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## Scalene Trigger Points: The Great Imitators

*By Donald Murphy*

Accurate diagnosis in the area of neuromusculoskeletal disorders can many times be a tricky job. Most of the time when a patient presents with a certain set of symptoms, there may be several different possible causes. The challenge to the chiropractic physician is to be able, from the case history, physical examination, lab tests, and imaging studies, to sift through the plethora of potential initiators of the patient's pain or discomfort. In medicine and in chiropractic there are a great many common disorders that get overlooked because they mimic other well-known but oftentimes less common problems. These "imitators" are very frequently located in the myofascial system. In a past article, I wrote about one area in which this is seen, that of somatic disorders which mimic visceral disease.<sup>1</sup>

Those muscles which have trigger point referred pain patterns that are elaborate and cover a large area of the body, and those muscles which commonly have autonomic phenomena associated with them are especially good imitators of other health problems. One of these is the scalene group. This is a set of muscles in the anterior cervical spine, the function of which is quite complex and, likewise, can create quite a complex clinical picture when they develop myofascial trigger points which become symptomatic.

The function of the scalenes, when acting unilaterally, is to laterally flex the neck to the same side, rotate to the opposite side, and flex the cervical spine on the thoracic spine in an oblique direction. Acting bilaterally, they extend the cervical spine onto itself and flex the cervical spine on the thoracic spine.<sup>2</sup> Their bilateral function is analogous to that of the psoas in the lower half of the body.<sup>3</sup> The scalenes also function as auxiliary respiratory muscles, becoming activated during exercise when an increase in the capacity of the thoracic cavity is required to allow a greater volume of air to be inhaled into the lungs in order to meet increased demands for oxygen.<sup>2</sup>

When the scalenes develop trigger points (TPs) they can cause pain to refer into the chest, to the medial border of the scapula, into the shoulder, down the posterior and lateral sides of the arm to the thumb and index finger. Because the brachial plexus and the subclavian artery pass between the anterior and medial scalenes and the subclavian vein passes anterior to the anterior scalene,<sup>4</sup> when these muscles shorten as a result of TP development, they can compress or irritate these structures and cause symptoms such as paresthesia, anesthesia, coldness, claudication, and lymphedema in the involved extremity.<sup>4</sup> This is a very common cause of thoracic outlet syndrome.<sup>5</sup> Many patients also complain of "numbness" in their hand even in the absence of neurological deficit. The patient will describe the feeling of their hand "going numb" and this numbness can many times be reproduced by palpating the involved TP and can be resolved with adequate treatment. I have seen several patients complaining of this numbness who have been told that they were hysterical or would just have to live with it. I even had one patient recently who was told that she had "carpal tunnel syndrome" and needed to be operated on, even though she had absolutely no signs of neurological deficit on examination, and the symptoms did not follow a median distribution.

Vascular symptoms are less common but at times can be quite severe. I have seen cases that ranged from mild coldness to severe lymphedema. The majority of cases, however, do not exhibit neurological or vascular deficit. More commonly, one will detect hyperesthesia in the involved extremity, much like that commonly seen in subluxation-induced fascilitation,<sup>6</sup> wherein hyperesthesia is found in the specific dermatome that corresponds to the level of spinal joint dysfunction, except that the hyperesthesia

created by the scalene trigger points is more widespread, covering several dermatomes.

As with many myofascial pain syndromes, it is important in the scalene syndrome patient to look for faulty movement patterns. The most important pattern to look at is that of breathing. Normally, the scalene muscles are silent during resting respiration, and only come into play during heavy exertion, in order to further increase the volume of the thoracic cavity. In a faulty breathing pattern, however, the scalenes (along with the upper trapezius, levator scapulae, SCMs, and pec minor) become primary breathing muscles and are active with each inspiration.<sup>7</sup> This stresses the muscles to the point where they develop trigger points. Correcting this pattern is essential to proper rehabilitation of these patients.

It can be seen that when a physician who is not properly trained in the diagnosis of dysfunction of the locomotor system encounters the patient with a scalene myofascial pain syndrome, it is easy to confuse the clinical presentation with that of cervical disc herniation, thoracic outlet syndrome, carpal tunnel syndrome, peripheral neuropathy, subclavian venous thrombosis or subclavian atherosclerotic disease, all of which are relatively uncommon in comparison. Of course, these disorders must be ruled out before a definitive diagnosis can be made. It is our job as chiropractic physicians to not only be able to diagnose and treat this problem, but also to educate the public and the health care community that we are the best equipped to handle it.

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*Donald R. Murphy, D.C.*  
*Westerly, Rhode Island*



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