

The occasional trigger point injection

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Trigger points and myofascial pain are common diagnoses. They can occur in any patient, even in those not diagnosed with a chronic condition, such as fibromyalgia or recurrent myofascial pain syndromes. The underlying mechanism for the development of these discrete hyperirritable nodular areas of muscles, first described in 1949,[1] is unknown. The commonly acceptable pathological explanation includes an area of contracted muscle sarcomeres[2] and irritable muscle end plates.[3]

Clinicians find patients complaining of musculoskeletal pain that does not fit an accepted neurologic or orthopedic strain pattern. The trigger point will be painful to the touch and compression will illicit a local and referred pain that simulates the patient's discomfort.[1]

Needling therapies for pain relief have been used for thousands of years.[4] Chinese physicians performed dry needling in the seventh century AD. Acupuncture and dry needling did not become of major interest to Europeans until the 1800s.

Literature review

Although commonly encountered in clinical practice, the literature is scant on this subject. There is a distinction in the literature between tender points (associated with fibromyalgia), which are painful to soft touch, and trigger points, which require more pressure and are often an identified muscle knot.[5] Such a discussion is beyond the scope of this article. Since fibromyalgia patients often have both tender points (considered less responsive to injections) and trigger points, a trial of a trigger point injection may be beneficial.[2]

We searched Medline for myofascial pain syndromes, therapy and trigger point injections. Of the 152 articles we found, there were 3 systematic reviews and 15 somewhat controlled studies. Most were level III evidence. A 2000 Cochrane review[6] concluded that there was inadequate evidence for or against the use of trigger point injections for the management of low back pain.[6] We examined the literature beyond this review and found several small studies that compared which agents worked best for injections. However, they did not have enough power to comment on overall efficacy.[7–10]

Most studies use a variety of sterile water, lidocaine or bupivacaine, and there is no clearly superior substance. One author found equivalent results with dry needling when compared with local anesthetic.[11] Interestingly, a small crossover study of 10 patients did find that the benefits of successful trigger point injections were reversible with intravenous narcan, perhaps indicating a local or regional endorphin response to needling.[11]

The illustrated self-treatment guide by Davies and Davies, *The Trigger Point Therapy Workbook,* is an excellent resource to physicians and patients.[12] It is clearly written and describes how patients can identify and treat their own regional pain trigger points, often with application of pressure, e.g., leaning against a tennis ball over specific points. The classic, 2-volume, *Myofascial Pain and Dysfunction: The trigger point manual,* is a more extensive medical text on the subject.[13]

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Patient presentation

While fully developed fibromyalgia and chronic pain syndromes require interdisciplinary rehabilitation services, primary care physicians may often be faced with a patient with isolated or recurrent trigger points.

Typically, a patient will present with pain or paresthesia symptoms that do not fit an organic illness diagnostic pattern. Rather than feeling overwhelmed at the vast differential diagnosis, one should perform a simple search for trigger points, which very often results in positive findings. An appropriate examination is prudent to rule out serious pathology. This is followed by a simple trigger point injection, which may alleviate the vast majority of the patient's myofascial pain. A common response would be an 8 or 9 out of 10 pain reduction. The neck and shoulder are common sites of myofascial pain (Fig. 1 and Fig. 2).

If the trigger point is not found, the patient may leave with a long series of investigations in front of him or her, or with angst that some ominous process is brewing. It is remarkably common to have patients with the same problem say that they have seen many physicians over the years, that they have been through an extraordinary number of investigations and that they have often been prescribed protracted doses of narcotics. They are happy to leave the office pain-free with an exercise prescription in hand (or low dose amitriptyline at hs). A recurrence of symptoms requiring a repeat injection every 6–12 months is not uncommon. Once the diagnosis is made, a busy practitioner might refer a patient to a chiropractor, massage therapist or acupuncturist, etc., often with similarly good results.

