

COX[®] SYMPOSIUM

NASHVILLE, TN

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presentation by

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Case Report

66 year male neck and ear pain from car crash

History

- Referred to office by EENT physician
- Presenting complaints nearly 6 months' duration
- Bilateral neck pain, "fuzzy memory" of the crash
- HA, left ear pain and sense of fullness, "hard to hear"
- Restrained driver of his vehicle, rear end crash
- Hospital by ambulance with hard cervical collar
- Exam and x-rays were read as "normal."
- Given pain meds and "see family doctor" instruction by emergency room physician.
- Hypertension and diabetic

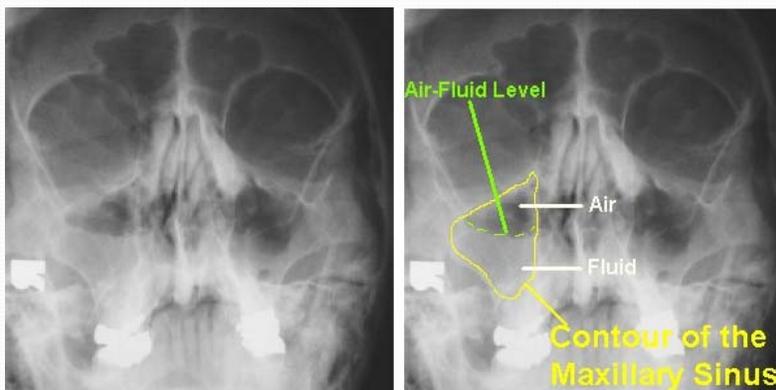
History and Examination

- Meds and 5 months of physical therapy not helping his neck and ear complaints
- Sent to EENT specialist by PCP
- Diagnosis otalgia left ear
- CT of temporal bones;
 - Normal appearing CT scan of the temporal bones
 - Paranasal sinus inflammatory changes
 - 12 mm retention cyst left side of sphenoid sinus
 - Moderate mucosal thickening present in the maxillary and ethmoid sinus
 - Bubbly secretions present in the left maxillary sinus

Retention Cyst

- Retention cysts of the maxillary sinus are an incidental finding on radiographs. These cysts usually appear as rounded, dome-shaped, soft tissue masses, most often on the floor of the maxillary sinus.
- Most retention cysts of the maxillary sinus spontaneously regressed or showed no significant change in size over the long term. These findings suggest that, in the absence of associated complications, "wait and see" may be the appropriate management strategy for these retention cysts.
- It may be seen on the Waters view plain film radiographs.

Waters View – CR P to A @ 37 ° Head Tip



Examination

- PIS 5/10, Oswestry 18/50 or 36%
- Ht 69" (175.26 cm) Wt 205 lbs (93.18 kg)
- Vitals unremarkable
- Significantly reduced CROM, pain intensifies on extension and left lateral bending
- Stroke scan negative
- +2 pain on palpation left C2/3 and C6/7
- L'Hermitte's and Soto Hall negative
- Multiple myofascial trigger points (MFTP's) present in the SCM, splenius capitis, digastric and trapezius at TrP-1

Examination continued

- Cervical spine x-rays are taken to include flexion-extension.
- They are reviewed by a chiropractic radiologist
- CT scan requested.
- Hospital records requested.

Radiologist's Report

- Multilevel disc degeneration C₃₋₄ through C_{6/7}
- Diffuse uncovertebral arthrosis
- Advanced facet arthropathy but more advanced on the left of C_{3/4}
- Mild degenerative changes at the anterior C₁₋₂
- Carotid artery atherosclerosis
- Evidence of bridging ventral hyperostosis at multiple levels resembling diffuse idiopathic skeletal hyperostosis (DISH) is pointed out.
- With diffuse significant disc space narrowing, the findings may actually represent an ankylosing form of spondylosis deformans.





Treatment and Outcome

- Cervical flexion-distraction (F/D) adjustment for the cervical spine was applied.
- Rotation adjustment with the F/D C2/3 left side was applied.
- Medcosonolation to the cervical paraspinals was applied.
- He discontinued the exercises he had been given and began isometric only at the onset of treatment.
- After the 3rd visit, his ear pain was gone, and the hearing compliant resolved.
- He began Swiss ball (exercise ball) neck resistance exercises in the office for 8 sessions.
- He was treated 12 sessions total and dismissed with an Oswestry neck index of 5/50 or 10% and PIS of 0-1/10 (initial 36% and 5/10).

