



Rhomboids muscle myofascial pain syndrome mimicking cervical disc prolapse

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Abstract

Rhomboid Muscles myofascial pain syndrome is a regional pain syndrome wherein pain originates over the neck area and radiates down to the arm. this condition may present as primary or secondary to underlying cervical pathology. Although Rhomboid Muscles myofascial pain syndrome is a well-known medical entity, it is often misdiagnosed as being some other neck pain associated with radiculopathy, such as cervical disc prolapse, cervical spinal stenosis and thoracic outlet syndrome. because Rhomboids Muscles myofascial pain syndrome mimics cervical radiculopathy, this condition often leads to mismanagement, which can, in turn, result in persistent pain and suffering. in the worst-case scenarios, patients may be subjected to unjustifiable surgical intervention. because the clinical findings in rhomboids muscles myofascial pain syndrome are “pathognomonic”, clinicians should be aware of ways to recognize this disorder and be able to differentiate it from other conditions that present with neck pain and radiculopathy. We present unilateral rhomboids muscles myofascial pain syndrome that significantly impaired the patients’ functioning and quality of life. This research serves to create awareness about the existence of the syndrome and to highlight the potential morbidity due to clinical misdiagnosis.

Keywords: cervical radiculopathy, myofascial pain syndrome, pain radiation, rhomboid muscles, trigger point, medical sciences

Introduction

Myofascial Pain Syndrome (MPS) is a medical term used to describe chronic regional pain syndrome that presents with hyperirritable spots called trigger points (TPs) and/or tender spots (TSs) that arise from taut bands (TB) in the skeletal muscle. This chronic pain syndrome is often accompanied by a bizarre referred pain pattern that is specific to the muscle involved [1]. Functionally, MPS causes the muscle to become weak and stiff, leading to reductions in range of movement. Thus, MPS is known as a major cause of morbidity, with a significant impact on daily activity, function and quality of life [1, 6]. Myofascial pain is treatable but is often under-treated due to lack of awareness among clinicians [3].

Rhomboid muscles myofascial pain is a relatively common myofascial pain syndrome; however, it is commonly under-diagnosed or misdiagnosed as being some other neck pain-associated radiculopathy [2, 3, 4]. The most preferred diagnoses among clinicians are cervical disc herniation/prolapse, cervical stenosis and

thoracic outlet syndrome (TOS), as most of these conditions are associated with neck pain and pain radiation to the arm [3, 4]. In other situations, the neurological symptom associated with Rhomboid muscles myofascial pain syndrome may either present with referred pain to the distal arm mimicking other well-known causes of neuropathies, such as Carpal Tunnel Syndrome and peripheral polyneuropathy [2, 4, 5]. These situations often lead to mismanagement and contribute to persistent pain and extra suffering [4, 7]. Because the clinical findings in Rhomboid muscles

Myofascial pain syndrome are pathognomonic, clinicians are expected to be able to make the diagnosis clinically in order to carry out effective management. This research serve to create awareness about the existence of the condition and to emphasize the relative ease of making the correct diagnosis, which can lead to successful treatments.

Most patients who present with neck pain have “non-specific (simple) neck pain,” where symptoms have a postural or mechanical basis. Aetiological factors are poorly understood and are usually multifactorial, including poor posture, anxiety, depression, neck strain, and sporting or occupational activities.

What is a rhomboid muscle strain or spasm?

The rhomboid muscles are in your upper back, connecting the inner edges of your shoulder blades to your spine. A strain is an injury in which muscle fibers or tendons are stretched or torn. A muscle spasm is an involuntary contraction of the muscle.

How does it occur?

A rhomboid muscle strain or spasm is usually caused by overuse of your shoulder and arm, especially during overhead activities like serving a tennis ball or reaching to put objects on a high shelf. It can also occur from activities such as:

- rowing
- carrying a heavy backpack, especially over one shoulder
- poor posture, especially from prolonged use of a computer.
- Use of mobile phones in an awkward position with hands in outstretched position and lying down.

What are the symptoms?

