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# The Effects of Dry Needling in the Management of Sub-acromial Impingement Syndrome: A Case Report

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## BACKGROUND

Many practitioners have noticed a correlation between active trigger points (TrP) in patients presenting with signs and symptoms consistent with sub-acromial impingement syndrome. Trigger points in the anterior deltoid musculature can correlate with a rounded shoulder posture, which may in turn decrease the space just inferior to the acromion.

The theory being presented is that dry needling to an active trigger point in the anterior deltoid musculature, in addition to PT intervention, may help eliminate symptoms of sub-acromial impingement syndrome with just 1-2 sessions of dry needling (DN).

## CASE DESCRIPTION

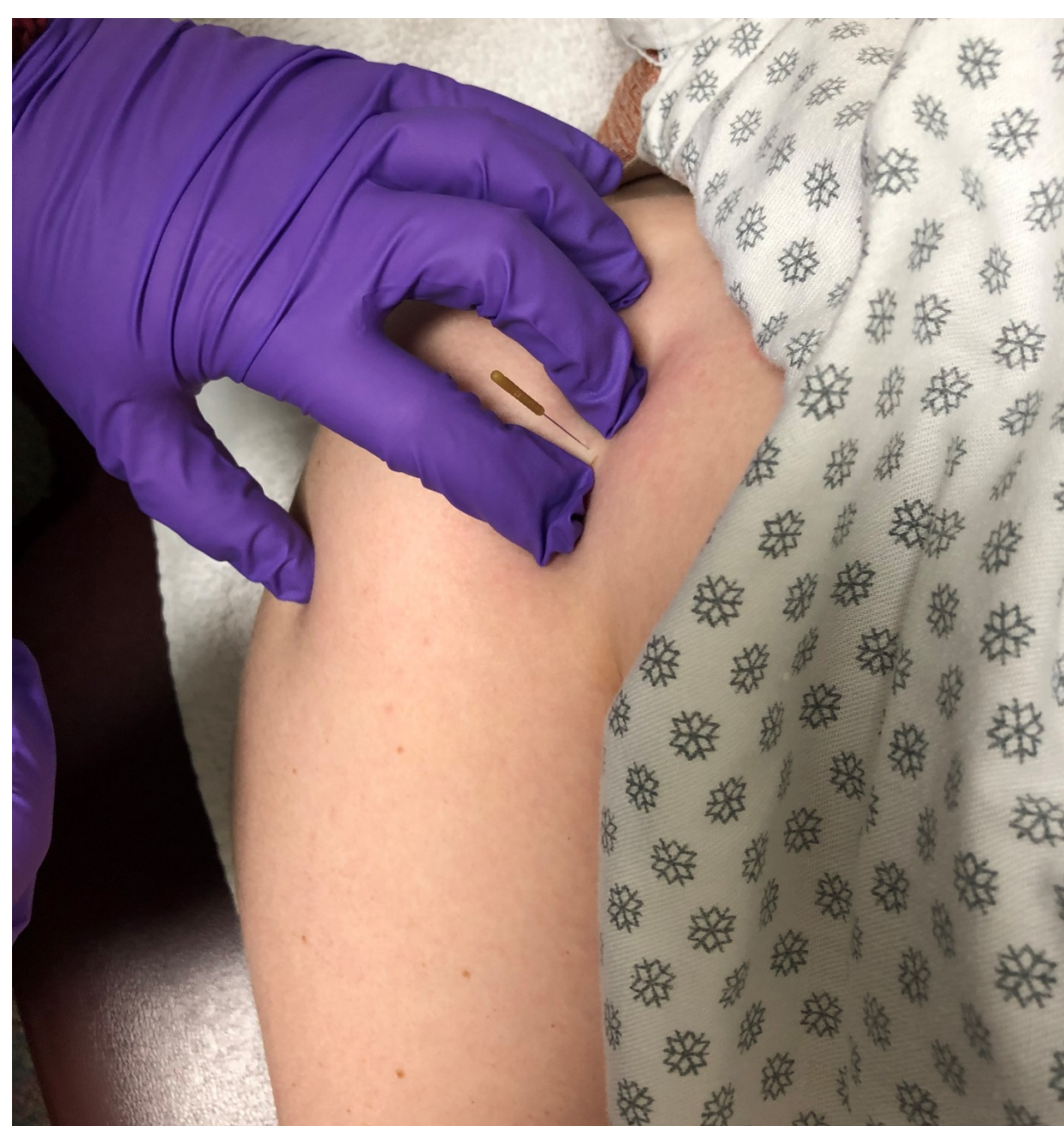
Patient is a 77 y/o male that presents with left shoulder pain after an injury while working in his yard. Mechanism of injury consists of a traumatic pull into flexion when using his chainsaw about 7 months ago. His pain worsened in severity over the past 7 months and he now feels 8/10 sharp pain when raising his upper extremity in any plane over head. Objective measurements from evaluation consist of the following.

- + Hawkins Kennedy Test
- + Empty Can Test
- Hypomobility in posterior direction at GH joint.
- Pt was unable to answer minimum required questions on DASH.

	AROM	PROM	MMT
GH flex	108° pain	135°	3+/5 pain
GH abd	80° pain	104°	3+/5 pain
GH ER	60°	50°	4+/5
GH IR	44° pain	52°	4-/5

## METHODS

Patient began receiving physical therapy intervention at week 1. He was given RTC and postural musculature strengthening exercises, PROM, joint mobilization, and soft tissue mobilization. After no significant improvements were noted, a reassessment was performed during week 2 which revealed an active TrP in the anterior deltoid musculature. DN was performed at week 2, and again at week 4 in conjunction with other therapeutic interventions.



## RESULTS

Patient was discharged at week 6 upon achievement of all physical therapy goals and returned to AROM and PROM WFL pain free. He returned to all functional activities without pain. Pt scored a 5.8 on the DASH, and had negative Hawkins Kennedy and Empty Can tests. Pain was reported as 0/10. Follow up assessment was performed via phone call at week 7 and patient reported he continued to have no deficits or pain.

	AROM	PROM	MMT
GH flex	150°	155°	4/5
GH abd	155°	157°	4+/5
GH ER	75°	80°	5/5
GH IR	68°	80°	5/5

## CONCLUSION

From this case study, we can conclude that TrP- DN to an active TrP in the anterior deltoid can yield statistically significant improvements in ROM, strength, pain, and functional abilities when combined with physical therapy intervention. In addition, it is important to note that the most significant improvements were subjectively reported in the sessions immediately following each DN intervention. Limitations from the study consist of the lack of immediate pre and post DN objective measures, which may show a stronger correlation between DN and objective improvements.

## CLINICAL APPLICATIONS

While research regarding TrP-DN to the anterior deltoid is limited, literature currently literature reveals that dry needling at the shoulder musculature in general has yielded either equivalent or superior results compared to general PT management and exercise. Being that the biomechanical effects of trigger points in the anterior deltoid can impinge on the sub-acromial space, a thorough PFT and PFC exam step should be included for all patients presenting with impingement symptoms. Further, TrP-DN should be included in the POC for any patient's presenting with both impingement and active TrPs.

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