Cervical Angina: An Unnoticed Cause of Noncardiac Chest Pain

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ABSTRACT

Introduction: Cervical angina is one of the commonly unnoticed causes of chest pain with frequent presentation in cardiology outpatient department (OPD). **Objectives:** This is a retrospective study with the objective to analyze the symptoms and study the clinical, neurophysiological and radiological profile of patients with cervical angina. **Study design:** A retrospective study was carried out in the Dept. of Neurology, SMS Medical College and Hospital, Jaipur, from September 2015 to July 2018. In this study, records of 25 patients were analyzed who were admitted and diagnosed with noncardiac chest pain after normal cardiac investigations who underwent neurological work-up. **Results:** Out of 25 patients, 8 (32%) were found to have cervical radiculopathy and 2 (8%) had carpal tunnel syndrome. Chest pain accompanied with neck pain was the most common presentation (24%) followed by left arm pain (16%) and shoulder pain (8%). **Conclusion:** A good history taking by physicians and cardiologists should be the basis to reach at the diagnosis of cervical angina. Thus, a high index of suspicion is required in order to save the patient from the burden of unnecessary invasive investigations and stress.

Keywords: Cervical angina, cervical radiculopathy, chest pain, neck pain

"Cervical angina is defined as a paroxysmal precordialgia that resembles true cardiac angina resulting from cervical pathology and nerve root compression," also known as pseudoangina.[1,2]

Cervical angina mostly occurs due to cervical spine disorders mimicking true angina pectoris, i.e., manifesting as pain in upper chest and scapular areas.[3,4] Pathologies like cervical intervertebral disk diseases, ossified posterior longitudinal ligament (OPLL) or other spinal disorders frequently present with atypical chest pain and are misdiagnosed as cardiac pain, thus, are subjected to an exhaustive list of costly investigations.[5] These patients are sometimes started on antianginal medications with no relief of symptoms subsequently. Thus, to decrease the financial burden and to reach the appropriate diagnosis, other mimickers of anginal pain should be thought of, one of them being cervical angina. Physicians and cardiologists should be well-versed with the symptomatology of cervical angina and keep a high index of suspicion while referring any patient with atypical chest pain for further evaluation. In this study, the importance of clinical symptomatology of cervical angina has been emphasized in order to save the patient from unnecessary expenditure of investigations and medications.

It is difficult to determine the cause of chest pain as cervical angina. Cervical angina may present with dull aching to moderately severe type of anterior chest pain with radiation to back, scapular region and arms. Neurological examination is mostly normal except for cases with prominent disk displacement. Thus, it strongly mimics angina pectoris and such patients usually present directly, or are referred, to a cardiologist for ruling out ischemic heart disease.

MATERIAL AND METHODS

A retrospective study was performed in the Dept. of Neurology, SMS Medical College and Hospital, Jaipur, from September 2015 to July 2018. In this study, records of 25 patients who were admitted and diagnosed with noncardiac chest pain after normal cardiac investigations and found unresponsive to antianginal medications who underwent neurological work-up were included.

The patients with true cardiac chest pain, or with any abnormality in cardiac work-up and those with past history of cervical spine surgery were excluded.

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RESULTS

The age of the patients ranged from 40 to 84 years (mean age 57.24 years; Table 1). Out of 25 patients, 10 (40%) patients had neurological cause of chest pain, in which 8 (32%) patients (5 males, 3 females) had cervical nerve root compression and 2 (8%) female patients had carpal tunnel syndrome. One female patient had bilateral carpal tunnel syndrome and 1 female patient had left-sided carpal tunnel syndrome (Table 2). The mean duration of symptoms was 4.36 months. Chest pain accompanied with neck pain was the most common presentation (24%) followed by left arm pain (16%) and shoulder pain (8%) (Table 3). Out of 25 patients, 16 (64%) patients had dull aching type of pain, 8 (32%) patients had radiating type of pain and 1 (8%) patient had burning type of pain (Table 4).