Cervical Plexus Syndrome

- Kessler and Alba Neurosurgery, 1991 Apr,28(4):506-9
 - “Lesions affecting the roots of the cervical plexus can cause a syndrome not previously described.”
 - C3-C4 most likely to be involved (C5 may be involved).
 - **Syndrom produces facial, auricular or retroauricular pain!**
 - Findings “are sparse” maybe “sensory impairment in the area.”
 - In 1000 cases of surgical decompression cases, “only 10 were found.”
 - Paresthesias, episodic shock-like pain affecting the ear, par-articular, lower occipital and mandibular areas prompted by head turning or extension are common triggers.

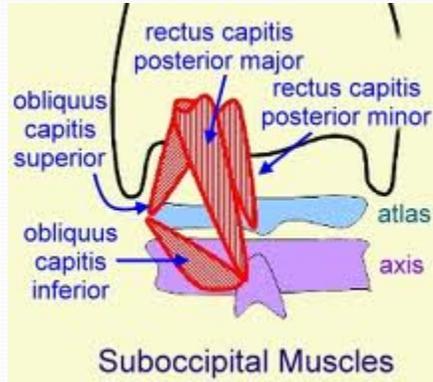
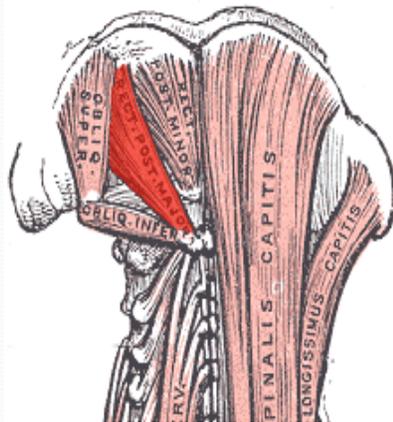
Cervical Spine Causes for Referred Otalgia

- Jaber, Leonetti, Lawrason and Fuestel – Otolaryngology – Head and Neck Surgery Vol 138, Issue 4, April 2008, pp479-485
 - Otalgia classified as otogenic (primary) nonotogenic (referred)
 - Most common cause of referred otalgia – TMJ
 - Negative otologic exam but persistent pain suggests referred otalgia.
 - The ear is unique in that no other structure in the body of comparable size is supplied by so many sensory nerves from so many neural segments.
 - Ear is supplied by (CrN V, VII, IX and X) and cervical plexus nerves (C2-C3).
 - Pathology of the cervical spine may present as referred otalgia include DJD (degenerative joint disease - OA, cervical facet syndrome, spondylosis, disc herniation and stenosis), whiplash injury, and cervical meningiomas.

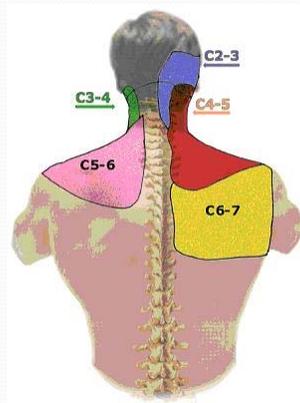
Head and Neck Pain

- Mehio and Shah – Otolaryngology Clinics of North America Vol 42, Issue 1, Feb 2009, pgs 143-159 “Alleviating Head and Neck Pain”
 - Common cause of head pain is cervical spine abnormalities.
 - “It has long been proposed and more recently accepted, that cervical spine structures, particularly those innervated by the upper three cervical nerves, has the capacity to refer pain into the head and cause neck pain and headache.”
 - “The anatomic substrate for this referred head pain is the trigeminal nucleus.” (*presenter note: Think rectus capitus posterior major and minor in this mix!*)
 - Anatomically, any nociceptive activity arising from disease or disorders in upper cervical joint structures (facet joints C0-C3), in muscles innervated by the upper 3 cervical nerves, or the nerves themselves can access the trigeminal nucleus and thus be responsible for headache.

