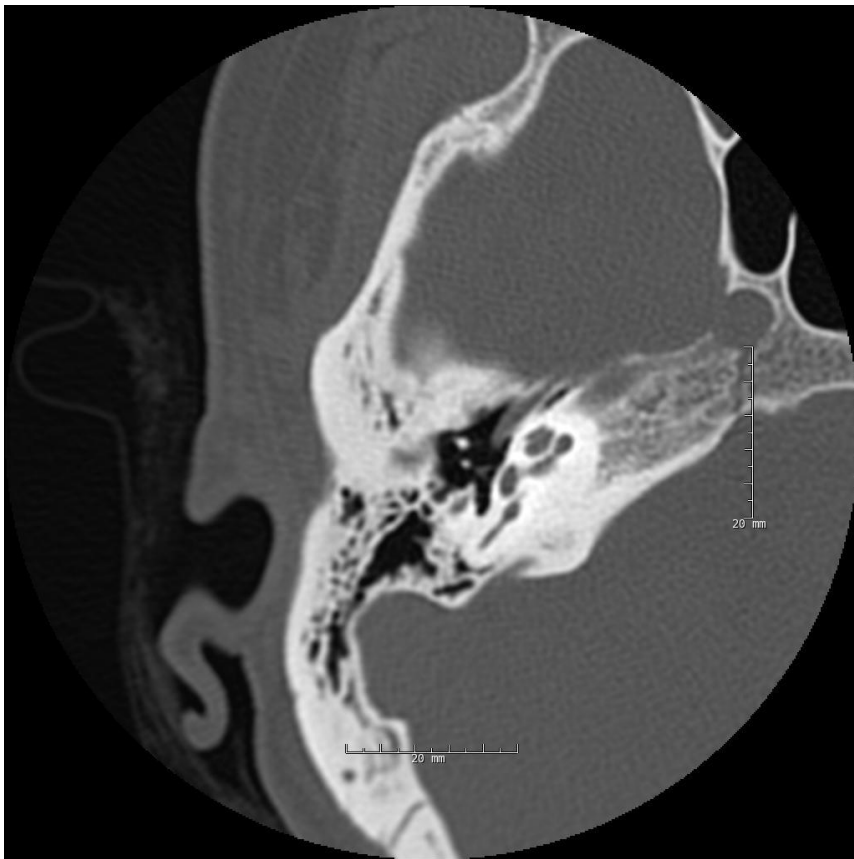
- Superior tympanotomy
- Resection of the bulk of tendon and muscle tissue;
- Secondary obliteration of the canal with cartilage and perichondrium

- Normal ME with no signs of spasms
- Resulted in a smaller insignificant reduction of the noise

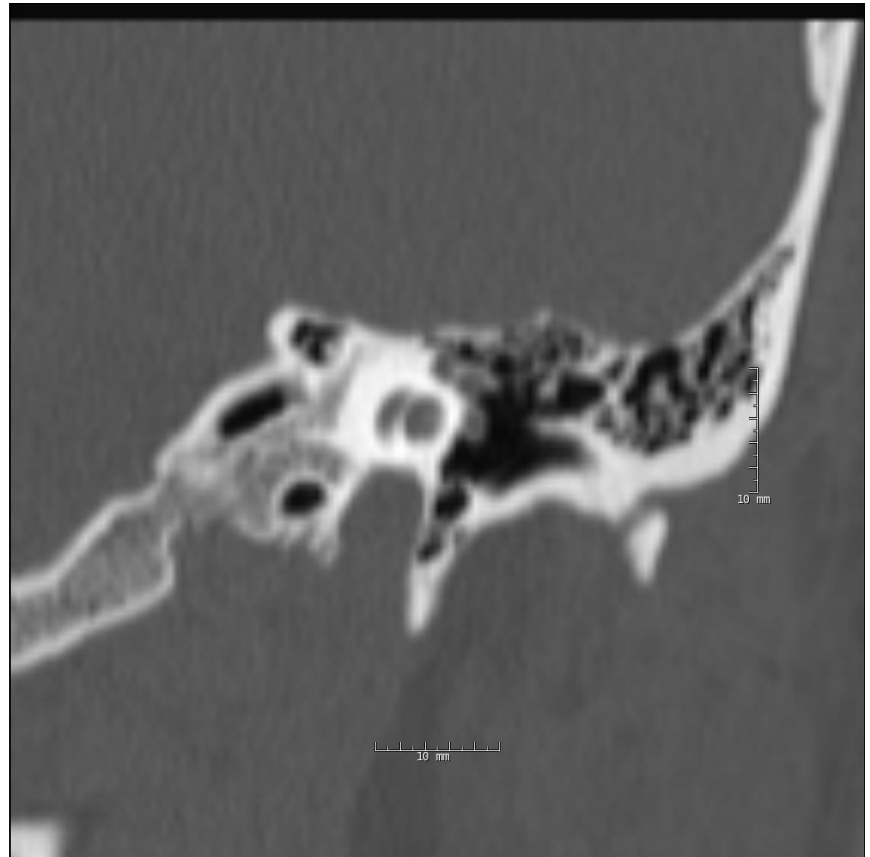
- Complete recovery, but only lasting for 4-5 days
- No adverse effects

