



A Case Report of Silent Cervical Spondylosis with Neck Pain

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Background: Cervical Spondylosis, commonly known as Cervical Osteoarthritis, is a kind of degenerative osteoarthritis of the joints between the spinal vertebrae's and the neural foramina. It's a condition characterized by changes in the cervical bones, discs, and joints as a result of regular aging wear and tear. Spondylosis of the cervical spine is most common in 40s and 50s.

Case Presentation: A 65 years old male came to physiotherapy department with complaints of pain in left upper limb and neck and weakness in his left upper back muscles and unilateral since 2 months. Clinical impression showed cervical non radiculopathy. X-ray of cervical spine revealed osteophytosis and narrowed inter- vertebral space, seen in C6 and C7 cervical vertebral bodies with straightening of cervical spine. Cervical Distraction and compression test was positive.

Conclusion: A well planned physical therapy intervention has shown significant improvement in cases with cervical spondylosis in relieving the symptoms and improving quality of life.

Keywords: Cervical pain; cervical movement; osteophytosis; pain management; rehabilitation.

1. INTRODUCTION

Cervical Spondylosis, commonly known as Cervical Osteoarthritis, is a degenerative osteoarthritis of the joints between the spinal vertebrae and the neural foramina. It is characterized by changes in the cervical bones, discs, and joints as a result of regular aging, wear and tear [1]. Spondylosis of the cervical spine is most common after 40s. The cervical spine loses its elasticity and becomes stiff and more prone to damage with progressing age [2]. Spurs or abnormal growths called osteophytes can occur on the structures of the neck as a result of degenerative discs as well as other cartilage degradation. Cervical spinal stenosis is a disorder that results from abnormal growths constricting the inside of the spinal column or the spaces where spinal nerves depart [3]. Neck discomfort and stiffness, shoulder discomfort, sub-occipital discomfort, and headache are the most common symptoms of cervical spondylosis [4]. Radiculopathy occurs when the gap between two adjacent vertebrae narrows, compressing a spinal nerve coming from the spinal cord [5]. It may create pressure on nerve roots, resulting in sensory and/or motor problems such as discomfort, paresthesia, or muscular weakness in the limbs if the condition is severe [6].

2. CASE PRESENTATION

We present a case of 65-year male who complains of upper back pain and neck pain which was radiating to left arm, the patient's job involves mostly sitting desk job with long hours of computer work and writing work. pain started 2

month back when the patient woke up in morning. The symptoms were constant throughout the day, pain was gradual in nature which is located centrally in upper back region of neck and left arm. Neck pain while doing side flexion, rated 5/10 on VAS at rest, aggravated with side flexion and rotational movement as 8/10, during work and does not radiate to any arm. These symptoms are relieved by rest. On evaluation, all the nerves are intact, patient is a known case of hypertension since 4 years. The biceps muscle reflex was 3+ bilaterally; the brachioradialis muscle reflex was 3+ bilaterally; and the triceps muscle reflex was 3+ bilaterally. Hoffman's and Babinski signals were both negative bilaterally, indicating that upper motor neuron signs were triggered. Throughout the test, the sensory system was intact, and the cervical spine had a regular curvature. Spurling's signs were positive; compression test and distraction test were positive on assessment; Valsalva test were negative. Cervical facet tenderness was noted and (ULNT)1 upper limb neurodynamic tension test is negative. Symmetry of muscle bilaterally equal. Bakody's sign was negative. X-ray's imaging of the patient's c-spine showed Osteophytosis and narrowed inter-vertebral space is seen in C6 and C7 cervical vertebral bodies with straightening of the cervical spine. Upper disc space is normal, pedicles and process are intact vertebral alignment is normal bony cervical rib is not seen. Cervical spondylosis with narrowed C6-C7 disc space. And presence of osteophytes on the posterior aspect on the cervical spine. As shown in (Fig. 1).



Fig. 1. Cervical spondylosis x-ray in anterior view and lateral view

3. ON EXAMINATION

ROM of cervical spine: The physical examination was carried out after the patient's informed consent was obtained. The patient was alert, cooperative and well-oriented with time on general examination, position of individual was in supine position and was relaxed. The pulse rate being 65 beats per minute, Blood pressure 110/70mmHg and his breathing rate was 20 breaths per minute. Pain at rest on VAS was 5/10 on movement 8/10.

3.1 Therapeutic Intervention

3.1.1 Exercise to improve muscular coordination, endurance or strength

In patients with neck discomfort, the deep cervical flexors (DCF) and deep cervical extensors (DCE) muscles, in particular, tend to have been prone to impairment. The type 1 fiber density in all of these muscles is high, and the muscles' spindle is sensitive to pain inhibition. Deeper neck muscles with a little less control and capacity might cause undesired segmental motion or thickening in the activation of multi-segmented superficial muscles. As a result, the focus of therapy should be on strengthening the performance or coordination of the deeper cervical muscles. Along with the strengthening stretching of the cervical musculature is initiated to loosen the structure and reduced the trigger point in the [7-9].