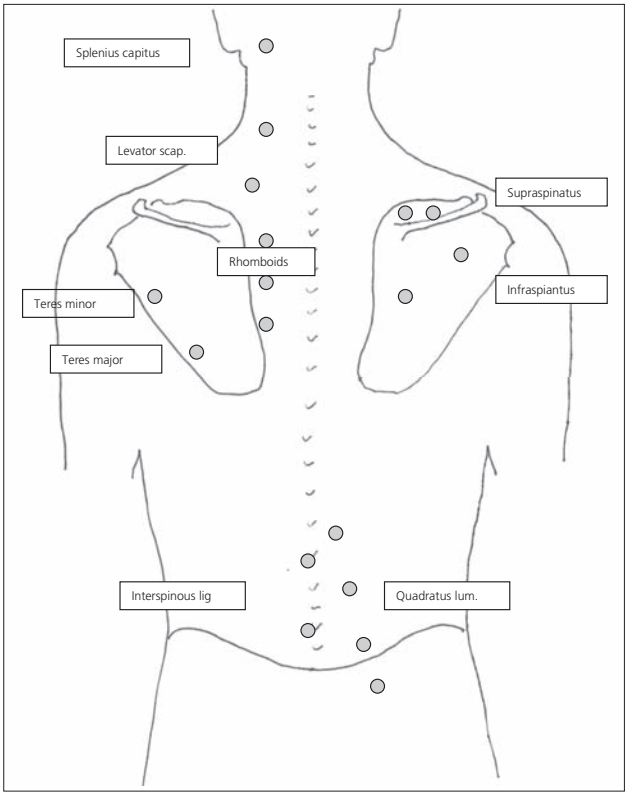


Fig. 1. The dots represent upper and lower back areas where trigger points commonly occur.

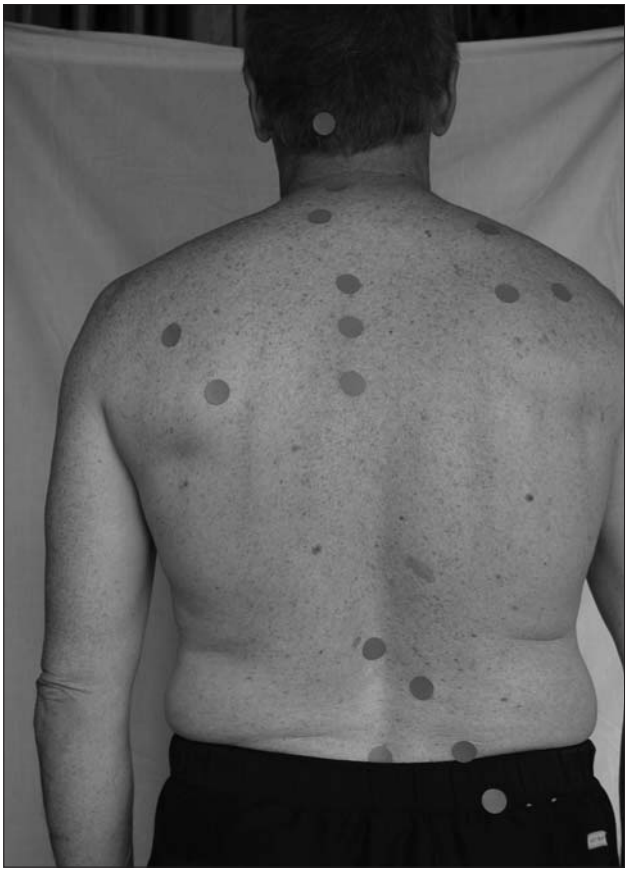


Fig. 2. The dots represent the same common trigger points that are shown in Figure 1 as they are identified clinically. The points are bilateral but, for clarity, are shown here unilaterally.

Procedure

The procedure is easy and only takes a few moments.

Step 1

In our experience 0.25% bupivacaine 1–2 mL per trigger point is appropriate. The long-acting nature of this agent will prevent the local soreness that some patients experience from the process. One percent or 2% lidocaine can also be used.

Step 2

The trigger point is localized with finger pressure —

it is often helpful to landmark the spot with the plastic needle cover to create a superficial "target" impression on the skin (Fig. 3, Fig. 4 and Fig. 5).



Fig. 3. The image shows how the trigger point is found, by gentle palpation and increased finger pressure, which causes a local and radiating reproduction of the pain that is consistent with the symptoms.

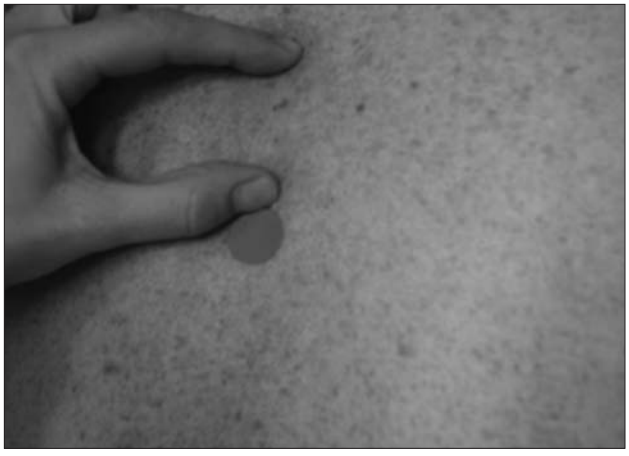


Fig. 4. The image shows how the skin is stretched between 2 fingers to lessen the pain of injection and immobilize the underlying muscle knot.

