

What Your Cardiologist Should Know About FMS and CMP by Devin Starlanyl

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Please read "What Everyone on Your Health Care Team Should Know About FMS and CMP".

There are many symptoms that can lead the person with fibromyalgia syndrome (FMS) and/or chronic myofascial pain (CMP) to your office. Research is pointing to FMS as a sympathetically-maintained disorder of pain processing (Martinez-Lavin, Vidal, Barbosa et al. 2002) and a form of dysautonomia (Raj, Brouillard, Simpson et al 2000). Chronic myofascial pain can mimic or accompany cardiovascular disease (Simons, Travell and Simons 1999). You need to be familiar with the myofascial trigger points (TrPs). Both FMS and CMP work together to create a symptom load greater than the sum of the two and may present a picture perplexing to the diagnostician.

Research indicates that fibromyalgia may increase the risk of cardiovascular disease (Curtis, O'Keefe Jr 2002). Intracellular calcium concentrations may be significantly reduced in fibromyalgia patients (Magaldi, Moltoni, Biasi et al 2000), and we don't yet know how this may interrelate with the excess calcium release at the motor endplates in the area of myofascial TrPs (Simons, Travell and Simons, 1999). Research has shown an abnormal autonomic response to orthostatic stress in men with FMS (Cohen, Neumann, Alhosshle et al. 2001). Nail ridges or beads, fragile nails and clubbing (beaking) of nails are common in FMS. This may be associated with chronic lack of oxygen due to TrPs in the respiratory muscles, neurotransmitter or endocrine dysfunction of FMS, or weakened respiratory muscle strength due to FMS (Ogzocmen, Cimen, Ardicoglu 2002).

The dysregulation of neurotransmitters in FMS can lead to a drop in hemoglobin oxygenation during sleep (Alvarez Lario, Alonso Valdivieso, Alegre Lopez, et al. 1996). Constricted bronchi caused by neurotransmitter dysregulation may contribute. In FMS, neurotransmitter dysfunction often has a direct impact on the cardiovascular system. Research has shown that chronic dyspnea not due to cardiac or pulmonary causes is common in people with chronic primary FMS (Caidahl, Lurie, Bake, et al. 1989).

Neurally mediated hypotension is often a frightening and potentially dangerous companion to FMS (Bou-Holaigah, Calkins, Flynn, et al. 1997; Clauw 1995). There is also an increase in mitral valve prolapse (Pellegrino, Van Fossen, Gordon, et al. 1989). Expect dyspnea (Weiss, Kreck and Albert 1998; Caidahl, Lurie, Bake, et al. 1989). The combination of these and other symptoms can be frightening and add to your patient's stress. Check everything out, but reassure your patient that

these can co-exist with FMS. You may want to prepare a handout with a list of warning signs that should be reported. Treating the co-existing myofascial TrPs may save you many needless calls and save your patients unnecessary trips to the ER.

Shortness of breath is often due to TrPs in the serratus anterior muscle and is commonly associated with a "stitch in the side". There is referred pain to the side and to the back of the chest. This includes the lower interior border of the shoulder blade, and sometimes runs down the inner area of the arm, hand, and the last two fingers. There may be air hunger, with panting or mouth breathing. In severe cases, there is chest pain even at rest. The nerve going to the serratus anterior muscle may be entrapped because of scalene muscle TrPs. This TrP can also contribute substantially to the pain of a heart attack (Simons, Travell and Simons 1999). It can also cause a catch in the lower inner side of the shoulder blade. Serratus posterior inferior TrPs produce an unusual ache radiating over and around the muscle. Iliocostalis thoracis TrPs at mid-chest level send pain upward toward the shoulder as well as sideways toward the chest wall. Trigger points on the left side in this area cause pain that is often mistaken for angina.

Restricted chest expansion causes less air to be taken into the lungs. Researchers report that maximum expiratory and inspiratory pressures are low in chronic primary FMS, which may indicate respiratory muscle dysfunction (Lurie, Caidahl, Johansson et al. 1990). Levator scapulae TrPs can also cause shortness of breath (Neoh 1995). If your patient has a stiff neck as well, look for these TrPs.

If the tissues surrounding the carotid sinuses harbor TrPs, their ability to control the blood pressure by constricting and dilating the blood vessels could be affected. Neurotransmitter imbalances of FMS may also be a part of fluctuating blood pressure. Chronic pain itself can affect blood pressure (Nilsson, Kandell-Collen, Andersson, 1997), and it is vital that this symptom be kept under control. Metabolic Syndrome is a frequent perpetuating factor of both FMS and CMP, so monitor your patient's cholesterol levels, abdominal obesity and possible insulin resistance. TrPs can cause entrapment of blood and lymph vessels. This can cause swelling and can affect the blood pressure. High blood pressure can also aggravate scalene TrPs, causing a mutual aggravation spiral.

All major scalene muscles can refer pain to the front and back of the body in a widespread pattern. In the front they cause persistent aching pain over the chest and down the front and back of the arm to the forearm. The patient may tell you that the chest feels tight. On the left side, this pain may be mistaken for angina. Shallow pain also can be referred to the inner-upper border of the shoulder blade. There may be signs showing obstruction of veins and arteries and compression of the motor and sensory nerves of the arm. Sleep is often disturbed by pain from these TrPs. Your patient may have to sleep sitting up or propped up on pillows. There may be numbness, tingling, and odd sensations in the fourth and fifth fingers and in the little finger side of the hand and forearm.

