

## **Sonographic Effects of Trigger Points- and Fascia Dry Needling in Subjects with Myofascial Pain Syndrome of the Upper Trapezius Muscle**

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**Purpose:** To evaluate the sonographic effects of trigger points- and fascia dry needling in subjects with myofascial pain syndrome of the upper trapezius muscle

**Patients and Methods:** 60 subjects(23 males, 37 females) with upper trapezius myofascial pain syndrome (age=25/90±4/47y, weight= 63/53±7/76 kg, Height: 166/55± 5/65 cm, Pain duration: 9/75±6/04 m) were examined using nonprobability sampling method. All patients randomly assigned to three groups: group 1(G1): Stretching, G2: Stretching & trigger points dry needling(DN), G3: Stretching & fascial DN. Maximum thickness of upper trapezius muscle and fascia and strain ratio were evaluated in all participants before-after treatment and 14 days later by following instruments respectively: Sonography and sonoelastography.

**Results:** The interaction of time × group were significant for fascia thickness ( $P<0/001$ ) and strain ratio ( $P<0/001$ ). The main effect of time on UT thickness was significant ( $P<0/01$ ). The results of Bonferroni post-hoc analysis showed that fascia thickness significantly decreased between G1 and G3 ( $P=0/01$ ), G2 and G3 ( $P=0/03$ ) on follow-up. Also, strain ratio revealed significant increase between G1and G2 ( $P=0/02$ ), G1 and G3 ( $P<0/001$ ), G2 and G3 ( $P=0/008$ ) after treatment and follow-up.

**Conclusions:** Fascia DN is more effective than trigger point DN on fascia thickness and strain ration of upper trapezius in subjects with myofascial pain syndrome.

**Keywords:** Myofascial pain syndrome, Dry needling, Sonography, Strain ratio