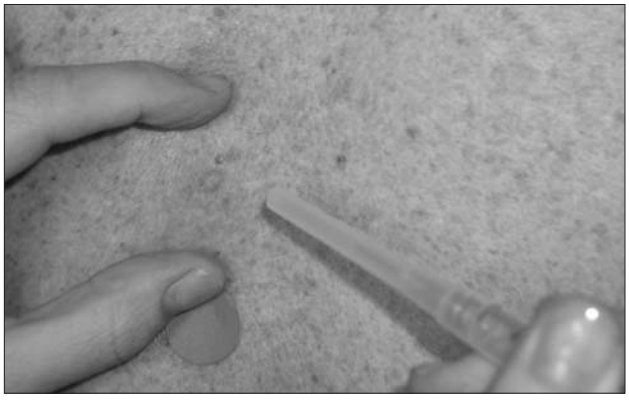


Fig. 5. The most tender spot is localized accurately using the needle cover and giving the patient choices until the sorest spot is identified and marked with pressure. This gives a "bullseye" to inject.

Step 3

After an alcohol swipe, the 25-gauge needle is inserted smoothly to the clinical depth; usually 1 cm into muscle or interspinous ligament (Fig. 6 and Fig. 7). The amount of overlying adipose tissue will determine total needle depth; the physician will feel the increase in resistance upon entering the muscle. At the moment of injection the patient will often identify an intense reproduction of their presenting symptoms and, importantly, in the same radiating pattern. This is a good sign and usually correlates with positive outcome.

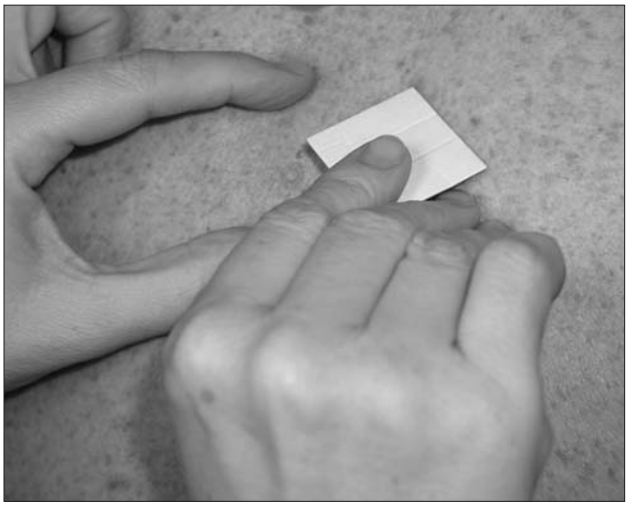


Fig. 6. The image shows how the technique in Figure 5 is followed by an alcohol swipe, using clean technique.

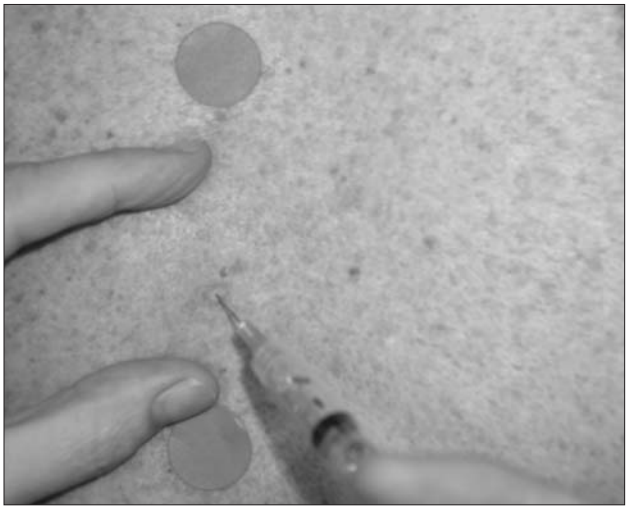


Fig. 7. The needle is uncovered and placed smartly through the skin, entering to an approximate muscle depth of 1 cm. The physician will eventually develop a feel for when he or she is entering the affected muscle. The injection is made slowly and is accompanied by an anticipated initial increase in the pain along the particular radicular pattern identified by the patient. If there is no temporary worsening of the pain, the needle has likely missed the mark and may need to be repositioned.

Conclusion

Mastering the simple trigger point injection allows the practitioner to identify and treat pains that do not fit traditional patterns. It sometimes allows for immediate resolution of the pain without the need for further investigation. Follow-up with the patient will allow us to identify successful interventions that may be repeated if the trigger point becomes active in the future. This is a safe and simple procedure that we may often overlook, particularly in our more challenging patients.

Competing interests: None declared.

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