

Physical Therapy Management Of A Patient With Unilateral Headache, Neck, And Shoulder Pain Who Presents With Undiagnosed Mastoiditis: A Case Report

¹Doctor of Physical Therapy Program, University of New England, Portland, Maine

Mastoiditis Background

- Mastoiditis is an infection and inflammation of the mastoid cells.¹
- If left untreated, mastoiditis can lead to intracranial complications and ultimately death.¹
- Diagnosis is confirmed with imaging such as computed tomography or magnetic resonance imaging.²
- Common symptoms include earache, retroauricular pain, headache, mastoid tenderness, hearing loss, and discharge from the ear.²
- Mastoiditis is typically managed with antibiotics, but may require mastoidectomy which is the surgical removal of the mastoid bone.³



Symptoms/Referral Patterns

Mastoiditis:

Cervicogenic Headache:

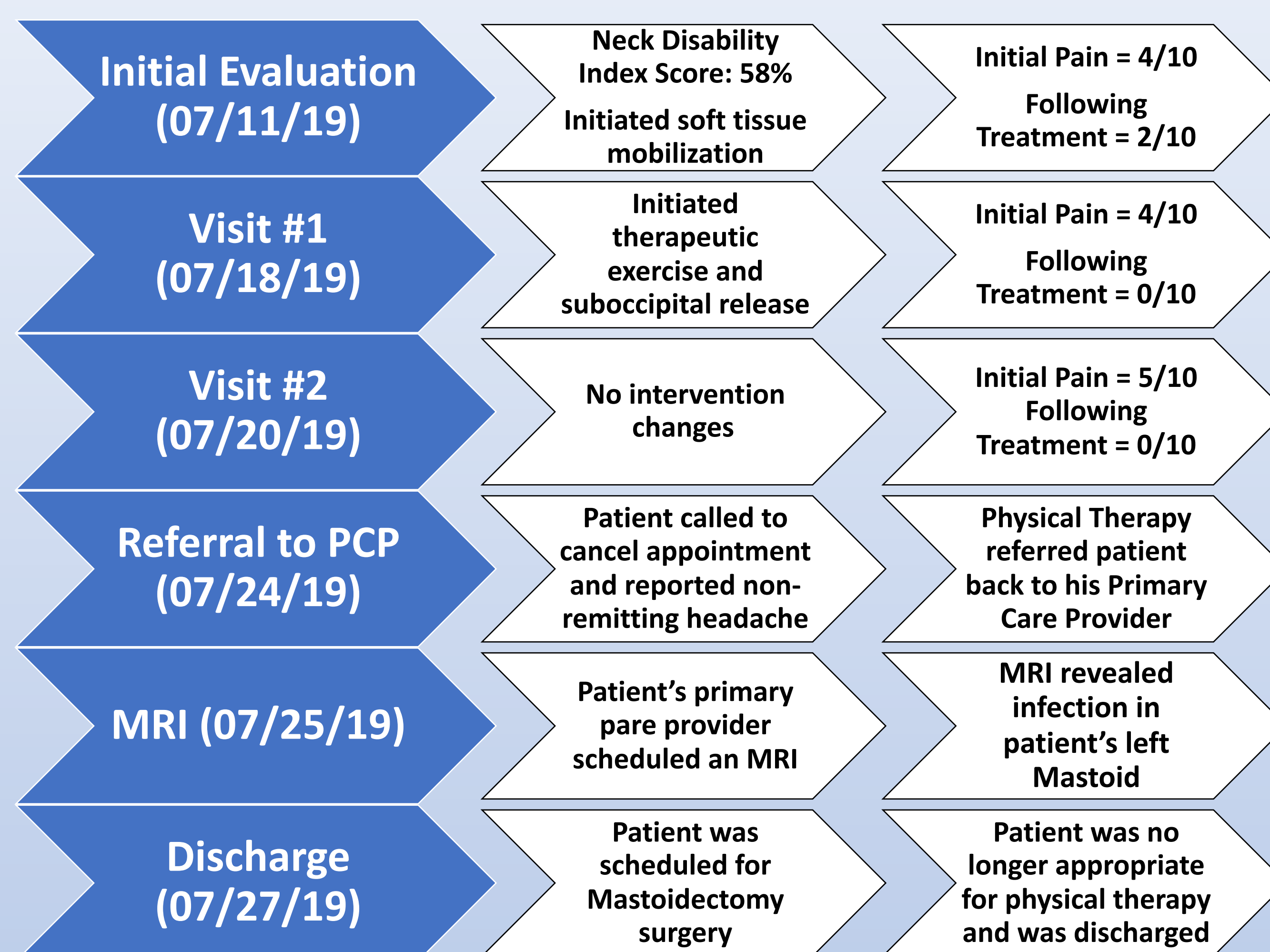
Case Description and Purpose

- Patient was 76-year-old Caucasian male referred to outpatient physical therapy from his otorhinolaryngologist (ENT) due to complaints of left-sided headache, neck, and shoulder pain which began three years ago.
- Relevant medical history included chronic bilateral ear infections over the last ten years.
- Patient reported being limited in his ability to sleep, get dressed, bathe, as well as pick up and carry objects due to increase in pain.
- Assessment revealed deficits in active and passive left shoulder range of motion, left upper-extremity strength, cervical range of motion, and hypomobility of upper cervical vertebrae. Patient demonstrated tenderness to palpation surrounding his left scalenes, sub-occipital musculature, upper trapezius, and paraspinals.
- The purpose of this case report is to illuminate the signs/symptoms of Mastoiditis as well as Cervicogenic Headaches and their commonalities which include overlapping site of cervicalgia

Cervicogenic Headache Background

- Cervicogenic headache (CGH) is typically a chronic, unilateral cephalgia that is believed to be caused by musculoskeletal dysfunction of the neck.⁴
- The structures that may be involved include C1, C2, and C3 vertebrae as well as the joints, discs, ligaments, and musculature of the upper cervical spine.⁵
- Symptoms of CGH may include unilateral head and face pain, with pain localized to the occipital, temporal, or orbital regions, a moderate to severe pain intensity, restricted active and passive cervical range of motion.⁴
- Symptoms are likely triggered by head and neck movement, sustained or awkward neck posture, and pressure applied to the cervical spine.⁴
- CGH are managed pharmacologically, osteopathic, manipulative treatment, physical therapy, and possibly surgery.⁴