3.1.2 Therapeutic exercise program

3.1.2.1 Phase 1

Status: High irritation; near-constant discomfort that restricts normal tasks (ADLs).

For pain modulation hold fermentation is advised it reduces the pain in the cervical region and increases the muscle pliability followed by Stretching exercises for the cervical musculature i.e flexors, extensors, and lateral flexors reduces the stiffness and spasm, self stretching techniques is taught to the patient to perform at home after that Slow, controlled, and painless activities that develop muscle control and coordination are initiated.. Sitting chin nods (phase 1 of deep cervical flexor activation) or pressure devices Aiming in the light (or another target practice). When walking, balance on foam pillow on your head. With a fixed gaze, move your

weight or rotate your torso on a stool or therapy ball. External shoulder rotation and/or prone shoulder extension can be done while laying on your side. Motions in the direction of symptoms concentrating on a regular basis. 10-20 minutes of daily walking.

3.1.2.2 Phase 2

Status: Irritability ranges from mild to moderate; discomfort worsens with increased activity.

Muscle endurance is emphasized. Isometrics in four directions with a minimal resistance of elastic band or tube. Prone horizontal shoulder abduction with shoulder external rotation, initiating at 90 degrees of abduction. Bilateral shoulder external rotation with mild to moderate resistance elastics band/tubing at 0 degrees abduction. Standing with the back against the wall, do shoulder abductions (aka wall slide). Shoulder flexion in the side-lying position. Self-mobilization of the thoracic spine with a foam roller. 20+ minutes of low to moderate intensity aerobic activity.

3.1.2.3 Phase 3

Status: Irritability seems to be very mild or non-existent, and exercise causes very little or no discomfort. Muscle strengthening is emphasized. In quadrupeds, shoulder flexion is combined with contralateral leg extension (aka bird dog or pointer exercise). Multiple isometric exercises using elastic bands or tubing with moderate to high resistance. Moderate to high resistance elastic band/tubing is used for isometric retraction. Using weights, do prone lateral shoulder abduction initiating with 90 degrees of abduction. Shoulder raises, rows, and chest press as required, increase the intensity of proprioceptive exercises. Resume stretching and self-mobilization of the thoracic spine. 20+ minutes of moderate to high intensity aerobic activity. Depending on the therapist's choice, thrust manipulations of the thoracic spine might involve techniques performed in a prone, supine, or seated posture. Cervical traction also can be utilized as a kind of physical therapy to widen the neural foramen and relieve neck pain. Posterior-anterior (PA) glides throughout the prone position were one type of non-thrust manipulation. Retractions, rotations, lateral glides in the ULTT1 position, and PA glides are some of the cervical spine methods that may be used. The approaches have been selected on the basis just on patient's reaction and pain relief or severity.

Table 1. ROM and MMT grading of cervical spine

	ROM	Active	Passive	MMT grade (oxford)	
	ROM			MMT	
	Left	Right		Left	Right
Cervical Flexion	0-48	0-49		+4	+4
Cervical Extension	0-30	0-30		+4	+4
Cervical Side Flexion	0-24	0-30		+3	+3
Rotation to either side	0-45	0-45		+3	+3
Shoulder Flexion	0-180	0-175		+4	+4
Shoulder Extension	0-40	0-35		+4	+4
Shoulder Abduction	0-180	0-180		+4	+4
Shoulder External Rotation	0-90	0-90		+4	+4
Shoulder Internal Rotation	0-80	0-80		+4	+4

Table 2. Exercises with high levels of trapezius electromyographic(EMG) activity

Exercise with high levels of upper trapezius EMG activity	Prone rowing Military press Prone horizontal abduction, starting at 90degree of abduction with external rotation Shoulder shrug Lateral raises Upright rows
Exercise with high level of Middle trapezius EMG Activity	Prone Extension Prone Rowing Side lying External rotation side lying forward flexion prone horizontal with neutral rotation
Exercises with high level of lower trapezius EMG Activity	Abduction Bilateral external rotation at 0 degree of abduction Empty can in standing sitting or side lying prone external rotation at 90 degrees of abduction prone rowing side lying external rotation prone horizontal abduction starting with 120 degree of abduction

3.2 Home Program

The patient was told to continue the exercise protocol and ergonomic advice, to maintain correct posture during rest and work. Also, to avoid constant posture for longer period even if it is comfortable. Follow the instructions given by therapist and avoid strain on cervical region by doing daily activities. These include cervical retraction, cervical extension, deep cervical flexor strengthening, scapular strengthening, stretching of chest muscle by isometric contractions of flexor and extensor muscles to enhance the mobility of the upper extremity structures.