Table 1. Age Group-wise Presentation of Noncardiac Chest Pain

Age group	Number of cases	Percentage (%)
40-50	7	28
51-60	8	32
61-70	9	36
71-80	0	0
81-90	1	4

Table 2. Cause of Noncardiac Chest Pain

Cause	Number of cases	Percentage (%)
Radiculopathy	8	32
Carpal tunnel syndrome	2	8
Non-neurological	15	60

Table 3. Presentation of Noncardiac Chest Pain as Neurological Cause

Presentations	Number of cases	Percentage (%)
Chest pain with neck pain	6	24
Left arm pain	4	16
Chest pain with shoulder pain	2	8

Table 4. Nature of Noncardiac Chest Pain

Nature	Number of cases	Percentage (%)
Dull aching	16	64
Radiating	8	32
Burning	1	8

DISCUSSION

In this study, the patients of chest pain with normal cardiac investigations, i.e., electrocardiography (ECG), 2D echocardiography and coronary angiography who underwent neurological evaluation in the form of electrophysiology and cervical magnetic resonance imaging (MRI) were included. In addition to normalcy of investigations, nonresponse to antianginal medications was a strong criteria to defer the diagnosis of angina pectoris and evaluate the patients for noncardiac causes like cervical angina. In this study, electrophysiology and spinal MRI proved to be useful tools to verify the cause of chest pain as cervical angina.

Our study revealed that cervical angina can have diverse presentations such as cervical radiculopathy and carpal tunnel syndrome. The clinical symptomatology

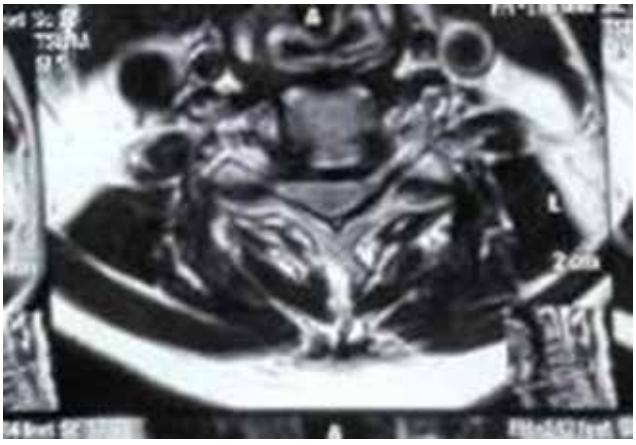

Figure 1. MRI T2W image axial section shows right C5 nerve root compression.

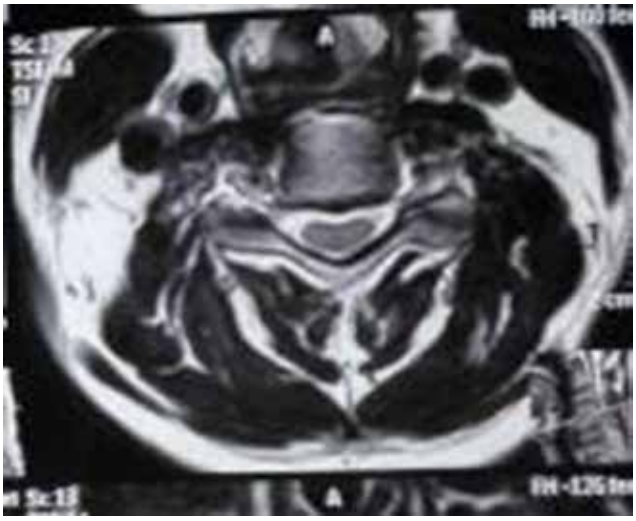

Figure 2. MRI T2W image axial section shows left C6 nerve root compression.

served as a guide to reach to a diagnosis. Patients had associated neck pain, left arm with shoulder pain in addition to chest pain. In many such cases, the clinician gets biased after hearing the symptomatology and suspect a diagnosis of coronary artery disease. Thus, one should keep all symptoms as well as neurological signs in mind before labeling the patient with a particular disease. Radicular pain occurs due to compression of the C5-C8 nerve roots, which carry sensorimotor supply to chest through medial and lateral pectoral nerves. C5-C6 and C6-C7 were the most common sites of pathological nerve root compression in our study (Figs. 1 and 2). MRI cervical spine may show disk desiccation, osteophytes formation, neuroforaminal compression and other age-related degenerative changes. This study demonstrates that cervical angina is an underdiagnosed and unnoticed entity which requires a high index of suspicion for diagnosis to prevent unnecessary financial and psychosocial burden.

CONCLUSION

Cervical angina is a strong mimicker of angina pectoris which requires a careful history taking by the physician and cardiologist. Unnecessary invasive investigations like coronary angiography can be prevented if a high index of suspicion is observed for cervical angina. This will lead to an early diagnosis thus saving the time and expenditure of patient, avoidance of transportation to higher center with catheterization laboratory facility and the most important of all, unnecessary stress to patient and family members.

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