- A rhomboid strain causes pain in your upper back between your shoulder blades and your spine. A spasm feels like a knot or tightness in the muscle.
- You may have pain when you move your shoulders
- Pain while you breathe.
- The Rhomboid muscle Trigger Points are typically reproducible during repeated digital compression with concomitant referred pain into the hand.

Gentle digital pressure over the Rhomboid muscle simply produce the 'jump sign' with referred pain to the hand generally radial side of forearm and hand.

How is it diagnosed?

The health care provider will examine your back and shoulder and will find that these muscles are tender or tight. The diagnosis of cervical spondylosis is usually based on clinical symptoms. Patients need detailed neurological assessment of upper and lower limbs as cervical degeneration is often asymptomatic, but can lead to pain, myelopathy, or radiculopathy. "Red flag" symptoms identify the small number of patients who need magnetic resonance imaging, blood tests, and other investigations

Discussion

Cervical disc prolapse or cervical stenosis is often the primary concern when making a clinical diagnosis for a patient with neck pain and radiculopathy. Although TOS (including Rhomboids muscle disorder) is an established clinical entity, Rhomboids muscle MPS is seldom included in the differential when making the diagnosis. Muscle pain in the neck, shoulder and arm caused by MPS often resembles cervical radiculopathy. The types of MPS that resemble cervical radiculopathy are those caused by MPS of pectoralis minor, Rhomboids muscle and serratus anterior, which need to be ruled out individually when assessing patients with symptoms of neck pain and "cervical radiculopathy" [4, 5]. For instance, MPS of the pectoralis minor causes neck and shoulder pain, which may radiate along the arm, simulating C7, C8 radiculopathy. Arm abduction often may add a neurovascular syndrome to pain due to the compression of the axillary artery and brachial plexus close to its insertion at the coracoid process. Serratus anterior usually causes pain in the chest under the axilla and sometimes causes dyspnea, especially during deep breathing. The pain may radiate down to the ulnar part of the arm, simulating C7, C8 radiculopathy [1, 5].

MPS of Rhomboids usually presents with unilateral neck and shoulder pain associated with typical referred pain in the radial distribution of the affected arm/hand, simulating T1 radicular pain. When the referred pain is due to MPS of the Rhomboids muscle, the referred pain and numbness can be due to brachial plexus irritation as a result of direct compression between Rhomboids muscle. This phenomenon justifies the established fact that MPS of the Rhomboids muscle is one of the causes of TOS. Therefore, it is prudent for clinicians to be able to distinguish the cause of "cervical radiculopathy", whether it is purely from MPS of the Rhomboids muscle (compression syndrome) or from a genuine cervical disc prolapse with nerve root impingement. In other words, one should be able to precisely differentiate whether the pain is 'radicular' or 'muscular' in origin or both [3, 4].

The aetiology of MPS of the Rhomboids muscle can be primary or secondary to other medical problems known as precipitating and perpetuating factors. Chronic muscle overuse, poor posture and repetitive microtrauma are the leading causes for the primary aetiology of this condition [1, 6]. This is clearly seen in case two, as the patient's desk job resulted in prolonged time at her work station, which resulted in the overuse of certain groups of muscles leading to MPS of the supraspinatus, upper trapezius and scalene muscles. Secondary MPS of Rhomboids muscle is known to be associated with other medical problems such as osteoarthritis, trauma, complex regional pain syndrome (CRPS) and various systemic medical illnesses [1, 5]. It is not uncommon for Rhomboids muscle MPS to present as secondary to cervical spine diseases, such as cervical stenosis, disc prolapse, facet joint arthritis and post whiplash injury [1, 5]. In an extreme situation, the "radiculopathy" symptom can be a result either of secondary MPS of the Rhomboids muscle or from the coexisting cervical disc prolapse with nerve root impingement. In this situation, one should be able to find the main pain generator that gives rise to the cervical "radiculopathy". Is it MPS of the Rhomboids muscle or cervical disc prolapse with nerve root impingement that is giving rise to the symptom of cervical radiculopathy?