Timeline



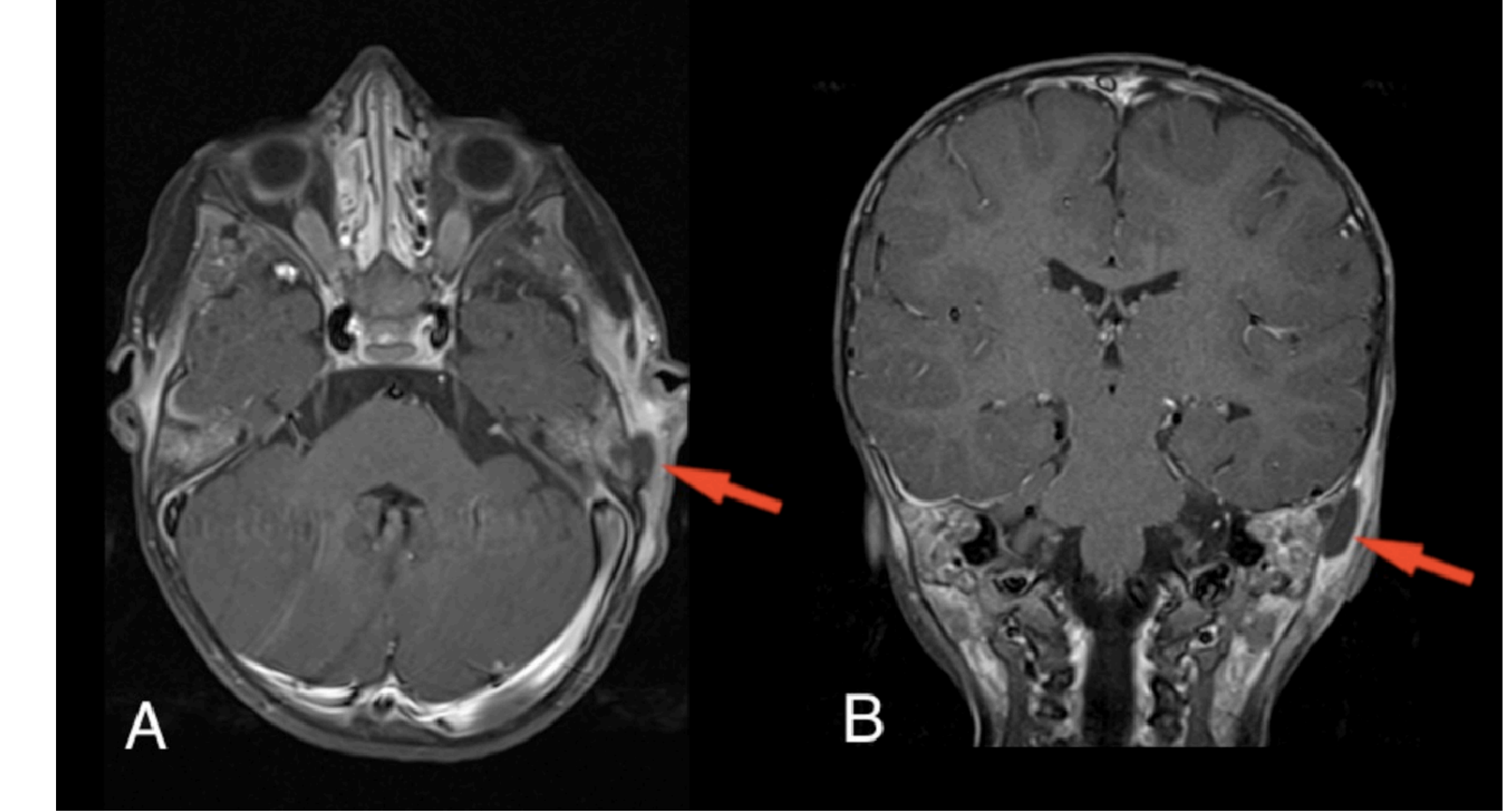
Interventions



Outcomes

- Due to the short duration of the patient's episode of care, there were no formal reassessments performed and thus no follow-up outcomes.

Diagnostic Imaging Findings (MRI):



Discussion/Conclusions

- Treatment only improved patient's symptoms in the short term, as indicated by gradual increases in symptoms over time possibly due to worsening status of the mastoid infection.
- One special test, "cervical flexion rotation rest⁴," which is specifically tailored for identifying if headaches are coming from the upper cervical segments was not performed. The test would likely have been positive due to painful neck movement and limited cervical rotation.
- This case report may have potential implications for clinical practice because there is a lack of education regarding mastoiditis in physical therapy curriculums.

Acknowledgements

- Matthew Somma PT, DPT, MTC, CSCS for his assistance and support throughout the case report writing process. Matthew Ross PT, DPT for assistance and supervision of patient care during the 2nd clinical practicum. The patient for his participation in this case report.

References

- Palma S, Bovo R, Benatti A, et al. Mastoiditis in adults: a 19-year retrospective study. *Eur Arch Otorhinolaryngol*. 2013;271(5):925-931. doi:10.1007/s00405-013-2454-8
- Hongisto AL, Jero J, Markkola A, Saat R, Aarnisalo AA. Severe acute otitis media and acute mastoiditis in adults. *J Int Adv Otol*. 2016;12(3):224-230. doi:10.5152/iao.2016.2620
- Abid W, Gama OB, Ghorbal H, et al. Management of acute mastoiditis in children. A retrospective study and literature review. *Egypt J Ear Nose Throat Allied Sci*. 2014;15(3):205-209. doi:10.1016/j.ejenta.2014.05.001
- Biondi DM. Cervicogenic headache: Diagnostic evaluation and treatment strategies. *Curr Pain Headache Rep*. 2001;5(4):361-368. doi:10.1007/s11916-001-0026-x
- Becker WJ. Cervicogenic Headache: Evidence That the Neck is a Pain Generator. *J Headache Pain*. 2010;50(4):699-705. doi:10.1111/j.1526-4610.2010.01648.x
- Blanpied P, Gross A, Elliot J, et al. Neck Pain Guidelines: Revision 2017: Using the Evidence to Guide Physical Therapist Practice. *J Orthop Sports Phys Ther*. 2017;47(7):511-512. doi:10.2519/jospt.2017.0507