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A case of pseudo–angina pectoris from a pectoralis minor trigger point caused by cross-country skiing

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Abstract

Objective: The aim of this article is to illustrate the pectoralis minor muscle as a possible pain source in patients with anterior chest pain, especially those who are known to be beginner cross-country skiers.

Clinical Features: A 58-year-old man presented with anterior chest pain and normal cardiac examination findings. Upon history taking and physical examination, the chest pain was determined to be caused by active trigger points in the pectoralis minor muscle.

Intervention and Outcome: The patient was treated with Graston Technique and cross-country skiing technique advice. The subject's symptoms improved significantly after 2 treatments and completely resolved after 4 treatments.

Conclusion: This case demonstrates the importance of differential diagnosis and mechanism of injury in regard to chest pain and that chiropractic management can be successful when addressing patients with chest wall pain of musculoskeletal origin.

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Introduction

Chest pain is common, representing the second most common complaint at North American emergency departments; and because of its potential fatality (ie myocardial infarct), overinvestigation occurs frequently and represents a significant expense to the health care system.[1] *Noncardiac chest pain* refers to chest pain in the anterior chest wall that is not due to underlying heart pathology. It is important that noncardiac chest pain is diagnosed early to reassure patient concerns of potential ischemic myocardial infarction.[2] These diagnoses may often include gastroesophageal dysfunction, psychiatric disorders, and

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musculoskeletal causes. Athletes competing in cross-country skiing often experience anterior chest wall pain of mechanical origin because of the repetitive motion of the upper extremities. Beginner cross-country skiers are particularly at risk for this condition as a result of recruitment of smaller muscle groups as opposed to larger muscle groups, particularly as they increase the intensity of their training. The somatic presentation of the pectoralis minor trigger point, as described by Simons et al,[3] mimics cardiac angina and should be considered as a differential diagnosis for chest pain.

To date, there is a paucity of case reports describing pseudo–angina pectoralis caused by pectoralis minor trigger points.[4,5] One recent report documents chest pain with subscapularis trigger points.[6] This case report describes a 58-year-old man presenting with anterior chest wall pain with referral into the medial arm caused by a strain of pectoralis minor from cross-country skiing that was treated conservatively with Graston Technique, and discusses the importance of history taking and biomechanical understanding of cross-country skiing in the diagnosis of musculoskeletal causes of anterior chest pain.

Case report

A 58-year-old white man presented with anterior chest pain and normal cardiac investigation findings. Written informed consent for this case report to be published was obtained from the patient. The patient initially described his chief complaint as left-sided upper shoulder pain with radiation into the neck and down the medial aspect of the arm. There was no pain distal to the elbow joint. The patient revealed that he was a novice cross-country skier and that the pain severity gradually increased and became constant during cross-country skiing. The symptoms of pain and radiation were present during considerable exertion with cross-country skiing, mostly notably when skiing uphill. The symptoms would gradually abate with an easier skiing pace and with complete rest from any physical exertion. There were no other associated symptoms. There was no nausea, vomiting, diaphoresis, light headedness, dyspnea, syncope, anxiety, pallor, or feeling of impending doom. The pain and radiation into the medial aspect of the arm intensified over long periods of cross-country skiing, reaching an intensity of 8/10 on the numeric pain scale (NPS), with associated tachycardia, fatigue, and exhaustion.

The pain in the anterior aspect of the chest wall on the left and down the medial aspect of the left arm was completely relieved with rest. There was pain on palpation to the superior lateral aspect of the chest wall, pectoralis minor muscle, and pectoralis major muscle. Palpation of the superior lateral aspect of the chest wall, pectoralis minor muscle, and pectoralis major muscle revealed an increased sensation of pain over the proximal attachment of each muscle and also produced a slight increase in symptoms in the anterior aspect of the shoulder and down the medial aspect of the arm to the elbow joint.

Prior diagnostic workup included a stress electrocardiogram (ECG) several years prior due to a complaint of pain in the anterior aspect of the chest wall during an extended period of jet boat riding in heavy waves. The previous stress ECG was unremarkable. The attending physician diagnosed the subject with chest pain of chest wall origin based on the history, absence of signs and symptoms of cardiac ischemia, and prior ECG findings. No other diagnostic evaluation was completed at the time. No previous treatment was provided.

At the chiropractic clinic, neurological examination revealed a healthy, well-nourished male subject reporting pain in the anterior aspect of the chest wall on the left with radiation down the medial aspect of the left arm. Neurological examination was within normal limits and was composed of upper limb sensation (pain and light touch), motor evaluation (C5, 6, 7, 8, T1; graded 5/5), and myotendinous reflexes (C5, 6, 7; 2+ bilaterally). There was no evidence of muscular atrophy observed. Vital signs revealed a blood pressure of 106/62 mm Hg and a resting heart rate of 48 beats per minute. He has a body mass index of 25, a height of 165 cm, and a weight of 64 kg. The subject was active in most sports and reported a history of competitive marathon running. The patient has been a runner for the past 30 years with no significant injury.

The chiropractic assessment noted ongoing 8/10 NPS pain with cross-country skiing of considerable exertion, especially skiing uphill. The patient had no previous physical therapy or soft tissue management of the condition. The results of the physical examination revealed mild anterior head carriage and a decreased arm angle on the left side when side lying (shortened pectoralis minor test).[7,8] Cervical spine active and passive ranges of motion were full, with extension and rotation causing mild pain bilaterally. Range of motion testing did not reproduce pain down the medial aspect of the arm. Motion palpation revealed restrictions in the lower cervical and upper thoracic spine. Passive and active ranges of motion of the shoulder were unremarkable. Orthopedic examination of the shoulder

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