Soft tissue sore spots of an unknown origin

Adam Meakins

Trigger points are common clinical diagnoses in the musculoskeletal profession. However, questions have been raised about what they are and how they are treated.1 Trigger points were first described by Travell and Simons as tender, painful areas found in myofascial tissue when palpated. These are often described as muscle ‘knots’ or taut bands, and are considered to be areas of adverse sustained muscular contraction caused either from direct trauma to myofascial tissue or through repeated microtrauma from postural or activity-related stresses/strains. This is believed to cause a crisis at the motor end plates, creating a sustained adverse muscular contraction that is then felt as pain either locally or referred elsewhere.

However, despite widespread acceptance of this theory, and a large and diverse industry built around the treatment of trigger points, including various deep tissue massage and acupressure techniques and more recently, the growing popularity of dry needling, the theory of adverse muscle knots and taut bands as a cause of soft tissue pain has never been adequately explained.

SO WHAT ARE THEY?

More and more clinicians question the accepted explanations for trigger points in the light of growing research and understanding in neurophysiology and pain science. It is questionable if trigger points are adverse areas of sustained contraction in muscles for a number of reasons and alternative causes of trigger points, such as peripheral neural inflammation or ischaemic tissues, may be more likely.5 The acceptance of knots in muscles never sat well with me. As a young physiotherapist, I regularly infuriated my educators as they attempted to teach me how to palpate trigger points, but despite provoking pain I could never feel anything adverse. Perhaps it was my lack of skill or experience in palpation; however, over a decade later, I can still confidently say that I have never felt a true trigger point.

When I discuss this with other therapists it seems that I am in a minority. Nearly all other therapists I speak to tell me that they have felt adverse knots from time to time, and they tell me I simply need more training. Maybe they are right; maybe I just have sausage fingers that cannot palpate anything. However, there is evidence that even the world’s leading experts are also unable to accurately or reliably locate trigger points.6 If these experts cannot find them, then what chance do the rest of us have?

SO WHAT ABOUT THE EVIDENCE?

Studies have tried to visualise trigger points using MR elastography, sonoelastography or Doppler ultrasound. However, these studies are of poor quality, lacking in control groups or descriptions of how they classified, diagnosed or located the trigger points.4

Tissue biochemistry research has been conducted around trigger points, and elevated levels of inflammatory and neurotransmitter chemicals have indeed been found.3 However, control tissue samples were similar.

Electromyography (EMG) studies have reported adverse electrical activity in and around trigger points.5 These very small elevated EMG spikes, however, cannot be reliably distinguished from background latent noise or artefacts from the fine, wire needles.

Dry needling for treatment of trigger points has scant evidence; studies have poor methods and high risk of bias. The proposed mechanism for dry needling is the needle stimulus that is perceived as something clear and distinct. For example, a therapist’s belief or expectation that they will find a trigger point can and does cause them to palpate perfectly normal anatomy and interpret it as an abnormal trigger point. Pareidolia is actually a common phenomenon throughout the musculoskeletal professions and occurs due to multiple factors, such as past experiences, personal preferences and preconceptions.8

In summary, alternate theories of what trigger points do are exist. They explain why we often see patients with soft tissue pain that is painful on palpation, but not why we cannot reliably or accurately feel knots or taut bands. However, it must be recognised that these alternative theories also lack any robust evidence and many questions remain still unanswered. In light of this uncertainty, I suggest that we should not be explaining trigger points as muscle knots, but rather that they are simply soft tissue sore spots of an unknown origin!

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CORRECTIONS

Meakins A. Soft tissue sore spots of an unknown origin (Br J Sports Med 2015;49:348). Adam Meakins was incorrectly titled as Dr in the correspondence address of his paper.


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