International Journal of Yoga, Physiotherapy and Physical Education
Online ISSN: 2456-5067; Impact Factor: RJIF 5.24
www.sportsjournal.in
Volume 2; Issue 4; July 2017; Page No. 109-111

Cervical spondylosis or thoracic outlet syndrome: An enigma: Case report

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Abstract

Background: Thoracic outlet syndrome is a group of disorders that occurs when blood vessels or nerves in the space between clavicle and first rib are compressed. This causes pain in shoulders and neck and numbness in fingers. Purpose behind this case report is to bring it to the notice of therapists, the need to be wary of thoracic outlet syndrome which might get unnoticed since the symptoms of thoracic outlet syndrome & other cervical pathologies mostly appear similar. Thoracic outlet syndrome patients usually get the conventional treatment for cervical spondylosis and continue getting it for long without getting much relief from the symptoms. Thoracic outlet syndrome gets missed since number of cases of cervical pathology is far more as compared to thoracic outlet syndrome.

Methods: This case report comprises of two cases of thoracic outlet syndrome, seen at physiotherapy outpatient department, at Shree Guru Gobind Singh Tricentenary University Hospital, in the last six months. Both the patients received treatment for cervical spondylosis elsewhere, before being correctly diagnosed as a case of thoracic outlet syndrome at Shree Guru Gobind Singh Tricentenary University Hospital.

Results: After three weeks of treatment patient reported marked decrease in pain in neck and affected upper limb. Range of motion of affected shoulder also increased.

Conclusion: Knowledge and application of correct differential diagnosis is a must to get positive results well in time.

Keywords: enigma, spondylosis

Introduction

Thoracic outlet syndrome is a clinical syndrome resulting from neurovascular disorders in the space defined between the outer surface of the clavicle and upper ribs. It is brought about by compression of neural structures as well as blood vessels located within the thoracic outlet [1]. Such a compression may include brachial plexus, subclavian artery, subclavian vein and axillary vein. This compression often occurs in reduction places of bundles, anatomic vascular disorders, muscles within inclined slot, the rib-clavicular, and in the space between the coracoid process and the pectoralis minor tendon [2]. The factors leading to formation of TOS may be congenital or acquired causes. Acquired causes most often have their source in posttraumatic complications or may be due to tumour growth. In contrast, congenital causes include anatomical defects such as cervical ribs [3]. Thoracic outlet syndrome is categorized as being either vascular or neurogenic. The first occurs much less frequently. Here in, compression of the brachial plexus elements leads to impaired upper limb function (rarely affecting both limbs). Displayed symptoms include pain and sensory disturbances. Prolonged pressure on the blood vessels can also induce complications that are associated with the force and duration of compression of the vessel. Compression of the subclavian vein leads to a reduction of blood returning from the periphery, and as a result, bruising and swelling of the upper limb may occur. The arterial vascular type can produce symptoms of both acute and chronic upper limb ischaemia. In the case of chronic oppression, subclavian artery pressure and increase blood flow at the site of stenosis may occur, and may lead to creation of local complications (aneurysms). In special cases, occlusion can arise which may lead to vessel embolism [4]. The incidence of thoracic outlet is, at least, 1-2% of the population. Women are more prone to TOS than men, at a ratio of approximately 3:1. Age range of occurrence of symptomatic TOS is between 20-60 years old [5].

Case report

Case 1

Female patient aged 39, came to the physiotherapy outpatient department at Shree Guru Gobind Singh Tricentenary University hospital on 23rd Jan'2017, Gurgaon. She was referred from ortho inpatient department for the treatment of cervical spondylosis. She was on anti-inflammatory drugs, gabapentin, multivitamins and calcium. Her symptoms included neck pain, stiffness in the neck, pain radiating to right upper limb with numbness and cold upper extremities. Along with medication, she also received physiotherapy for cervical spondylosis. She was given hot pack, transcutaneous electrical nervous stimulation & cervical traction. Her radiological findings revealed spondylotic changes.