Suboccipital Muscles



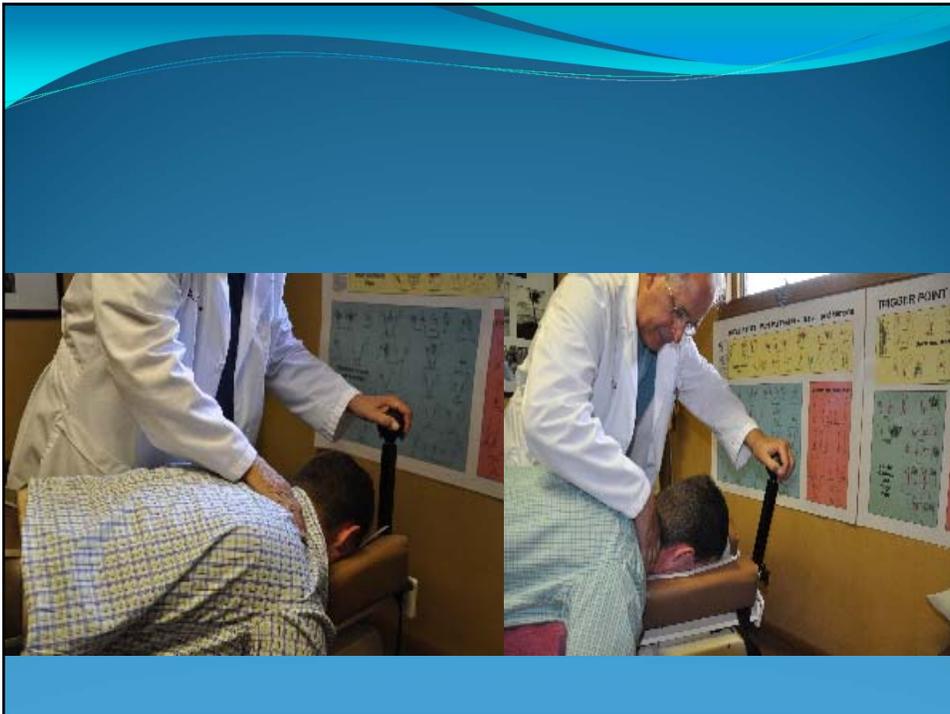
Cervical Zygapophysial Joint Pain Distribution

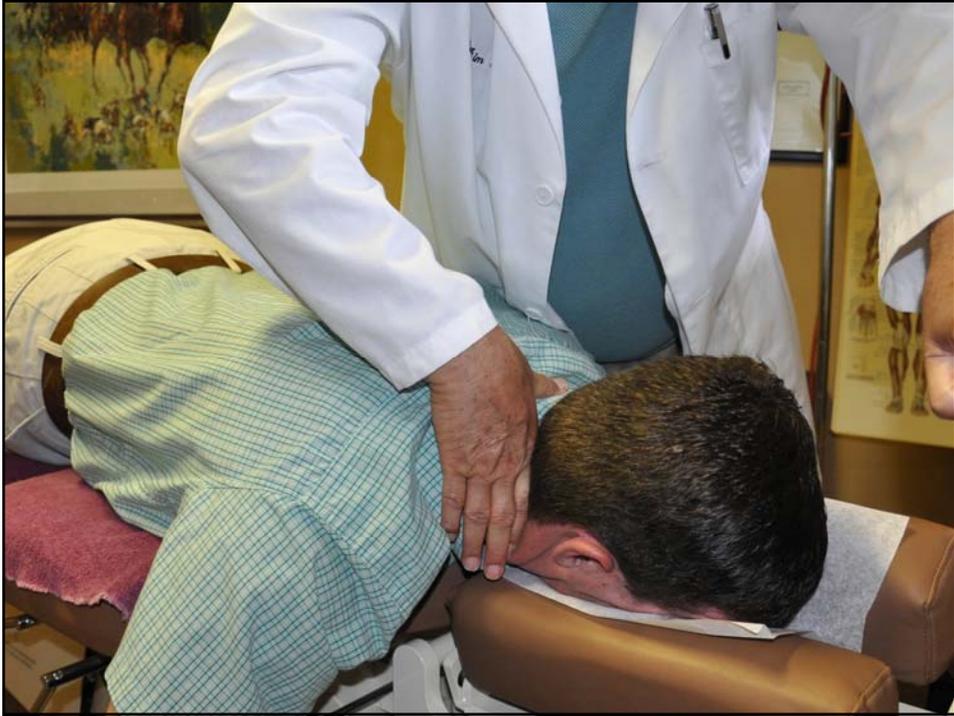


Long axis y traction and flexion distraction



Contact base of skull





Thank you!