- Mass of hypertrophic tendon and muscle with diameter around 2 mm with bony dehiscence
- Complete recovery (3 months)
- No adverse effects

CT-scanning of the ME



CT-scanning of the ME



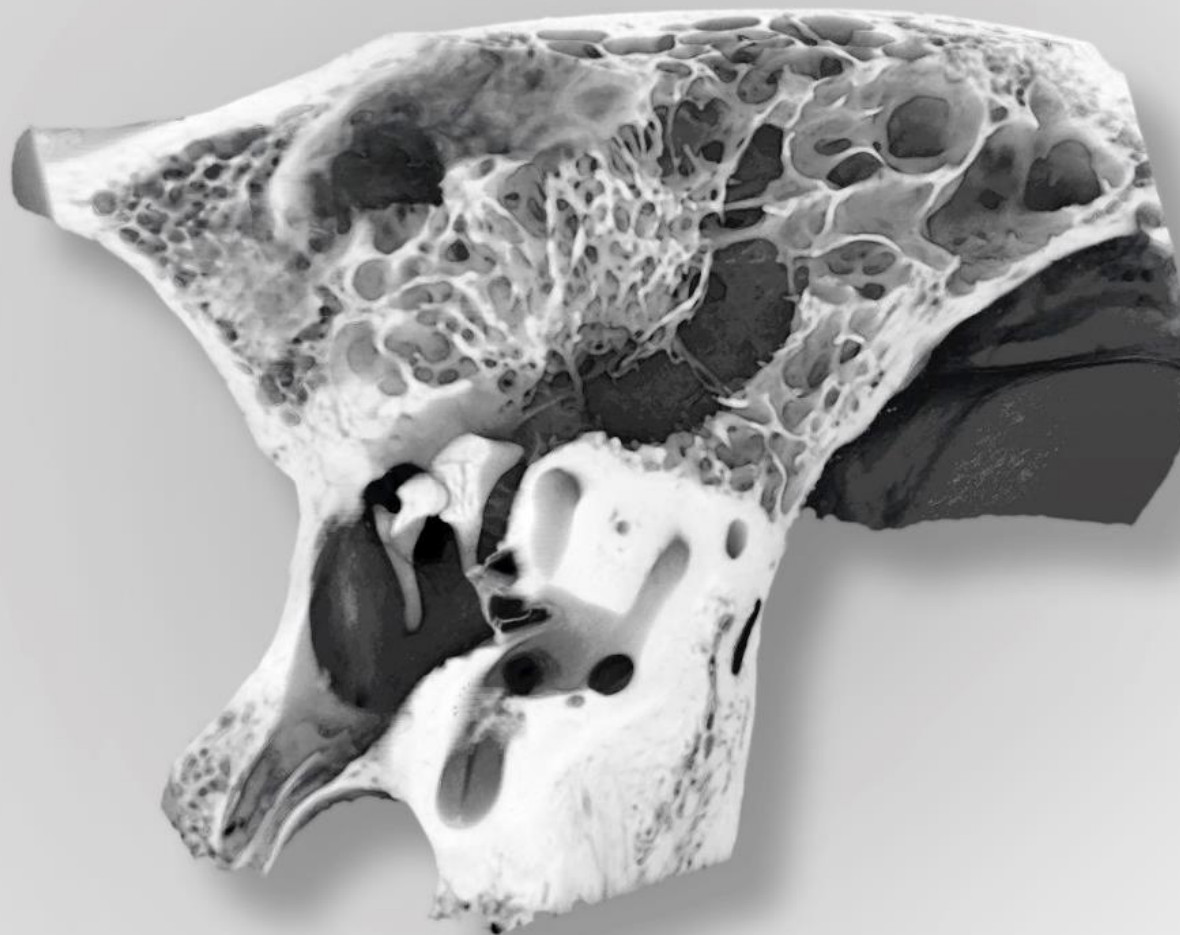
Discussion

- Rare occurrence and diagnosis often delayed
- Related to other muscular problems of the head and neck?
- Condition can result in seriously mental effects

- Role of CT imaging limited?

- Botox – no lasting effect
- Tenotomy versus resection of the tendon and muscle

- Long-term follow-up is needed to evaluate final outcome
- Possibly reveal functional properties of the tensor tympani



Thank you for your attention

Classical versus superior tympanoplasty