4. DISCUSSION

Cervical spondylitis (CS) contributes significantly to the worldwide deterioration and poses huge financial threats to its participants. The prediction is often poor for persistent neck pain, and the resultant injury seems worse than low back pain¹. Approximately 66 percent of the population during their lifespan suffers from neck pain at any point. The second most frequent explanation given by patients for using complementary and integrative medicine (CIM) in 2007 was neck pain, followed only by low back pain [10]. The overwhelming amount of neck pain is not caused by endogenous anatomy,

and it was called "non-specific" or "mechanical." Non-specific cervical discomfort is responsible for a huge quantity of direct health insurance expenditures, referrals to primary health facilities, leave due to illness, and the associated lack of productivity [11]. Most of the non-specific neck pain is not related to neurological symptoms of nerve compression or with significant illness. In few cases, non-specific cervical discomfort is seldom interfering with activities of daily living. Non-specific cervical discomfort poses as insignificant impediment to normal functioning. More than 1/3 of the individuals affected also report moderate or recurrent pain, generally leading to chronic pain, after 12 months of treatment [12,13].

Mechanical neck pain is characterized as a generalized neck pain with or without mechanical features of the shoulder, including symptoms created by sustained posture of the neck, movement, or cervical muscle palpation. In the cervical region, mechanical neck pain is often followed by decreased range of motion (ROM) and physical disability [14].

5. CONCLUSION

To prevent the progression of disease to cervical myelopathy and cervical radiculopathy by giving therapeutic intervention in early stages for cervical spondylosis, treating the cervical pain as well as preventing the degenerative changes in cervical spine by doing these therapeutic exercises and some ergonomic advice for follow up. It can prevent the severe deformity in future to the patient of cervical spondylosis.

CONSENT

Written and Oral informed consent was obtained from the patient included in the study.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Kuo DT, Tadi P. Cervical Spondylosis [Internet]. StatPearls [Internet]. StatPearls Publishing; 2021 [cited 2021 Jun 22]. Available: <https://www.ncbi.nlm.nih.gov/books/NBK551557/>
2. Xiong W, Li F, Guan H. Tetraplegia After Thyroidectomy in a Patient with Cervical Spondylosis. *Medicine (Baltimore)*. 2015;94(6):e524.
3. Ferrara LA. The Biomechanics of Cervical Spondylosis. *Advances in Orthopedics*. 2012;2012:e493605.
4. Singh S, Kumar D, Kumar S. Risk factors in cervical spondylosis. *Journal of Clinical Orthopaedics and Trauma*. 2014;5(4):221–6.
5. Hu Z, Tang Z, Wang S, Ye X, Wang Y, Shi Q, et al. A 12-Weeks-for-Life-Nurturing Exercise Program as an Alternative Therapy for Cervical Spondylosis: A Randomized Controlled Trial. *Evidence-Based Complementary and Alternative Medicine*. 2014;2014:e961418.
6. Pumberger M, Froemel D, Aichmair A, Hughes AP, Sama AA, Cammisa FP, et al. Clinical predictors of surgical outcome in cervical spondylotic myelopathy: an analysis of 248 patients. *Bone Joint J*. 2013;95-B(7):966–71.
7. Lebl DR, Hughes A, Cammisa FP, O'Leary PF. Cervical Spondylotic Myelopathy: Pathophysiology, Clinical Presentation, and Treatment. *HSS J*. 2011;7(2):170–8.
8. Todd AG. Cervical spine: degenerative conditions. *Curr Rev Musculoskelet Med*. 2011;4(4):168–74.
9. Azemi A, Ibrahimaj Gashi A, Zivkovic V, Gontarev S. The Effect Of Dynamic Exercises In The Treatment Of Cervical Spondylosis. 2018;7:19–24.
10. Takagi I, Eliyas JK, Stadlan N. Cervical spondylosis: an update on pathophysiology, clinical manifestation, and management strategies. *Dis Mon*. 2011;57(10):583–91.
11. Jo H-J, Shin M-H, Hur J-W, Kim J-S, Ryu K-S, Park C-K. Unrecognized Shoulder Disorders in Treatment of Cervical Spondylosis Presenting Neck and Shoulder Pain. *Korean J Spine*. 2012;9(3):223–6.
12. Costello M. Treatment of a Patient with Cervical Radiculopathy Using Thoracic Spine Thrust Manipulation, Soft Tissue Mobilization, and Exercise. *J Man Manip Ther*. 2008;16(3):129–35.

13. Moustafa IM, Diab AA. Multimodal Treatment Program Comparing 2 Different Traction Approaches for Patients with Discogenic Cervical Radiculopathy: A Randomized Controlled Trial. *J Chiropr Med.* 2014;13(3):157–67.
14. Hirpara KM, Butler JS, Dolan RT, O'Byrne JM, Poynton AR. Nonoperative Modalities to Treat Symptomatic Cervical Spondylosis. *Adv Orthop.* 2012;2012:294857.

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