



Excerpts:

According to Jan Dommerholt, PT, MPS, FAAPM, the shortage of research on and knowledge of myofascial pain has its origins in the fact that no medical specialty has ever officially adopted muscle as its focus. That same lack of clarity has led to a dearth of clinicians with the training needed to properly diagnose and treat myofascial pain, says Dommerholt, who is president of Bethesda Physiocare and Myopain Seminars, and an avid proponent of the dry needling method of myofascial pain treatment — a form of mechanical myofascial release that involves inserting fine acupuncture needles directly into myofascial trigger points to reduce abnormal muscle contractures, reduce pain, and restore function and range of motion.

"[Diagnosis and treatment techniques] are very well developed by those who do it, but it's not part of mainstream medicine, partly because no specialty teaches it. And if it's not taught in schools, no one knows about it," he says.

According to Dommerholt, development among physical therapists of the ability to identify and target those areas of exquisite tenderness in taut bands of muscle would open a new universe of possibilities in the treatment of chronic pain. "From my perspective, trigger points are a part of every pain syndrome. There is not a single musculoskeletal syndrome where they are not in the picture," he says, citing an article published in the March issue of *Cephalalgia* by researchers in Madrid, Spain, that proposes a new headache model that recognizes myofascial trigger points in the neck and shoulder muscles as the primary cause of chronic tension-type headache.

Still, Dommerholt contends, resistance among many clinicians to these possibilities remains strong. "When I lecture about trigger points to physical therapists, they look at me like I must be out of my mind. But if you don't look for trigger points you won't find them, and you won't recognize that people may have myofascial pain," he says.

He cites tennis elbow as an example: "Most physical therapists go directly to treating the elbow. But if it doesn't go away, they need to look at what else could be causing the pain. Most of the shoulder muscles refer pain down the arm. If you don't look for that, you can treat it until the cows come home and it will never go away."

Sports & Orthopedics



Pressing Need

Flatten myofascial pain syndrome with manual therapy

By Susan Birk

Considering the several million people in the U.S. who are affected by myofascial pain syndrome (MFPS), one might think there would be a fair number of treatment options. However, the fascia and its treatment continue to be something of a mystery to pain experts, healthcare professionals, and some physical therapists.

Problems involving the intricate layers of connective tissue that covers, connects, and separates the muscles, organs, and other soft tissue body structures constitute a major source of acute and chronic pain for those with this condition. Yet, the criteria for diagnosis of MFPS remains controversial: pain experts report that healthcare professionals, physical therapists included, have far to go in understanding MFPS.

Chronic data shortage

In a review of research on MFPS and fibromyalgia published in the January 2007 issue of the *American Journal of Physical Medicine & Rehabilitation*, R. Norman Harden, MD, director of the Center for Pain Studies at the Rehabilitation Institute of Chicago (RIC), says: "The research base is growing and improving in quality, yet there is considerable room for improvement."

April M. Fetzter, DO, agrees that new and interesting research on myofascial pain is scarce. "All we know basically is what Travell and Simons have done on it; there aren't a lot of studies," says Fetzter, an assistant professor in the departments of orthopedics and physical medicine and rehabilitation at Rush University Hospital in Chicago. (Janet G. Travell, MD, and David G. Simons, MD, co-authored Volume 1 of *Myofascial Pain & Dysfunction: The Trigger Point Manual*. The book and its second volume are still considered benchmarks in the field.)

Timothy J. Madson, PT, MS, a therapist in the department of physical medicine and rehabilitation at Mayo Clinic in Rochester, Minn., says though there are accepted definitions of what constitutes a clinical presentation of myofascial pain, the lack of a clear definition makes valid research difficult. "Myofascial pain and other syndromes such as fibromyalgia have for a long time been dumping ground terms for every soft tissue disorder where another diagnosis can't be put on it," he says. "It's extremely hard to find large populations of patients with the same clinical presentation. You'll be mixing some that have pelvic girdle pain with some that have shoulder girdle pain, so you won't be comparing apples to apples." As a result, he notes, the amount of illuminating research on MFPS is limited. "You may find some case studies of three or four patients who responded to a certain intervention, but it's not something you want to hang your hat on. There's no gold standard."

Trained practitioners wanted

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fact that no medical specialty has ever officially adopted muscle as its focus. That same lack of clarity has led to a dearth of clinicians with the training needed to properly diagnose and treat myofascial pain, says Dommerholt, who is president of Bethesda Physiocare and Myopain Seminars, and an avid proponent of the dry needling method of myofascial pain treatment — a form of mechanical myofascial release that involves inserting fine acupuncture needles directly into myofascial trigger points to reduce abnormal muscle contractures, reduce pain, and restore function and range of motion.

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Dommerholt says that fewer than 100 physical therapists in the U.S. are trained in dry needling, and that only eight states currently allow physical therapists to practice the technique. By contrast, dry needling has found widespread acceptance in Europe and elsewhere in the world. Dommerholt claims that 3,000 physical therapists in Spain and 8,000 of South Africa's 9,000 physical therapists use the method routinely.

Part of the reason dry needling in particular, and myofascial pain diagnosis and treatment methods in general, aren't widely taught in this country has to do with some fundamental misconceptions that have shaped the way clinicians are educated, says Robert D. Gerwin, MD, FAAN, attending physician at the Johns Hopkins Pain Treatment Center and medical director and president of Pain Medicine and Rehabilitation, a pain management center in Bethesda, Md.

