



# Chiropractic clinical reasoning in a patient with cervical radiculopathy



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## Introduction

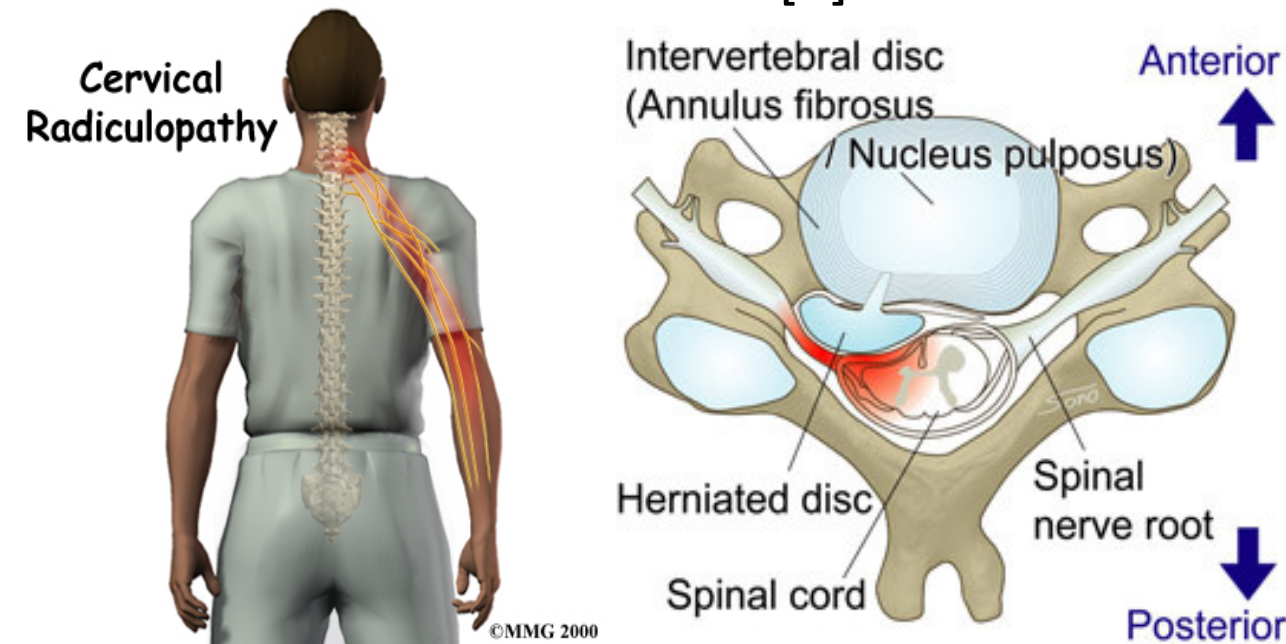
This poster presents the successful evidence-based diagnosis and treatment of a patient with **cervical radiculopathy (CR)** in a chiropractic setting.

### Epidemiology:

CR affects 1.79 per 1000 people [1] most commonly during the 4th and 5th decades of life. 19% of people with neck pain are found to have CR. [2] Risk factors that have been associated with CR include cigarette smoking, white race and prior cervical/ lumbar radiculopathy. [1]

### Etiology:

CR is most commonly attributed to mechanical compression or chemical irritation of the spinal nerve roots. Intervertebral disc herniation or degeneration decreases the space for the nerve roots. Trauma, infection or tumors can also cause a similar presentation. [1]



## Patient's History

33 year old male presents with 2 month duration **neck and left arm pain**

- pain starts in the left side of his neck and "shoots" down his left arm into his thumb, index and middle fingers
- feels an achy pain in his left shoulder region
- rated an **8/10** and is sharp and shooting
- physical activity increases his level of pain including turning his head to the left, coughing and sneezing
- affects performing normal activities of daily living**
- relief with rest while lying down or resting his left arm above his head
- was seen by orthopedist for MRI and given the option of surgery to reduce chance of disability (which the patient mentioned struck quite a bit of fear into him), but chose to try all conservative options first.
- previous treatments have given minimal relief: acupuncture and over the counter NSAIDs

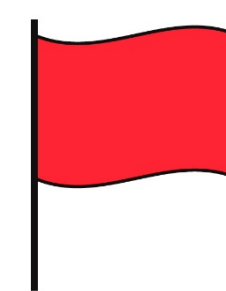
## Physical Examination

- The first step was to rule out red flags for serious pathologies:** [2]
  - Cerebral, cerebellar, cranial, and peripheral nerve examination: all normal.
  - Head & neck, eyes, ears, nose, throat, heart, lung, and circulatory examinations: all normal.
- Then, see if pain is reproduced (or decreased) with mechanical tests:**
  - Pain reproduced with Spurling, shoulder depression test, and upper limb tension test.
  - Cervical distraction helped to relieve the chief complaint.
  - Cervical extension, left lateral flexion, and left rotation were all markedly decreased and reproduced the chief complaint.
  - Springing over C3-C7 caused tenderness in the cervical spine bilaterally at those segments.
  - Painful myofascial trigger points noted in the bilateral cervical paraspinal musculature, left levator scapula, left upper trapezius, and left posterior scalene muscles.
- Finally, determine if there are any possible perpetuating factors:**
  - Poor seated and standing posture with anterior head carriage and anteriorly rolled shoulders. Sleep has been altered by arrival of new baby. Fear of possibly needing surgery.