Patients problem did not alleviate Symptoms are reproduced or worsened when the arm is above the shoulder or extended. Visual analogue scale for pain was -8/10. All movements of neck & shoulder were painful, especially neck extension. She had an ectomorphic built and was afebrile. Grade 3 tenderness

was present at upper border of scapula and whole right hand. She experienced vertigo. Soft collar was prescribed, but her condition did not improve. She was re-examined. Special tests were performed. Load and shift, anterior apprehension, posterior apprehension, Neer impingement, Hawkins kennedy were all negative. Roos test & adson's maneuver [6] were positive. Roos test is also known as elevated arm stress test (EAST). In this test patient raises their arms to 90 degrees of abduction in the frontal plane of the body with the arms fully externally rotated and the elbows at 90 degrees of flexion. Patient opens and closes their hands for upto 3 minutes. The test is considered positive if the patient is unable to hold the arms up for the 3 minutes, or if the patient experiences pain, heaviness or parasthesia in the shoulder, arm or hands. Adson's sign is the loss of the radial pulse in the arm by rotating head to the ipsilateral side with extended neck following deep inspiration. It's used to diagnose thoracic outlet syndrome. Her physiotherapy treatment was changed based on diagnosis. Hot fermentation, stretching of scalene muscles, upper limb tension tests for median, radial and ulnar nerve with 30 sec hold were given along with chest expansion exercises and breathing exercises. After one week's follow up, her visual analogue scale in pain was reported as 4/10 and range of motions of right upper extremity improved.

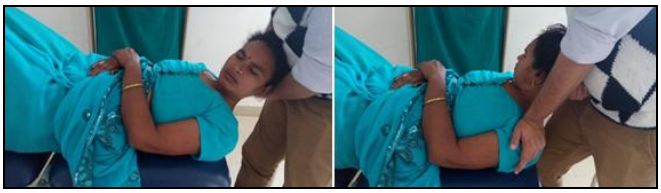

Fig 1

Before treatment

Table 1

Cervical		
Flexion	70	
Extension	60	
	Right	Left
Side flexion	35(pain full)	40
Rotation	65(pain full)	80
Shoulder	Right	Left
Flexion	165(pain full)	170
Extension	45(pain full)	50
Abduction	160(pain full)	170
Adduction	45(painful)	50

After treatment

Table 2

Cervical		
Flexion	75(pain free)	
Extension	65(pain free)	
	Right	Left
Side flexion	40(pain free)	40
Rotation	75(pain free)	80
Shoulder	Right	Left
Flexion	170(pain free)	170
Extension	50(pain free)	50
Abduction	165(pain free)	170
Adduction	50(pain free)	50

Case 2:

Male patient aged 49, came with chief complaint of pain and numbness in right shoulder. Right forearm anteriorly and wrist were painful too. Patient had received 3 months treatment elsewhere, including jerky thrust by a local practitioner near his residence, before coming to physiotherapy outpatient department at Shree Guru Gobind Singh Tricentenary University hospital. His treatment history ranged from ultrasonic waves to short wave diathermy. He was given interferential therapy along with free exercises for shoulder. None provided any relief. Patient was examined again thoroughly, diagnosed as thoracic outlet syndrome case

because Roos test and Adson's maneuver came out positive vis a vis Neer impingement, Hawkins kennedy, apprehension test all of which came out negative. Patient's treatment regime was changed to cervical rib mobilization, scaleni stretching, pectorals stretching along with application of hot pack for 15-20 minutes post therapy. There was remarkable improvement in his range of motion and his pain reduced substantially.

Fig 2

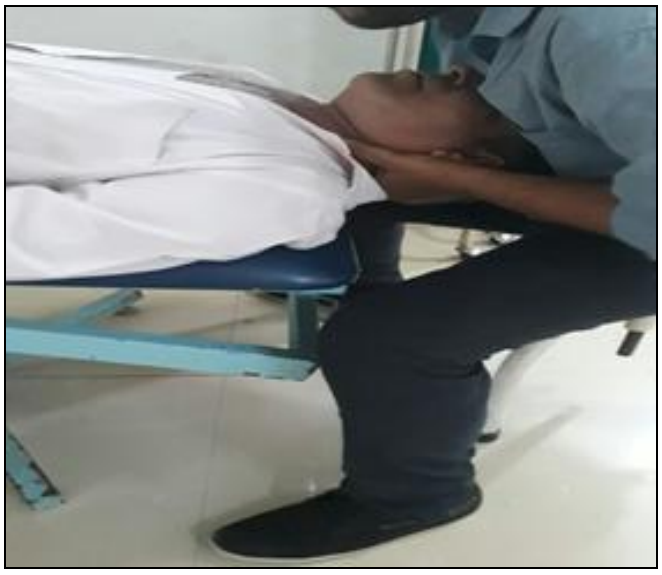

Fig 3

Conclusion

A thorough differential diagnosis is a must to treat patients effectively and to have positive outcomes early. Advancements in the profession should be incorporated well in time.

The authors report no declarations of interest.

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