Intercostal TrPs cause aching pain primarily locally. Palpate for these TrPs around the ribs. They are most often located on the front of the body, close to the side. Your patient may not be able to endure pressure on these TrPs. The pain increases when s/he takes a deep breath, coughs or sneezes. In the area near the breastbone, these TrPs may cause cardiac arrhythmia (Simons, Travell and Simons, 1999, p 875).

Diaphragm TrPs refer pain in two different directions, using two different neural pathways. One sends pain to the upper border of the shoulder on the same side as the TrP, from TrPs in the diaphragm dome. TrPs along the edges send pain to the edges of the ribs close by. Diaphragm TrPs can cause the "stitch in the side", chest pain, or inability to get a full breath. The pain will be most intense on exhalation after a deep breath. These TrPs cause restricted rotation of the spine upon twisting to look behind. Chronic cough, paradoxical breathing will perpetuate these TrPs, as will head-forward, slumped-shouldered posture. Local impact trauma, chest surgery (chest retractors are likely to leave clusters of TrPs in their wake), herpes zoster, rib fractures are also possible initiating and perpetuating factors, as are tumors, and some repetitive exercises.

There may be a TrP on the right side pectoralis major between the 5th and 6th ribs about midway between the nipple and the outer edge of the sternum that can be involved with cardiac arrhythmias. Treating the TrP may eliminate the arrhythmia. Pectoralis major TrPs cause pain under the sternum. They also can transmit pain to the front of the chest and breast, extending down to the little finger side of the arm to the fourth and fifth fingers. TrPs on the left side often mimic heart-attack pain.

Pectoralis TrPs can occur in any of the muscle layers, in any place, but they are most common in particular areas. In the area of the collarbone, they cause local pain and refer pain over the front of the shoulder. In the breastbone area, TrPs can broadcast intermittent, intense pain to the front of the chest and down the inner aspect of the arm. This can include a feeling of chest tightness, often mistaken for angina. These TrPs can radiate pain to the inside top of the forearm, as well as to the little finger side of the hand, including the last two or more fingers. If you find arrhythmias and no other sign of heart problems, check for TrPs. Chest pain that persists after a heart attack is frequently caused by these TrPs.

Pectoralis minor TrPs are located most often in an area about midway between the clavicle and nipple, and about midway between the edge of the breastbone and the outer edge of the upper arm. These TrPs send pain over the front of the chest and shoulder. Pain may run down the inner side of the arm and include the last 3 fingers. Pain from a left side pectoralis minor TrP can mimic angina. These TrPs can also entrap the axillary artery, as well as the brachial plexus nerve. The radial pulse may disappear as your patient moves the arm to different positions (Simons, Travell and Simons, 1999, p 851). When you relieve the TrP, the pulse is restored.

Many cases of Raynaud's phenomenon have a TrP component. Numbness and odd sensations of the 4th and 5th fingers are common with these TrPs. There may be peculiar sensations over some parts of the forearm and over the palmar side of the first three and a half fingers. Paradoxical breathing perpetuates this TrP, as does poor posture. Check standing and sitting movements, and ask about sleep positions. Blood vessel entrapment by these TrPs does not produce the hand puffiness associated with scalene entrapment. Connective tissue TrPs in scar tissue of the attachment area in some rotator cuff tissues may cause referred tenderness, hot prickling pain, and lightning-like jabs to the pectoralis area.

Ensure that the bodyworkers to whom you refer patients have a firm knowledge of Travell and Simons' Trigger Point Manuals. Repetitious exercises are contraindicated in myofascial TrP therapy. You cannot strengthen a muscle that harbors a TrP. Many physical therapists do not understand this. Inappropriate therapy is a preventable perpetuating factor. Contraction of pectoralis muscles may pull down the SCM muscle group and work to perpetuate TrPs there. Forward rotated shoulders are a sign of this combination at work. If involved, the pectoralis TrPs must be treated before the SCM TrPs can be successfully treated. Chest tightness may also be due to TrPs in the sternalis muscle.

Sternalis TrPs cause a deep ache under the breastbone, extending over the entire region of the breastbone and below. This can cover the upper chest and front of the shoulder on the same side, including the underarm and upper arm on the little finger side to the elbow. This produces an ache that feels like a heart attack or angina and is independent of body movement. Trigger points can occur anywhere within the sternalis, but they are often found in the upper two-thirds and to the left of center at mid-sternal level.

TrPs in the jaw and neck can contribute referred chest pain (Rusiecki 1998). Overburdening these muscles can cause TrPs. These TrPs can be formed during a heart attack or other visceral disease. When coronary artery disease and TrPs coexist, remember myofascial constriction from the TrPs can cause (treatable) further narrowing of the arteries. If your patient has angina or has had a heart attack, s/he probably has these TrPs, as these events can be initiating factors. Treating the TrPs may reduce the symptom level.

If these or any TrPs keep recurring, in spite of proper treatment, you must find the perpetuating factor. That could be a visceral problem, for example. Such organic disease can cause TrPs. Relieving the TrPs may relieve the symptoms for a short period of time, but the underlying problem will still be there.

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