**Advanced Imaging was brought by patient:** MRI revealed a large posterolateral broad based disc protrusion causing moderate to severe intervertebral canal stenosis on the left at C5-C6.

## Diagnostic Reasoning [2,3]

- We first ruled out serious pathology through history and examination.
  - No "red flags" from history and no neurological deficits.
- The second step was to determine which structures may be contributing to the symptoms.
  - Chief complaint reproduced via orthopedic testing diagnostic for cervical radiculopathy.
- The final step was to determine if any other factors might be contributing to the perpetuation of symptoms. - **Fatigue, stress, fear, posture**



## Treatment / Management

Current evidence gives the following practice recommendations: [1,4]

- 1 – Manual or mechanical intermittent traction (moderate evidence)
- 2 – Ancillary treatments including passive modalities for pain (moderate evidence)
- 2 – Surgical Intervention (moderate evidence)
- 3 – Epidural Steroid injection/ Nerve Block (mild evidence)
- 4 – Multimodal Multidisciplinary Care: exercise, relaxation, relative rest, stress and nutritional management (mild to insufficient evidence)

Current literature suggests the natural course of cervical radiculopathy is usually favorable with approximately 75%–90% of patients having symptomatic improvement with conservative treatment. [1]

### Our treatment included:

- Manual **intermittent traction** of the cervical spine. [5-7]
  - Pin and stretch, and trigger point pressure **release of the painful muscles** in the affected area. [8]
  - Home exercises/stretchers for the involved muscles and a **nerve mobility exercise**. [9]
  - FDA approved **low level laser therapy** for increased recovery of the involved tissues.[10]
- Treatment frequency:** 2x/wk for 4 wk, then 1x/wk for 2 wk and then 1x/wk for 4 wk.

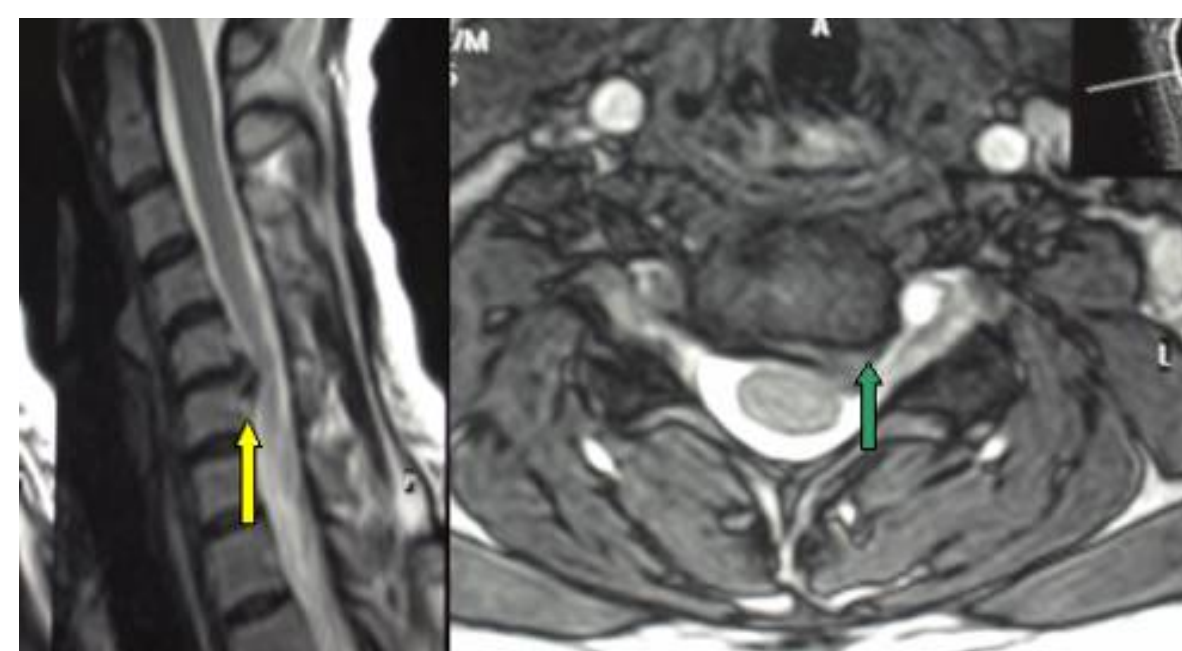
**Results:** Immediate partial relief following the first treatment, rating his pain a **4/10**. By the end of the 4<sup>th</sup> visit he reported feeling "normal" again as he **no longer had sharp shooting pains down his arm**. By the end of the 5<sup>th</sup> visit his pain level was down to a **0/10**. From the 8<sup>th</sup> visit on the primary complaint was neck stiffness. **There are no neurological deficits. Pain in both neck and arm were reduced to zero!**

## Common Features

- insidious onset neck and arm pain
  - pain can range from mild discomfort up to sharp shooting pains
  - commonly starts in the neck and then travels into the shoulder and/or arm region.
  - sensory changes along the affected nerve distribution, or even motor weakness depending on the level of severity. [1]
- CR can be caused by acute trauma or insidious degeneration leading to the injury. [1]

### Diagnostic Criteria:

There is no one best test for the diagnosis of CR. A cluster of procedures leads to the most accurate diagnosis. CR is largely a **clinical diagnosis made by a thorough history, physical examination, and orthopedic tests**, but can be further **complemented by advanced imaging** such as MRI or CT scans if necessary. [3]



Yellow: disc herniation sagittal view Green: disc herniation axial view

## References

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