RESEARCH ARTICLE

Frequency of cervical radiculopathy among patients with chronic cervical pain in Lahore, Pakistan

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Abstract

Objective: To determine the frequency of cervical radiculopathy in cases of non-traumatic chronic neck pain.

Method: The descriptive cross-sectional study was conducted from September 2015 to February 2016 at the Department of Physiotherapy, Azra Naheed Medical College, Superior University, Lahore and comprised patients of either gender aged 20-50 years with chronic neck pain lasting more than 6 months. Data was collected using a 14-point self-administered questionnaire. Spurling test was applied to find out the occurrence of radiculopathy in chronic neck pain and the intensity of pain was rated using visual analogue scale. Data was analysed using SPSS 21.

Results: Of the 196 patients, 135(68.9%) were females and 61(31.1%) were males. The largest age group was 20-30 years with 75(38.3%) patients. Also, 46(23.5%) patients had no neck pain, 144(73.5%) had moderate pain and 6(3.1%) had unbearable pain. Radiculopathy was negative in 84(42.9%) patients and positive in 112(57.1%).

Conclusion: Cervical radiculopathy was found to be associated with chronic neck pain.

Keywords: Spurling test, Visual analogue scale, Radiculopathy, Activity of daily living, ADL, Quality of life, QOL. (JPMA 70: 1720; 2020) **DOI: http://doi.org/10.5455/JPMA.6815**

Introduction

Cervical radiculopathy (CR) is a syndrome in which pain is due to the compression of cervical nerves that causes pain along the nerve pathway in the hand and the arm. The pain radiates into the chest, neck, shoulder, upper back and is associated with muscle weakness, numbness or tingling in the fingers or hand. If the cervical disc herniates and impinges on the adjacent nerve, it can cause CR.[1]

A study on the prevalence of cervical spondylotic radiculopathy (CSR) in a Sicilian municipality showed that due to methodological differences, there was a difference in reported CSR prevalence.[2]

One study reported that the prevalence of fibromyalgia and radiculopathy with disc herniation was 11.5% and 78.8% respectively.[3]

One on CR patients and those with whiplash-associated disorders concluded that CR patients' condition gets worse day by day.[4]

A study on patients with radiculopathy without myelopathy detected CR using prospective outcome analysis.[5]

An earlier study concluded that for the improvement of myelopathy and radiculopathy, all varieties of laminectomy were very important.[6]

A study reported the prevalence of neck pain at approximately 15% and concluded that cervical deformity occurred only among people who did not get treatment for relatively minor disorders of the neck.[7]

A study on radiculopathy of C5 after anterior decompression for cervical myelopathy concluded that severe stenosis C3-C4 and C4-C5 in patients with ossification of posterior longitudinal ligament was a risk factor for paralysis and preoperative muscle weakness is a factor predictive of slow recovery.[8]

The current study was conducted to determine CR frequency in cases of non-traumatic chronic neck pain.

Patients and Methods

The descriptive cross-sectional study was conducted from September 2015 to February 2016 at the Department of Physiotherapy, Azra Naheed Medical College, Superior University, Lahore and comprised patients of either gender aged 20-50 years with chronic neck pain lasting more than 6 months. After approval from the institutional ethics committee, the sample size was calculated using the formula:

$$\text{Sample size} = Z_{1-\alpha/2}^2\, p(1-p) / d^2$$

The formula was used by taking standard normal variate at 5% type I error ($Z_{1-\alpha/2}$) = 1.96, expected proportion in population (P) = 0.15, and absolute error (d)= 0.05.[9] The

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sample was raised using convenience sampling technique. Patients with chronic neck pain due to any systemic reason, such as angina, migraine, cardiopulmonary etc., and those who had recent surgery such as cervical surgery, thoracic surgery, brain surgery, shoulder surgery were excluded.

After taking informed consent from the subjects, data was collected using a 14-point self-administered questionnaire. Spurling test was used under the supervision of senior physiotherapists after the diagnosis of chronic neck pain and the pain intensity was assessed using the visual analogue scale (VAS), which is a modest and routine technique used in such situations.[10] In Spurling test[11], which is a diagnostic tool, the practitioner moves the head of the patient to the affected side while extending and applying downhill pressure to the head. The test is considered positive when the neck pain radiates towards the parallel dermatome ipsilaterally.[12]

The validity and reliability of VAS as well the sensitivity and specificity of Spurling test have been reported to be satisfactory in literature.[13,14]

Data was analysed using SPSS 21 and expressed as frequencies and percentages.

Results

Of the 196 patients, 135(68.9%) were females and 61(31.1%) were males. The largest age group was 20-30 years with 75(38.3%) patients (Table-1). Also, 46(23.5%) patients had no neck pain, 144(73.5%) had moderate pain and 6(3.1%) had unbearable pain. Radiculopathy was negative in 84(42.9%) patients and positive in 112(57.1%) (Table-2).

Table-1: Demographic profile.

Variables	Frequency n=196	Valid %
Gender		
Male	61	31.1
Female	135	68.9
Age (years)		
20-30	75	38.3
31-40	74	37.8
41-50	47	24
Socioeconomic status		
Upper class	40	20.4
Middle class	95	48.71
Lower class	61	31.12
Occupation		
Government	70	35.7
Private	115	58.6
Retired	11	5.61

Table-2: Variables related to radiculopathy in chronic cervical pain.

Variables	Frequency	Valid %
Neck pain		
Yes	196	100
No	0	0
Visual analogue scale		
Mild pain	46	23.5
Moderate pain	144	73.5
Unbearable pain	6	3.1
Spurling test		
Negative	84	42.9
Positive	112	57.1

According to Budgetary Position of Households by Income and Quintiles, 2018-19 by Pakistan Bureau of Statistics, the average monthly income of household in Pakistan ranges from Rs. 23894 to Rs. 60278. The participants with average monthly household income within this range were considered as middle class. The participants with average monthly household income below and above this range were categorized as low and high class respectively.[18] The current study found that neck pain was moderate or severe in 150(76.5%) which is in line with literature.[15]

Discussion

The current study found that neck pain was moderate or severe in 150 (76.5%) which in line with leterature.[15]A study showed that radicular symptoms are more common in cases with neck pain for two months, but there is no evidence that those patients had radiculopathy, whereas the current study showed that radicular symptoms were more common in those cases that had neck pain for more than six months and CR in these patients was confirmed by Spurling test.[16] In the earlier study, pain intensity on VAS was moderate to severe in cases with neck pain for two months which is considered acute rather than chronic.[16]

One study showed the presence of radiculopathy and positive Spurling test to be associated with moderate to severe intensity of pain on VAS,[17] whereas the current study showed that radiculopathy and positive Spurling test were present in patients aged 20-30 years and neck pain radiculopathy was more common in the 20-40 age group.

Conclusion

Cervical radiculopathy was found mostly in patients who experienced chronic neck pain with moderate intensity. Radiculopathy was found to be associated with chronic neck pain.

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Conflict of Interest: None.

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