Diagnosis of Myofascial Pain Syndrome

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KEYWORDS

• Myofascial pain • Trigger points • Active trigger points • Latent trigger points • Muscle • Referred pain • Diagnosis

KEY POINTS

- Myofascial pain is a common condition that occurs as a primary source of pain as well as a comorbid pain with other conditions.
- The source of pain in myofascial pain is the myofascial trigger point that is a small region of hardness and tenderness in a taut band of muscle.
- Many of the pain syndromes are caused by pain referred from the trigger point region.
- The diagnosis of myofascial pain in the clinical setting is best made by palpation of the trigger point, moving in a cross-fiber direction perpendicular to the direction of the fibers.
- Evaluation of the patient must include an assessment of those factors that either predispose the patient to the development of myofascial pain or that are comorbid with it.

INTRODUCTION

Myofascial pain (MP) is a widespread and universal cause of soft tissue pain. Physicians commonly overlook this condition because of lack of awareness and training but it is a relatively simple diagnosis. The central feature of MP syndrome (MPS) is the myofascial trigger point (MTrP), a very small, localized area of muscle contraction that is hard to the touch, and that is very tender. The trigger point is always located on a discrete band of hardness located within a muscle. The diagnosis of MPS is made by palpation of the MTrP.

FEATURES OF THE MTRP

The MTrP is always located on a tight or taut band of muscle. An MTrP that causes pain is always tender to palpation. When stimulated mechanically by palpation or by

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needling, it contracts sharply, referred to as local twitch response (LTR). The taut band limits stretch of a muscle and produces weakness that is rapidly reversed as the trigger point is inactivated. It can activate autonomic activity, such as vasodilation or constriction, goose bumps, or piloerection (**Box 1**).

The MTrP, like other physical sources of chronic pain, refers pain to distant sites and leads to central nervous system sensitization. Central sensitization results in a lower pain threshold and in tenderness, and in an expansion of painful areas, including an increase in MTrPs. MTrPs can be spontaneously painful (so-called "active" MTrPs) or they can be nascent or quiescent (so-called "latent" MTrPs), inactive until physical activity converts them to active MTrPs.

Diagnosis

The diagnosis of MPS is based on a pertinent history and physical examination. Objective means of identifying the MTrP exist, but are generally not used in clinical practice because they are costly, time-consuming, and are not available to most practitioners. Now that high-definition ultrasound (HDUS) is more widely available, there is interest in using it to guide the practitioner in performing injection or deep dry needling of difficult muscles using HDUS guidance.[1] The experienced hand is faster and quite adequate at identifying the site to be needled.

History

MP can be acute pain or chronic muscle pain. The nature of the pain in both cases is dull, deep, aching, and poorly localized. It is rarely sharp and stabbing, although acute episodes of stabbing pain can occur, even on a background of chronic pain. It mimics radicular or visceral pain. Somatic pain from trigger points in the abdomen, for example, can feel like irritable bowel, bladder pain, or endometrial pain. Trigger points in the gluteus minimus muscle refer pain down the side and back of the leg, like L5 or S1 radicular pain. It can be accompanied by a sensory component of paresthesias or dyesthesias but does not present in this manner. Paresthesias, such as tingling, when present, are generally distributed in the dermatome of the nerve root(s) innervating the muscle harboring the relevant trigger point. Pain is often experienced as referred to other regions, such as the head, the neck, or the hip, as referred pain (RP). MP can also be the presenting symptom for radiculopathy, or major joint pain (shoulder or hip). MPS persists long after the initiating cause of pain has resolved. Hence, the story of a remote injury can be relevant.

Box 1
Features of the myofascial trigger point: the first 3 are essential for diagnosis; the last 5 are not required to make a diagnosis

1. Taut band within the muscle
2. Exquisite tenderness at a point on the taut band
3. Reproduction of the patient's pain
4. Local twitch response
5. Referred pain
6. Weakness
7. Restricted range of motion
8. Autonomic signs (skin warmth or erythema, tearing, piloerection [goose-bumps])