

ORIGINAL ARTICLE

## Clinico-Demographic Characteristics of Cervical Spondylosis Patients Presented with Chest Pain

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### Abstract

**Background:** The prevalence of non-cardiac chest pain is estimated to be more than 65.0% of all cases with chest pain. **Objective:** The objective of the present study was to see the clinic-demographics characteristics and investigational findings of cervical spondylosis patients presented with chest pain. **Methodology:** This cross-sectional study was carried out in the department of Physical Medicine & Rehabilitation at National Institute of Cardiovascular Disease (NICVD), Dhaka, Bangladesh from July 2012 to June 2013 for a period of one year. The diagnosis was made by detailed history, clinical examination and relevant investigations. **Result:** In this study, female (60%) were much more sufferer especially in much younger age group (41.67%). People from urban area (68.75%) and affluent status (41.67%) were more affected; also who were in anxiety-depressed state of mind (50%) and those who worked by neck bending posture (45.83%). All patients presented with chest pain (100%) & other associated symptoms like arm pain (41.67%), tingling sensation of left upper limb (22.91%), shoulder pain (25.0%) and scapular pain (16.67%). All (100%) patients had normal ECG finding. On the other hand, they (100.0%) had some finding in cervical spine X-ray; clinically the patient had painful neck movement (75.0%). A specific test for cervical radiculopathy “spurling maneuver” was positive in (22.91%). **Conclusion:** Through chest pain due to cervical disc disease widely reported but remains under recognized. So careful evaluation of patient for chest pain might have saved the patient for admission and various expensive invasive procedure. [*Journal of Current and Advance Medical Research 2018;5(2):55-59*]

**Key words:** Chest pain; non-cardiac cause of chest pain; atypical presentation; cervical spondylosis

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## Introduction

Chest pain is a major health problem that brings the people attending to the hospital<sup>1</sup>. Chest pain accounts for approximately all patient visited to the emergency and outpatient department of National Institute of Cardiovascular Disease (NICVD). The etiology of chest pain ranges from life threatening condition to those that are relatively benign. People may be worried that they are having a heart attack<sup>2</sup>. But patient may have musculoskeletal chest pain arising from spine, nerves and muscles. Sometimes musculoskeletal chest pain mimics cardiac chest pain<sup>3</sup>. Cervical spondylosis is one of the atypical presentation of chest pain<sup>4</sup>.

In cervical spondylosis, degenerative changes starts in the intervertebral disc of cervical spine with osteophyte formation and involvement of adjacent soft tissue structures. Which produces symptoms like pain in the neck that may radiates to the upper chest and also to the left upper limb<sup>5</sup>. Bony spur appears at the anterior and posterior margin of the vertebral bodies which may encroach upon the intervertebral foramina. This may produce pain in the upper chest with radiation to the upper limb and also associated with or without headache and occasionally vertigo<sup>6-7</sup>. Cervical spondylosis usually affect people above the age of 40 and is responsible for varying grades of disability one of which is chest pain. Chest pain is one of the common symptom that brings an individual to the emergency department. People are very much afraid of chest pain as they have a common idea that is chest pain means something affect the heart like heart attack or coronary artery disease. But that is not true. The prevalence of non-cardiac chest pain is estimated to be more than 65.0%<sup>8</sup>. For that reason the individuals are routinely advised to seek medical evaluation for most types of chest pain.

Deciding the cause of chest pain is sometimes very difficult and may require blood test including cardiac enzyme, x-rays, MRI and other costly invasive test to sort out the diagnosis<sup>9</sup>. Therefore the present study was designed to make out the association of chest pain and atypical presentation of cervical spondylosis.

## Methodology

This was a cross sectional study carried out in the outpatient department of physical Medicine & Rehabilitation at National Institute of Cardiovascular Disease (NICVD), Dhaka, Bangladesh during the period of July 2012 to June

2013 for a period of one year. All the cervical spondylosis patients presented with chest pain were selected as study population. Whenever a case was selected, a prescribed data sheet had been given to patient. With informed consent of the patient a detailed history of each patient was taken. Each patient went under thorough clinical examination and some important relevant investigations were done & recorded. All the collected data were analyzed properly with SPSS version 20.0. The qualitative data were expressed in frequency and percentage.

## Result

A total number of 240 patients were recruited for this study. The age of youngest patient was 18 years and the eldest 55 years. The highest number of sufferers was in the 26-35 years age group (41.67%) (Table 1).

**Table 1: Age Distribution of the Patients (n=240)**

Age Group	Frequency	Percentage
18 to 25 Years	40	16.67
26 to 35 Years	100	41.67
36 to 45 Years	80	33.33
46 to 55 Years	20	8.33
<b>Total</b>	<b>240</b>	<b>100.0</b>

Female patients (60.42%) are more sufferer than the male (39.58%) (Table 2).

**Table 2: Gender Distribution (n=240)**

Gender	Frequency	Percentage
Male	95	39.58
Female	145	60.42
<b>Total</b>	<b>240</b>	<b>100.0</b>

Here shown that affluent people are much more conscious about their sufferings.

**Table 3: Socioeconomic Status of the Patients (n=240)**

SE Status	Frequency	Percentage
Lower middle class	55	22.92
Middleclass	85	35.42
Affluent	100	41.67
<b>Total</b>	<b>240</b>	<b>100.0</b>

SE=Socioeconomic status

People living in urban area (68.75%) are more sufferer.

