

## CASE REPORT

# Atypical Presentation of Cervical Facet Arthropathy: Neck Pain along with Numbness and Weakness of Upper Limb

<sup>1</sup>Deepika Soni, <sup>2</sup>Gautam Das, <sup>3</sup>Mousumi Datta

## ABSTRACT

Most of the cervical facet arthropathy cases present with neck pain with referred pain in the head and upper extremities. Tenderness to palpation over the facet joints or paraspinal muscles, accentuation of pain with cervical extension or rotation, and the absence of any neurologic deficits are the usual findings. Radicular symptoms are seldom associated with cervical facet arthropathy.

We report a case of a 23-year-old female patient presented with chief complaints of neck pain radiating to entire right upper limb with weakness and numbness of that limb. Physical examination revealed limitation of range of motion of neck, painful extension and lateral rotation of neck, tenderness over C4-5 and C5-6 facet joints, and tenderness over right trapezius muscle. Weakness and numbness over hand was also present, though electromyography and nerve conduction velocity study was normal in both upper limbs. Magnetic resonance imaging (MRI) cervical spine was suggestive of mild posterior disk osteophytes at C4-5, C5-6, and C6-7 causing grade 1 cervical canal stenosis and cervical spondylosis with degenerative disk disease. Trigger point injections were given in trapezius and scalene muscle. There was not much improvement. Considering facet arthropathy as a differential diagnosis, diagnostic median branch block at C4, C5, and C6 level was done. It was positive with more than 80% pain relief. Later on, radiofrequency (RF) ablation of C4, C5, and C6 median branch was done. Pain was reduced significantly with improvement of other symptoms like weakness and numbness.

**Keywords:** Cervical facet arthropathy, Numbness, Pain, Weakness.

**How to cite this article:** Soni D, Das G, Datta M. Atypical Presentation of Cervical Facet Arthropathy: Neck Pain along with Numbness and Weakness of Upper Limb. *J Recent Adv Pain* 2016;2(3):106-108.

**Source of support:** Nil

**Conflict of interest:** None

## INTRODUCTION

The classic clinical presentation of cervical facet arthropathy includes neck pain and tenderness over cervical facet joints with or without referred pain in the head and upper extremities. Patients may present with headaches and limited range of motion associated with typical

neck pain. The quality of the pain is described as a dull ache in the posterior neck region, which sometimes radiates to the shoulder or the mid-back region or both areas. Radicular symptoms are usually not associated with pain due to facet arthropathy, though patients may have coexisting upper extremity pain. Clinical features include tenderness to palpation over the facet joints or paraspinal muscles, accentuation of pain with cervical extension or rotation, and the absence of any neurologic deficits.<sup>1</sup> We report an unusual presentation of cervical facet arthropathy where along with neck pain there was pain over entire upper extremity along with weakness and numbness. The patient was treated successfully with radiofrequency (RF) ablation of cervical median branches with significant relief of pain, weakness, and numbness.

## CASE REPORT

A 23-year-old female presented with complaint of gradual onset of right-sided neck pain. Initially, the pain was radiating to right shoulder only, but gradually over a period of 3 years, it involved entire right upper extremity. Pain was associated with tingling, numbness, and weakness of right hand. Pain was aggravated by physical work like writing for half an hour, holding something with right hand. It was relieved by taking analgesics and rest. There was no history of injury or surgery over neck or limb. She was a known case of fibroadenoma, left nephrolithiasis, and bilateral cystic ovaries.

On physical examination, extension and lateral rotation of neck was painful. Overall neck movement was restricted. Tenderness was present over C4-5 and C5-6 facet joints and right trapezius muscle. Other neurological findings were within the normal limits.

Magnetic resonance imaging (MRI) of cervical spine revealed posterior disk osteophyte complexes at C4-5, C5-6, and C6-7, causing grade 1 cervical canal stenosis and cervical spondylosis with degenerative disk disease. Cervical spine and right shoulder (anteroposterior and lateral) X-rays were within the normal limits. Doppler study of right upper limb revealed no abnormality. Electromyography and nerve conduction velocity study of both upper limbs was normal.

She was given trapezius and scalene muscle trigger point injections with no significant relief of pain and other symptoms. Next, diagnostic C4, C5, and C6 median

<sup>1</sup>Fellow, <sup>2</sup>Director, <sup>3</sup>Faculty

<sup>1-3</sup>Daradia: The Pain Clinic, Kolkata, West Bengal, India

**Corresponding Author:** Gautam Das, Director, Daradia: The Pain Clinic, Kolkata, West Bengal, India, e-mail: gdas2310@gmail.com

branch block was done with 2 mL of 1% lignocaine and depo-medrol at each level. She had 80% pain relief after the diagnostic median branch block along with resolution of other symptoms like weakness and numbness.

Later on RF ablation of C4, C5, and C6 median branch was planned. The RF ablation was done with conventional RF at 80°C for 90 seconds, two cycles at all the three levels.

## DISCUSSION

The pain generators in the cervical region are intervertebral disks, facet joints, ligaments, muscles, and nerve roots. Movements of cervical spine are often restricted if there is any problem with the structures like disk or facet. Bogduk and April<sup>2</sup> evaluated a sample of 56 patients from the previous study population with neck pain who had undergone a cervical discography and facet joint nerve blocks at the same level as part of the diagnostic process. Disk disease identified with discography was present in 64% of patients with a positive cervical medial branch test for facet joint pain. Results revealed that 41% of the patients had a symptomatic disk and a symptomatic facet joint at the same segment, and an additional 23% had a painful facet joint, but not a painful disk at the same segment. Degenerative changes to the facet joint include hypertrophic arthropathy, which may impinge on nerve roots and may irritate afferents on the posterolateral aspect of the disk.