As MPS of the Rhomboids muscle mimics cervical disc prolapse, the actual diagnosis of neck pain with radiculopathy can be misleading. After all, cervical disc prolapse/stenosis is often the more sought-after diagnosis. In addition, abnormal imaging findings are frequently found among asymptomatic individuals and may not necessarily be the cause of the pain [8]. As a result, patients may be subjected to unnecessary surgery if the pain persists following conservative therapy failure [7]. Therefore, it is prudent to identify and rule-in other possible causes of neck pain with 'radiculopathy' instead of ruling out cervical disc prolapse/stenosis as the first provisional diagnosis. With regard to this issue, TOS, including myofascial pain syndrome around the neck and shoulder, is the most sensible differential diagnosis to be entertained [2, 3].

Clinical diagnosis and management of MPS of Rhomboids Muscle

Diagnosis of MPS of Rhomboids muscle is often considered after diagnosis of cervical disc prolapse has been ruled out. Diagnosis of cervical disc prolapse is often made from the typical history of neck pain that is made worse on neck flexion associated with cervical radiculopathy. This finding should be supported with a positive Spurling's test during physical examination, in addition to significant evidence from MRI findings [10]. Once cervical disc prolapse is excluded, diagnosis of TOS-origin neck pain (including scalene) can then be evaluated.

The Elevated Arm Stress Test is a sensitive screening test in TOS and, if positive, is suggestive for TOS in origin. The test is done by asking the patient to elevate his/her arm with a flexed elbow to shoulder level for three minutes. This test is considered positive if the patient complains of an uncomfortable feeling, including pain and paraesthesia along the arm after less than three minutes [9]. In order to determine if the scalene muscle is responsible, the above test should be followed by the Scalene Cramp Test and the Scalene Relief Test, which are pathognomonic for scalene MPS. A positive Scalene Cramp Test is appreciated when neck pain and radiculopathy are aggravated

by placing the patient's chin over the ipsilateral supraclavicular groove for 60 seconds. Neck pain with radiculopathy or a tingling sensation on the lateral aspect of the hand is expected to be reproducible, as the anterior scalene muscle being compressed irritates the brachial plexus [9]. This pain can be inhibited by performing the Scalene Relief Test, wherein the clinician asks the patient to bring his or her forearm up to the forehead and to rotate the shoulder forward on the symptomatic side. The cessation of pain and tingling sensation experienced during this manoeuvre is perceived as a positive Scalene Relief Test [9]. The MPS of Rhomboids muscle is by Manual palpation over the Rhomboid Muscle wherein the positive 'jump sign' will be elicited and the tingling might be present in the arm which is on the side of the same Rhomboids muscle. There will be local tenderness and sometimes an band of tight fascia can also be palpated in the same area depicting MPS of Rhomboids muscle.

The principal management of MPS is performed by trigger point elimination, which corrects the perpetuating factors. Eradication of trigger points can be performed in combination with trigger point injection, stretching exercises, massage, deep heat therapy and oral medications [1,5]. Active stretching exercises are the most fundamental of all, as they allow patients to be independent and to actively participate in the long-term management of their chronic pain [1]. Pharmacologic treatment of patients with chronic musculoskeletal pain includes analgesia and medications to induce sleep and to relax the muscles. Antidepressants, narcotic analgesics, neuroleptics and non-steroidal anti-inflammatory agents are often prescribed for these patients [1,5]. Predisposing and perpetuating factors in chronic overuse or stress injuries of the muscles must be eliminated as they will increase the efficacy of other modalities and speed the process of recovery. Known perpetuating factors include biochemical, mechanical, metabolic, physiological, psychological and infectious factors. Such an evaluation is strongly indicated if appropriate treatment provides little or no pain relief from MPS. In primary MPS, correction of posture, an ergonomic human-machine system and structural realignment are of paramount importance in order for the positive effects to last beyond the treatment [1,5].

Conclusion

Myofascial pain syndrome of the Rhomboids muscle may present with neck pain and cervical radiculopathy, which has been frequently underdiagnosed. A lack of awareness among physicians may lead to misdiagnosis and thus to inappropriate management.

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