Trigger points and taut bands

The currently accepted method of diagnosing MFPS requires the identification of active trigger points, areas of "exquisitely" tender skeletal muscle in taut bands of tissue. For a diagnosis of myofascial pain, the manual compression of these trigger points must also be accompanied by patterns of referred pain, although the mechanism of referred pain wasn't well accepted in the medical world until the 1990s, Gerwin says.

"People didn't understand why you could press a sore spot in the shoulder and get a headache," says Gerwin, who is the co-author of *Clinical Mastery in the Treatment of Myofascial Pain*, a textbook that draws on expertise from the fields of medicine, physical therapy, chiropractic, and osteopathy. Others have been held back by the fact that there is no objective test for myofascial pain. "You can't find it on x-ray or through laboratory testing," he adds.

The biochemistry of pain

Pain experts agree that some of the most interesting work on myofascial pain is being done by Jay P. Shah, MD and his colleagues at the National Institutes of Health. Shah's study of nine subjects using an innovative in-vivo microanalytic technique to collect continuous samples from muscle indicates that there may be a distinct difference in the biochemical composition of normal, latent, and active trigger points. The active trigger points contained significantly higher levels of eight different chemicals linked with pain, including serotonin and norepinephrine, and had a more acidic pH. (*Journal of Applied Physiology*, July 21, 2005).

Perhaps the largest barrier, according to Gerwin, has been the lack of training in muscle palpation among clinicians. "In order to identify trigger points, the examining clinician, whether physician, physical therapist, or chiropractor, has to have some degree of skill in this area," he says. But for years, some healthcare professionals viewed trigger point identification as an esoteric ability that was beyond many clinicians' reach or interest.

Contrary to common belief, trigger point identification is not actually that difficult, Gerwin states. "It takes about a day to learn, two days to learn well and a few months to become very good at. What you're looking for is simply a discrete band of hardened muscle tissue. A lot of people can't identify that at first because their fingers aren't sensitive to it." Once they get over the initial hump, he says, the technique is relatively easy to master.

According to Dommerholt, development among physical therapists of the ability to identify and target those areas of exquisite tenderness in taut bands of muscle would open a new universe of possibilities in the treatment of chronic pain. "From my perspective, trigger points are a part of every pain syndrome. There is not a single musculoskeletal syndrome where they are not in the picture," he says, citing an article published in the March issue of *Cephalalgia* by researchers in Madrid, Spain, that proposes a new headache model that recognizes myofascial trigger points in the neck and shoulder muscles as the primary cause of chronic tension-type headache.

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Another viewpoint

Not all pain experts share the same level of certainty about trigger points. "Trigger point injections with either local anesthetic alone or with steroids are traditional treatments for MFPS, interestingly without much evidence on which to base that legend," Harden, of the RIC, writes in his research review.

He argues that "there are specificity problems in basing the diagnosis exclusively on the presence of trigger points; it can be difficult to distinguish between [MFPS] and pain due to other conditions, and it may be particularly difficult to differentiate between trigger points and the 'tender points' of FM [fibromyalgia]."

According to Harden, assumptions among many pain professionals about the value of trigger points represent a "passive acceptance of traditional, vague diagnostic schemes with no evidence base to support them." This acceptance, he claims, blurs the more important issue — namely, the need for pain specialists to develop diagnostic criteria for myofascial pain that have been internally and externally validated.

Perhaps trigger points are a valid diagnostic criterion for myofascial pain, but perhaps they are not, and until pain specialists answer that essential question, myofascial pain research, diagnosis, and treatment will not progress in any meaningful way, he says.

"We're sort of stuck in first gear in terms of understanding the pathophysiology of myofascial pain and are waiting for a breakthrough to give us a gold standard test for diagnostic purposes," Harden explains. "A 'user-friendly' diagnostic test would be better than diagnostic criteria, but in the absence of that we have to have diagnostic criteria. Currently, in order to make the diagnosis you have to have trigger points. If you don't have trigger points, you don't have myofascial pain. That's a very limited view," he asserts.

Resources

"Muscle pain syndromes," R. Norman Harden, MD, American Journal of Physical Medicine & Rehabilitation, January 2007

"A review of myofascial pain and fibromyalgia — factors that promote their persistence," Acupuncture in Medicine; 23(3), 2005 (can be found at www.painpoints.com/)

"Myofascial trigger points: an evidence-informed review," The Journal of Manual & Manipulative Therapy, Vol. 14, No. 4, (2006) (can be found at www.bethesdaphysiocare.com)

Patient empowerment

Harden notes that the myofascial pain program at RIC stresses patient self-management over the use of passive techniques such as trigger point injections and acupuncture therapy. "To say we don't ever use those techniques would be wrong. We utilize them sometimes. However, philosophically, we like to emphasize active self-management techniques for patients as opposed to passive treatments," he says.

Those self-management techniques revolve around custom-tailored home exercise programs developed by the physical therapist. The regimens target postural, ergonomic, or other factors that produced the pain in the first place, with a focus on the balanced development of muscle strength, tone, and flexibility that does not work one set of muscles while neglecting others. "To achieve that balance in terms of muscle strength and tone is absolutely the purview of the physical therapist and is the pre-eminent treatment for myofascial pain," Harden says.

Other clinicians agree that physical therapy takes the lead in myofascial pain treatment. "As doctors we can prescribe anti-inflammatory medications or muscle relaxers, but the overall goal of rehabilitation is going to be attained in the physical therapy realm," Fetzter says. Gerwin agrees: "When I do trigger point needling, wet or dry, the goal is to facilitate physical therapy."