

CASE SERIES

STRENGTH EXERCISES COMBINED WITH DRY NEEDLING WITH ELECTRICAL STIMULATION IMPROVE PAIN AND FUNCTION IN PATIENTS WITH CHRONIC ROTATOR CUFF TENDINOPATHY: A RETROSPECTIVE CASE SERIES

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ABSTRACT

Background and Purpose: Rotator cuff tendinopathy (RTCT) is regularly treated by the physical therapist. Multiple etiologies for RTCT exist, leading an individual to seek treatment from their provider of choice. Strengthening exercises (SE) have been reported to be effective in the treatment of RTCT, but there is limited evidence on the effectiveness of dry needling (DN) for this condition. The purpose of this retrospective case series was to investigate DN to various non-trigger point-based anatomical locations coupled with strengthening exercises (SE) as a treatment strategy to decrease pain and increase function in healthy patients with chronic RTC pathology.

Case Descriptions: Eight patients with RTCT were treated 1-2 times per week for up to eight weeks, and no more than sixteen total treatment sessions of SE and DN. Outcomes were tested at baseline and upon completion of therapy. A long-term outcome measure follow up averaging 8.75 months (range 3 to 20 months) was also performed. The outcome measures included the Visual Analog Scale (VAS) and the Quick Dash (QD).

Outcomes: Clinically meaningful improvements in disability and pain in the short term and upon long-term follow up were demonstrated for each patient. The mean VAS was broken down into best (VAS^B), current (VAS^C), and worst (VAS^W) rated pain levels and the mean was calculated for the eight patients. The mean VAS^B improved from 22.5 mm at the initial assessment to 2.36 mm upon completion of the intervention duration. The mean VAS^C improved from 28.36 mm to 5.0 mm, and the mean VAS^W improved from 68.88 mm to 13.25 mm. At the long-term follow up (average 8.75 months), The mean VAS^B, VAS^C, and VAS^W scores were 0.36 mm, 4.88 mm, and 17.88 mm respectively. The QD^{mean} for the eight patients improved from 43.09 at baseline to 16.04 at the completion of treatment. At long-term follow-up, the QD^{mean} was 6.59.

Conclusion: Clinically meaningful improvements in pain and disability were noted with the intervention protocol. All subjects responded positively to the intervention and reported quality of life was improved for each subject. The results of this case series show promising outcomes for the combination of SE and DN in the treatment of chronic RTCT.

Level of Evidence: Level 4

Keywords: Dry needling, rotator cuff tendinopathy, shoulder pain

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