Effect of Instrument Assisted Soft Tissue Treatment on Discomfort Associated With Myofascial Trigger Points
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Context: Travell & Simons define a myofascial trigger point (MTrP) as "a hyperirritable spot in skeletal muscle that is associated with a hypersensitive palpable nodule in a taut band." Instrument Assisted Soft Tissue Techniques (IASTT) use stainless steel instruments with beveled edges to assist the clinician in the evaluation and mobilization of soft tissue. Objective: The purpose of this study was to compare the effect of IASTT on MTrPs to that of a control. Design: Randomized controlled trial. Setting: Research laboratory. Participants: Healthy participants (n=27) with MTrP in the upper back were recruited. Participants with sensory deficits, skin lesions, systemic pathology, a history of shoulder, neck, or back surgery, those taking medication, or those being treated for muscle pathology were excluded. Consent forms approved by the University Institutional Review Board were signed. Interventions: Two MTrPs were identified in the upper back and assessed for pain thresholds (pre-test) using the JTECH dolorimeter with 1-cm diameter tip (pressure sensitivity measured in grams). Measurements were recorded by a research assistant so that the tester was blinded to the measurements. The MTrPs were marked with a Sharpie ® for subsequent re-tests. Each participant was randomly assigned to treat the MTrP of either the right or left side with the contralateral MTrP serving as a control. Six treatments were administered over a 3-week span. Treatment included 5-minutes of IASTT fanning and sweeping around and swiveling on the MTrP. Re-testing using the dolorimeter occurred after treatment #6 and 3-4 days after treatment concluded. Main Outcome Measures: Pressure sensitivity of the MTrP via the dolorimeter. Results: A repeated measures ANOVA revealed no statistically significant difference between the groups (p = 0.497), but there was a significant difference over time (p < 0.001). The control MTrP improved 3.7g from pre-test to post-test and 0.9g from post-test to follow-up. Whereas the treated MTrP improved 6.2g from pre-test to post-test and 0.1g from post-test to follow-up. Conclusions: IASTT may be an effective treatment for MTrPs. The improvement of both groups may be explained by a systemic response with the treated MTrP carrying-over to the contralateral side. Perhaps the IASTT facilitated the release of neurotransmitters to abate the discomfort. Or perhaps the interconnectedness of the linkages of the muscular and fascial systems contributed to the reduction of discomfort. Given the lack of studies on IASTT with none of them being randomized controls, this outcome is helpful in evaluating the clinical efficacy of these instruments. As a result of this study, the investigators are embarking on phase 2. The next phase will utilize an A-B-A design to eliminate the issue of a crossover effect. Such research will contribute to the lack of IASTT literature. Word Count: 442