

Occupation - Based Prevalence of Cervical Spondylosis in the Masonry Profession

Riya Varghese¹, Sofy Sunny², Dr. Mohan Varghese³

¹Pharm D Intern, Nazareth College of Pharmacy, Othara, Thiruvalla, Kerala (Corresponding Author)

²Pharm D Intern, SCS College of Pharmacy, Harapanahalli, Karnataka

³Consultant Physician and Professor, Department of General Medicine, Believers Church Medical College Hospital, Thiruvalla, Kerala

Abstract: *Cervical spondylosis is an age-related condition involving the degeneration of neck discs and vertebrae. As part of the natural aging process, intervertebral discs undergo wear and tear, leading to the development of this condition. It is characterized by bone spur formation and ligament thickening. It manifests with symptoms such as neck pain and stiffness, occasionally involving nerve root compression. Its prevalence highlights its association with aging, though individual experiences of its impact can vary. In this case report, we shall discuss and evaluate the occupation-based prevalence of cervical spondylosis which includes various sectors of life. This study is done to report on the prevalence based on occupation about the musculoskeletal symptoms, the patient presents.*

Keywords: Cervical Spondylosis; Compressive Radiculomyelopathy; Musculoskeletal symptoms; Occupational disease

1. Introduction

In the realm of musculoskeletal health, cervical spondylosis emerges as a prevalent and multifaceted degenerative condition, prominently observed in the 50–60-year age demographic². Rooted in the inexorable aging process, this ailment is intricately linked to the intrinsic axial load borne by the cervical spine, a burden imposed by the weight of the cranium throughout one's lifespan. Notably, occupational nuances play a pivotal role, with certain professional demands, characterized by repeated or prolonged neck movements, contributing to the intricate tapestry of degenerative changes in the cervical spine⁴.

This intricate interplay has garnered attention on the global stage, as evidenced by the recent inclusion of occupation-related degenerative changes in the cervical spine within the disease register of occupational diseases in Germany. Cervical spondylosis, often manifesting as intermittent neck pain in the middle-aged and elderly, reaches advanced stages marked by the potential for spinal cord compression⁵. In the contemporary landscape, it stands as a paramount contributor to the loss of position and vibratory sense.

Beyond the realms of occupation, the biomechanical impact of carrying substantial loads on the head further accentuates the vulnerability of the cervical spine. As the cranial and dynamically mobile segment of the vertebral column, the cervical spine becomes a focal point for stress when tasked with bearing the weight of loads ranging from 50 to 100 kg. It aims to unravel the intricate web of factors contributing to cervical spondylosis, encompassing the inevitabilities of aging, occupational intricacies, and the biomechanical consequences of weight-bearing practices¹.

2. Case Report

A 49-year-old male patient presented to the Department of General Medicine with complaints of right-sided body pain (arms, chest, pelvis, legs) for 5 days. The pain aggravated on

changing the position but relieved on taking rest. The patient has been a smoker and an alcoholic for 10 years. An MRI of the cervical spine was taken which showed cervical spondylosis, loss of cervical lordosis, diffuse disc bulge causing thecal sac indentation, and minimal left neural foraminal narrowing at C3-C4, C4-C5 levels and mild disc bulge abutting thecal sac at C5-C6 level. The patient was diagnosed with compressive radiculomyelopathy.

3. Discussion

Cervical spondylosis, a degenerative condition affecting the neck's vertebrae and discs, typically makes its presence felt after the age of 40 in both men and women⁶. It often becomes a source of chronic pain and stiffness in the neck, attributed to factors like disc slip, aging, and degenerative changes in the cervical spine. The origins of cervical spondylosis are diverse, ranging from faulty sleeping habits and sudden neck jerks to the pressures of stress, anxiety, and occupational hazards, particularly among professions like masons and coolies who bear additional loads on their necks⁷. These varied factors contribute to the complexity of its etiology. Degeneration of vertebral bodies and discs can lead to the irritation of neural beds and nerve roots, potentially resulting in the formation of osteophytes. Etiological factors include advancing age, genetic predisposition, and underlying bone disorders affecting the spine. Amidst this multifaceted landscape, conservative treatment options take center stage. Heat, traction, and isometric exercises emerge as key elements in the arsenal against cervical spondylosis, offering a non-invasive approach to alleviate the associated discomfort³.

Our case report scrutinizes the prevalence of cervical spondylosis in the masonry profession, examining the impact of variables such as age, occupational tenure, load-bearing weight, and daily working hours. We conducted an in-depth exploration of musculoskeletal symptoms, encompassing aspects like pain, stiffness, and other discomforts associated with cervical spondylosis. The data was collected by direct interview using the questionnaire.

Various standardized scoring systems are used to evaluate the patient concerning the occupation as mentioned in Table 1.

