Reviewer's report

Title: High prevalence of myofascial trigger points in patients with shoulder pain.

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Reviewer: Peter P T Dorsher

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- Major Compulsory Revisions

1) The authors' interpretation of the study's results in the abstract, body of the report, and conclusions fails to accurately reflect the data's true findings—the number of shoulder muscle trigger points found in individuals with unilateral chronic shoulder pain can only explain about 10% of those patients' shoulder pain and disability. Though the number of trigger points may have had a “modest, positive” correlation with shoulder pain disability scores by the authors' broad definition of a modest correlation, these correlation coefficients were at the very low end of that scale hovering near 0.3, which means 0.3*0.3= 9% of the subjects’ shoulder pain and disability scores are attributable to the number of trigger points in shoulder girdle musculature. Alternatively, these findings imply that doing trigger point needling/injection and associated therapy for chronic shoulder pain patients would only improve their shoulder pain and disability by only about 10 percent, further suggesting that trigger points are not a clinically significant contributor to chronic shoulder pain (90% of their pain due to non-trigger-point sources!). This is basically the opposite of what the authors claim the data to show in the abstract, discussion, and conclusions. The authors appear to attempt to emphasize marginally statistically significant data correlation coefficients instead of the more important weak clinical significance findings to bolster their hypothesis that trigger points are an important, previously unrecognized contributor to chronic shoulder pain.

2) Since their data demonstrates shoulder mTrPs only account for 10% of their subjects' shoulder pain and disability, the statements that trigger point therapy would be better than anti-inflammatory medications or strengthening exercises as commonly used currently remains to be seen (see Clinical Implications in Discussion).

3) Finding an average of 6 active trigger points in each shoulder pain patient produces another issue—many of those muscles have very different referred pain patterns described by Travell and Simons. The anatomic location and referred pain patterns for the mid and upper trapezius trigger points are spatially quite distant from those of teres and deltoid trigger points, for example. So which of these areas caused the subject’s “shoulder pain”? Was the subject’s “shoulder pain” more upper back pain or shoulder joint pain? Implicit in the assumption of this study is that the subject’s shoulder pain is due to muscle pain and referred pain from muscle, though the reader is not given information as to whether subjects had shoulder osteoarthritis, rotator cuff partial tears, or other potentially
painful shoulder structures. Does the examiner’s query as to whether the trigger palpation replicates the subject’s pain tend to subconsciously push the subject to give positive/yes responses from the subject during trigger point palpation and thus lead to over-reporting of active trigger points?

- Minor Essential Revisions

4) The study subjects’ DASH scores were only 30 on a 100 point scale and VAS scores were likewise rather modest hovering around 40 out of a hundred. The total limitation in shoulder ROM was only about 30 degrees total despite 5 planes of motion measured—this would suggest the shoulder motion likewise was only mildly limited on the symptomatic side. Perhaps these subjects were “too good” which may have had a negative impact on the magnitude of correspondence of trigger points to shoulder pain and disability (presuming patients with higher pain and disability levels might have more active and latent trigger points). Please comment

5) The methods section does not specify who was responsible for making sure the VAS, DASH, and BDI forms were filled out and collected them, and who handled the data. Optimally it should have been someone not involved in the clinical evaluation. Similarly it should be specified whether the person palpatating the trigger points is the same one doing the shoulder ROM measurements—this could introduce a source of bias if the same person does both.

6) I am puzzled why some scapulothoracic muscles such as upper and medial trapezius and pectoralis minor were examined for trigger points, yet levator scapula and serratus anterior were not—this seems particularly relevant since the upper trapezius trigger point was the most common one found, and the middle trapezius also was found to have a high frequency of active and latent trigger points. Please comment on why the 17 muscles examined were chosen for examination, and why these other important points were not examined.

7) In the Results section first paragraph, second sentence, the number counts on patient pain recurrence rates do not add up to 72—please correct.

8) please place labels on the x and y axes for Figures 2 and 3

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare I have no competing interests