



# 20 Year Old Swimmer with Neck Pain

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## Case Presentation:

A 20 year old swimmer comes in for neck pain while swimming. Pain occurred with one month left of her swimming career. She reports she developed the pain while swimming and over two weeks the pain started radiating into her right shoulder. She was able to complete the season but notes pain has worsened since she has stopped. Pain now radiating down her right arm. Pain described as a sharp burning pain. Pain will keep her up at night. Notes moving her neck will make her pain worse. Has tried ibuprofen and tylenol which has not helped. Denies any weakness, numbness or tingling.

She is also reporting headaches. She has a longstanding history of headaches. She notes the headaches worsen with valsalva activities and stress. She denies any double vision or balance issues.

## Physical Exam:

General: No acute distress

Neck: Full ROM. Pain with right side bending. Pos Spurlings test.

Shoulder: Full ROM. Muscle strength 5/5. Neg Neer, Hawkins, Jobe's, O'Briens, Speeds, Yergasons, belly press, lift off.

Neurologic: No gross focal deficits. CN's II-XII grossly intact. Neurovascularly intact. Sensation intact to light touch and symmetric in bilateral upper and lower extremities.

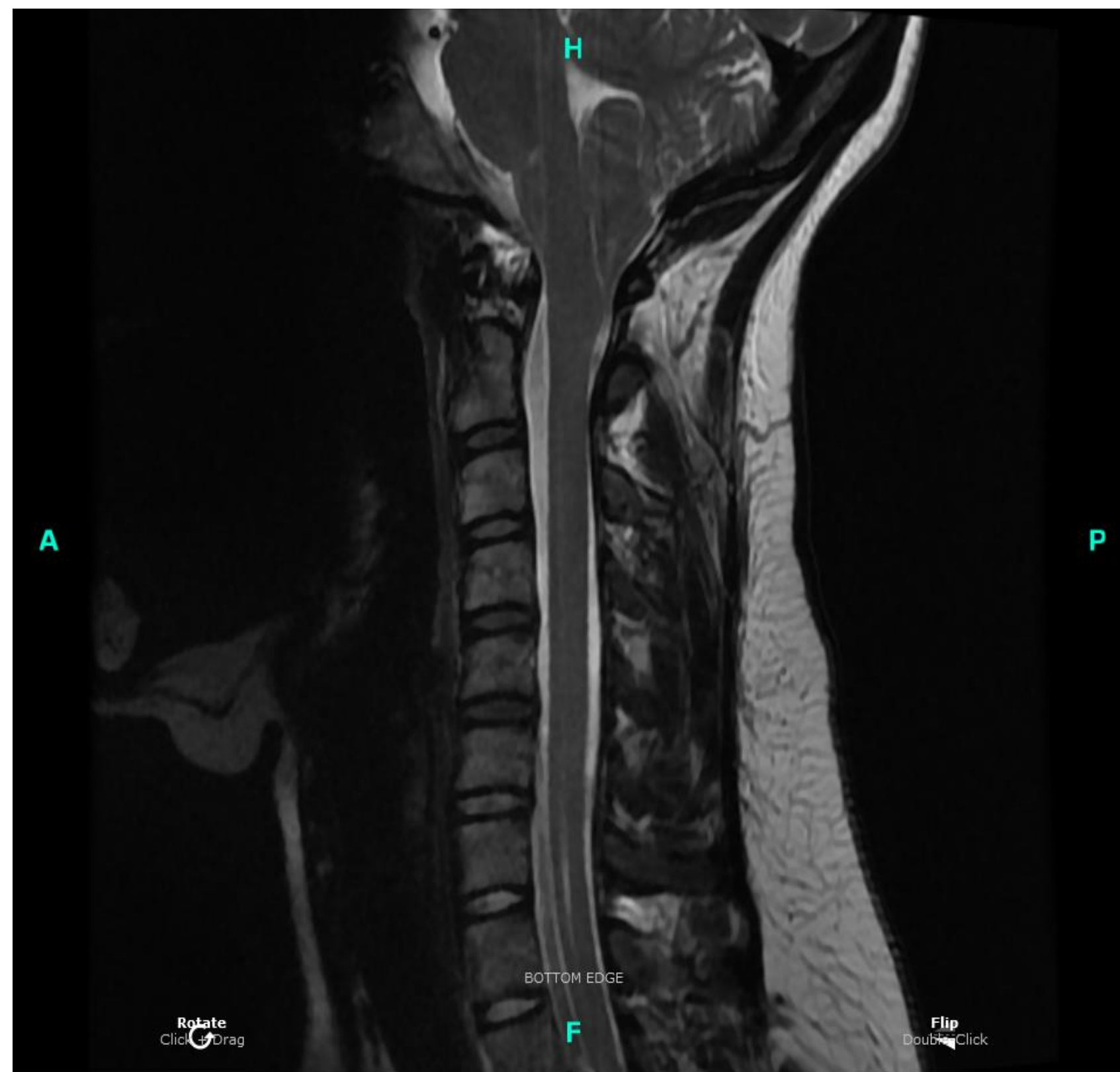
## Differential Diagnosis:

- Muscle strain
- Cervical Radiculopathy
- Thoracic Outlet Syndrome
- Spinal cord syrinx
- Rotator cuff tendonitis

## Test Results:



Xray: Preserved disc space with mild straightening of the cervical spine. No acute osseous abnormality.



MRI: Chiari I malformation as detailed above worse on the right with effacement of subarachnoid space at the craniocervical junction and mild dorsal impingement on the right. Small syrinx extending from C6 to T2 with maximal cross-sectional diameter of 1.5 mm at C7-T1. There is loss of normal cervical lordosis. Minor left uncovertebral hypertrophy C2-4 without stenosis. No disc herniation or cord compression.

## Final Working Diagnosis:

Chiari malformation extending to C2 with associated syrinx.

## Discussion:

Chiari malformation is an uncommon condition in which the brain tissue extends into the spinal canal. This occurs because the skull is misshapen or too small pushing the brain tissue downwards. There are three different types of Chiari malformations. Type 1 occurs during development, so the symptoms do not occur into late childhood or early adulthood. Type 2 and 3 are congenital abnormalities and symptoms are seen early in childhood. In our patient, she has a Type 1 Chiari malformation. These are treated based on symptoms and if a syrinx is present. If symptoms are controlled on medication and syrinx does not expand, they can be treated conservatively. If symptoms are not controlled or if syrinx expands then surgery is usually performed.

## Outcome:

Patient was started on gabapentin 300mg nightly for her neuropathic pain. Her shoulder and neck pain improved on gabapentin. She still continued to have headaches. She was then referred to Neurosurgery for possible surgical intervention. Posterior fossa decompression with expansile duroplasty was discussed. It was determined to wait six months and repeat the MRI.

## Return To Activities:

Patient graduated from college and was accepted into Physical Therapy school. Her symptoms are well controlled on gabapentin 300mg nightly. Her repeat MRI showed no changes and the syrinx remained stable. It was then determined she would be managed conservatively on gabapentin. Patient does not have any restrictions and the plan is to repeat the MRI yearly. Will continue conservative management unless the syrinx expands.