The referral patterns for cervical facet joint pain vary. However, particular radiation patterns have been identified for each facet joint level on painful stimulation. Dwyer et al<sup>3</sup> mapped out the referral patterns in five subjects. The C2-3 facet joint refers pain to the posterior upper cervical region and head, whereas the C3-4 facet joint refers pain to the posterolateral cervical region but does not radiate to the head or shoulder. The C5-6 joint refers pain to the posterolateral middle and primarily lower cervical spine and the top and lateral parts of the shoulder and caudally to the spine of the scapula. The C6-7 facet joint refers pain to the top and lateral parts of the shoulder and radiates caudally to the inferior border of the scapula. In our case, she presented with an unusual pattern of referral of cervical facet joint pain. The C4-5 and C5-6 facet joint pain referred to entire upper extremity along with weakness and numbness.

In patients with incidental abnormalities of the facet joints, multiple other structures could be the pain generator or cause of pain, or at least may contribute to a condition more complex than a facet origin pain. Blockade of medial branches denervates not only the joints but also the muscles, ligaments, and periosteum supplied by the same nerve. Sources of pain in these alternative sites are also relieved with medial branch block.

Cervical facet joint blocks can be performed to test the hypothesis that the target joint is the source of the patient's pain.<sup>4-6</sup> Barnsley et al<sup>7</sup> studied the efficacy of intraarticular facet joint injections for the treatment of chronic cervical facet pain after whiplash injury and found a 50% reduction in pain compared with the preinjection level. In our case, she had 80% relief in symptoms following diagnostic median branch block.

Radiofrequency thermocoagulation of medial branches for facet arthropathy is a safe and efficacious modality with the potential for long-term benefit. Radiofrequency lesioning is performed with continuous or pulsed-mode RF. Radiofrequency neurotomy denervates the facet joint by coagulating the medial branch of the dorsal ramus, which denatures the proteins in the nerve.<sup>8</sup>

A randomized double-blind trial with 24 patients was used by Lord et al<sup>9</sup> to evaluate the efficacy of RF neurotomy. The 12 patients in the treatment group reported an average of 263 days before the pain level returned to 50% of the preoperative level. The 12 patients in the control group perceived this in just 8 days.

In our case, she was successfully treated with RF ablation of median branch.

In compliance with the criteria established by the International Association for the Study of Pain,<sup>10</sup> the prevalence rate of cervical facet arthropathy was determined with controlled diagnostic blocks of cervical facet joints and found to be 54 to 67% of patients with chronic neck pain. April and Bogduk<sup>11</sup> reviewed the records of 318 patients who had neck pain for at least 6 months to estimate the prevalence rate of cervical facet joint pain. These studies indicate that the prevalence rate of cervical facet joint pain ranges from 26 to 65%.

Imaging studies are usually not helpful, with the exception of ruling out other sources of pain, such as fractures or tumors. Signs of cervical spondylosis, narrowing of the intervertebral foramina, osteophytes, and other degenerative changes are equally prevalent in people with and without neck pain.<sup>12</sup>

## CONCLUSION

Cervical facet arthropathy may present with unusual features like referred pain involving entire upper extremity and subjective symptoms of weakness and numbness. The diagnosis can be confirmed by diagnostic median branch block with improvement of symptoms. It can be successfully treated with RF ablation of median branch.

## REFERENCES

1. Fukui S, Ohseto K, Shiotani M, Ohno K, Karasawa H, Naganuma Y, Yuda Y. Referred pain distribution of the cervical zygapophyseal joints and cervical dorsal rami. *Pain* 1996 Nov;68(1):79-83.

2. Bogduk N, April C. On the nature of neck pain, discography and cervical zygapophyseal joint blocks. *Pain* 1993 Aug;54(2):213-217.
3. Dwyer A., April C, Bogduk N. Cervical zygapophyseal joint pain patterns. I: a study in normal volunteers. *Spine (Phila Pa 1976)* 1990 Jun;15(6):453-457.
4. Bogduk N. International Spinal Injection society guidelines for the performance of spinal injection procedures: part 1; zygapophyseal joint blocks. *Clin J Pain* 1997 Dec;13(4):286-295.
5. Bogduk N, Lord S. Cervical zygapophyseal joint pain. *Neurosurgery* 1998;8:107.
6. Boswell M, Singh V, Staats PS, Hirsch JA. Accuracy of precision diagnostic blocks in the diagnosis of chronic spinal pain of facet or zygapophyseal joint origin. *Pain Physician* 2003 Oct;6(4):449-456.
7. Barnsley L, Lord SM, Wallis BJ, Bogduk N. The prevalence of chronic cervical zygapophysial joint pain after whiplash. *Spine* 1995 Jan;20(1):20-25; discussion 26.
8. Zervas NT, Kuwayama A. Pathological characteristics of experimental thermal lesions: comparison of induction heating and radiofrequency electrocoagulation. *J Neurosurg* 1972 Oct;37(4):418-422.
9. Lord SM, Barnsley L, Wallis BJ, McDonald GJ, Bogduk N. Percutaneous radiofrequency neurotomy for chronic cervical zygapophyseal joint pain. *N Engl J Med* 1996 Dec;335(23):1721-1726.
10. Merskey H, Bogduk N. Classification of chronic pain: description of chronic pain syndromes and definitions of pain terms. 2nd ed. Seattle: IASP Press; 1994. p. 180.
11. April C, Bogduk N. The prevalence of cervical zygapophyseal joint pain: a first approximation. *Spine* 1992 Jul;17(7):744-747.
12. Friedenberg ZB, Miller WT. Degenerative disease of the cervical spine. *J Bone Joint Surg Am* 1963 Sep;45:1171-1178.