The functional independence of the patient was assessed by using the Barthel Index and it was found that the patient was partially independent⁸. A modified version of the standardized Nordic questionnaire was used to assess the musculoskeletal complaints. The administered questionnaire featured inquiries about demographic details, occupational tenure as a mason, load-bearing metrics, and daily working hours⁹. The quality of life of the patient was assessed by

using a Short Form Survey (SF 36) which measures the physical functioning, role limitations, emotional well-being, social functioning, energy/fatigue, pain, and general health perceptions and found that cervical spondylosis has significantly affected the physical functioning, emotional and social well-being of the patient¹⁰. The mental well-being of the patient was assessed by using the Warwick Edinburgh Mental Well-Being Scale (WEMWBS)¹¹. The financial well-being of the patient was assessed by using the Consumer Financial Protection Bureau (CFPB) Financial Well-Being Scale, where the score was 51 showing a moderate range of financial well-being in this patient.

Table 1: Assessing Occupational Prevalence in a Patient with Cervical Spondylosis By Using Standardized Scoring System

Parameter	Scale Used & Result Obtained
Functional Independence	Barthel Index - Partially Independent
Neck affected	Standardized Nordic questionnaire- 100%
Quality of Life	SF 36 Scale Physical Functioning - 60% Role Limitations Due To Physical Health - 80% Role Limitations Due To Emotional Problems - 0% Energy/ Fatigue - 50% Emotional Well Being - 60% Social functioning - 70% Pain - 100% General Health - 60% Health Change - 50%
Mental Well Being	Warwick Edinburgh Mental Well-Being Scale score: 50 - Moderate Mental Well-Being
Financial Well Being	CFPB Financial Well-Being Scale score: 51- Moderate Financial Well Being

Cervical spondylosis is characterized by degenerative changes affecting the cervical spine, and its impact on the quality of life can vary among individuals. Our patient is a mason by occupation and suffers from severe neck pain. Masons, due to the nature of their work, may be exposed to physical strain and postures that could contribute to the development or exacerbation of cervical spondylosis. Understanding the specific challenges faced by masons and implementing strategies to minimize the risk and impact of cervical spondylosis in this occupational group is crucial for maintaining a better quality of life for these individuals. Occupational health and safety guidelines should be designed to address the unique needs and risks associated with the masonry profession.

4. Conclusion

The occupational prevalence of cervical spondylosis underscores the significance of understanding and addressing the impact of this degenerative condition in specific work settings. Individuals in certain occupations, such as masonry or any profession involving repetitive neck movements, sustained postures, or heavy lifting, may face an increased risk of developing cervical spondylosis. It emphasizes the need for preventive measures, such as ergonomic work practices, regular breaks, and exercises to strengthen the neck and shoulder muscles. Additionally, prompt medical attention and management can help alleviate symptoms and improve overall well-being. Increasing awareness among workers, employers, and healthcare

professionals about the occupational risks of cervical spondylosis is important.

Acknowledgement

The author would like to express sincere gratitude and regards to the Department of General Medicine, Believers Church Medical College Hospital, Thiruvalla for helping in publishing this case report. Thankful for their constant support and help.

Conflicts of interest:

The authors declare that the case report was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Abbreviations:

MRI - Magnetic Resonance Imaging

SF 36 - Short Form Survey

WEMWBS - Warwick Edinburgh Mental Well-Being Scale

CFPB - Consumer Financial Protection Bureau

References

- [1] Sudhir Singh, Dharmendra Kumar. Risk factors in cervical spondylosis, Journal of Clinical Orthopaedics and Trauma, Volume 5, Issue 4, 2014, 221-226.
- [2] D.H. Irvine, J.B. Foster, Prevalence of cervical spondylosis in general practice, The Lancet, May 22, 1965.
- [3] Sandeep S Rana, MD, Diagnosis and Management of Cervical Spondylosis. Medscape, 2015.

- [4] Binder AI. Cervical spondylosis and neck pain. BMJ: British Medical Journal. 2007 Mar 10; 334(7592):527.
- [5] Hyun-Jin Jo et al., Unrecognized Shoulder Disorders in Treatment of Cervical Spondylosis Presenting Neck and Shoulder Pain, The Korean Spinal Neurosurgery Society, 9(3):223-226, 2012.
- [6] Moon MS, Yoon MG. Age-Related Incidence of Cervical Spondylosis in Residents of Jeju Island. Asian Spine J. 2016 Oct;10(5):857-868.
- [7] Mahbub MH, Laskar MS. Prevalence of cervical spondylosis and musculoskeletal symptoms among coolies in a city of Bangladesh. J Occupational Health. 2006 Jan; 48(1):69-73.
- [8] Mahoney, F. I. (1965). Functional evaluation: the Barthel index. Maryland State Medical Journal, 14(2), 61-65.
- [9] I. Kuorinka, B. Jonsson. Standardized Nordic questionnaires for the analysis of musculoskeletal symptoms, Applied Ergonomics, Volume 18, Issue 3, 1987, 233-237.
- [10] Oh T, Lafage R. Comparing Quality of Life in Cervical Spondylotic Myelopathy with Other Chronic Debilitating Diseases Using the Short Form Survey 36-Health Survey. World Neurosurg. 2017 Oct; 106:699-706.
- [11] "Warwick Edinburgh Mental Well-Being Scale (WEMWBS) © NHS Health Scotland, University of Warwick and University of Edinburgh, 2006, all rights reserved.