**Table 4: Residential status among the Study Population (n=240)**

Area	Frequency	Percentage
Rural	75	31.25
Urban	165	68.75
<b>Total</b>	<b>240</b>	<b>100.0</b>

This table 5 shown that patient who were related with desk work such as typing, computer work, banker etc, about 110(45.83%) are more sufferer. Next to them are housewives 60(25%) cases.

**Table 5: Occupational Status of Patients (n=240)**

Occupation	Frequency	Percentage
Student	40	16.67
Table worker	110	45.83
Housewives	60	25.0
Farmers	30	12.5
<b>Total</b>	<b>240</b>	<b>100.0</b>

Most of the patients was in a mental state of anxiety-depression 120(50%). Also stressful life 80(33.33%) leads next (Table 6).

**Table 6: Mental Condition of the Patient (n=240)**

Mental Condition	Frequency	Percentage
Normal	40	16.67
Stressful	80	33.33
Anxiety depression	120	50.0
<b>Total</b>	<b>240</b>	<b>100.0</b>

This table shown that all of the patients had chest pain (100%). Associated with arm pain 85(41.67%), shoulder pain 60(25%), scapular pain 40(16.67%) and tingling sensation of upper limb 55(22.91%) cases (Table 7).

**Table 7: Presenting Features of the Patient (n=240)**

Types of Pain	Frequency	Percentage
Chest pain	240	100.0
Arm pain	85	41.67
Shoulder pain	60	25.0
Scapular pain	40	16.67
Tingling sensation of left upper limb	55	22.91

<b>Total</b>	<b>240</b>	<b>100.0</b>
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Every patient (100.0%) had negative ECG finding. On the other hand, all of the patient (100.0%) had some positive finding in x-ray of cervical spine. Only (4%) patient had positive MRI finding of cervical spine (Table 8).

**Table 8: Investigation of the Patient (n=240)**

Name of Test	Frequency	Percentage
Normal ECG	240	100.0
Normal Echo	100	41.67
Abnormal X-Ray Cervical Spine	240	100.0
Abnormal MRI of Cervical Spine	10	4.0
<b>Total</b>	<b>240</b>	<b>100.0</b>

Here found that maximum patient (75%) had painful neck movement when he/she did that by himself/herself. By examiners when neck movement was done painful neck movement was less (25%). Special type of neck movement that was spurling maneuver was positive in 23% cases (Table 9).

**Table 9: Clinical Examination (n=240)**

Name of Test	Frequency	Percentage
Painful Active Neck movement	180	75.0
Painful Passive Neck movement	60	25.0
Positive Spurling maneuver	55	22.91
<b>Total</b>	<b>240</b>	<b>100.0</b>

## Discussion

Chest pain is one of the most common cause of patients seeking help in emergency<sup>10</sup>. About 20.0 to 40.0% of the general population affected by chest pain during their lifetime<sup>11</sup>. And people may be worried that they are having heart attack or some coronary artery disease (CAD). But there are many other cause of chest pain except cardiac cause. One of which is atypical presentation of cervical spondylosis. Usually, cervical spondylosis is presented with neck pain and stiffness with or without associated with other symptoms.

However, in some case, patient present with chest pain without neck pain. A few case patient presents with pain in the arm or tingling sensation of left

upper limb which is a possible complication of cervical spondylosis- cervical radiculopathy. When changes occur in bone structure for example; formation of bone spurs causes pressure on nerves as they exit through the intervertebral foramina, pain shooting down into one or both arms<sup>4,12</sup>.

In this study total 240 patients with chest pain were included. Among them 100(41.67%) cases were in the age group of 26 to 35 years and 80(33.33%) cases were in the age group above 35. Mostly, sufferers are female (60.42%). Socioeconomic status of the patients were affluent (41.67%) as they are much more conscious about chest pain and they came mostly from urban area (68.75%). People who were working by neck bending such as computer workers, bankers and dentists were about 45.83%. Interesting thing was next common group was housewives 25.0%. Another thing noticed by this study was mostly about 50.0% patients were suffered from anxiety depression and 33.33% were in a stressful condition of mind when they were suffered from chest pain.

Chest pain due to cervical spondylosis often presents with anterior chest pain<sup>13</sup> and some patients may even experience relief with nitroglycerin<sup>14</sup>. It may associated with headache, nausea, fatigue even vertigo. But the mechanism is not well explained<sup>15</sup>. Expect in the case of obvious nerve root compression, neurologic findings are often absent or nonfocal<sup>16</sup>. A positive spurling maneuver have specificity of 94.0% with cervical nerve root pathology<sup>17</sup>.

In cervical myelopathy (cervical cord lesion) may create the sensation of angina pain. A detailed history, clinical examination and functional tests may be helpful in confirming the etiology of cervical chest pain<sup>7</sup>. Despite being first described in 1934, the diagnosis of cervical chest pain remain under recognized<sup>18</sup>. Most cases of cervical spondylosis with radiculopathy treatment are conservative.

They include rest, drugs, physiotherapy and exercise and manipulation<sup>19</sup>. Sometimes injecting medication (corticosteroids and a local anesthetic) into the joints of the spine may be needed<sup>20</sup>. Although the true incidence and prevalence of this condition are unknown, many patients undergo extensive cardiac evaluation and often experience a delay in diagnosis.

## Conclusion

Though chest pain due to cervical disc disease widely reported but remains under recognized. Recognition of the condition requires a high index of suspicion and an awareness of the common presenting features & clinical findings. After a careful evaluation, the most suitable course of treatment should be given to the patient. Chest pain is inherently difficult to diagnose. But in a patient with detailed history, no prior cardiac history, negative ECG change and a positive x-ray cervical spine finding might have saved the patient an admission, a treadmill test and expensive invasive cardiac catheterization.

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