

통증 및 근골격재활

게시일시 및 장소 : 10 월 18 일(금) 08:30-12:20 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 10:00-10:45 Room G(3F)

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Feasibility of ultrasound shear wave elastography guided TPI on the myofascial pain syndrome

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objective

To research the accuracy and effectiveness on injection with Ultrasound Shear Wave Elastography (SWE) at upper trapezius muscle myofascial trigger point(MTrP)
 To imaging the stiffness at MTrPs and to assess the feasibility of SEW in US-guided MTrP injection.

methods

40s with focal pain on upper trapezius muscle were assigned to the group (n=40). Changes in Visual Analogue Scale (VAS), shoulder Range of Motion (ROM), manual muscle test (MMT) graded by Medical Research Council, shoulder pain and disability index (SPADI), and number of analgesics per day at 2 weeks from baseline served as primary outcomes measures. Moreover, correlations of primary outcome measures with changes in tissue elasticity with SWE (kPA) at 2 weeks from baseline in the trial and control group served as secondary ones.

Results

Of efficacy outcome measures, differences in changes in pain VAS scores, NDI scores, SPADI scores, tenderness and number of palpable tender nodules at 2 weeks from baseline between the two groups reached statistical significance (p=0.003, 0.012, 0.018, 0.036 and 0.019, respectively). A Pearson's correlation analysis showed that stiffness at the MTrPs had a significant correlation with the VAS (r=0.378 and p=0.015), SPADI (r=0.323 and 0.039) and NDI scores (r=0.389 and p=0.012)

Conclusion

SWE might be useful in increasing the efficacy of US-guided MTrP injection in patients with MPS.
SWE is feasibility in identifying pathological tissue but also efficient in quantifying changes in effectiveness of MTrPs injection

Table1. Baseline characteristics of the patients (n=41)

Variables ^o	Values ^o
Age (years) ^o	44.27±2.22 ^o
Sex ^o	^o
Men ^o	18 ^o
Women ^o	23 ^o
Daily use of analgesics ^o	1.78±0.80 ^o
ROM ^o	^o
Abduction ^o	154.51±7.40 ^o
Adduction ^o	154.40±6.34 ^o
Flexion ^o	157.56±6.14 ^o
Extension ^o	64.36±4.66 ^o
External rotation ^o	92.44±4.89 ^o
Internal rotation ^o	96.34±5.48 ^o
MMT ^o	^o
Abduction ^o	4.95±0.22 ^o
Adduction ^o	4.95±0.22 ^o
Flexion ^o	4.95±0.22 ^o
Extension ^o	4.95±0.22 ^o
External rotation ^o	4.93±0.26 ^o
Internal rotation ^o	4.93±0.26 ^o
Pain VAS scores ^o	7.05±0.62 ^o
NDI scores ^o	20.54±3.23 ^o
SPADI scores ^o	38.32±6.50 ^o
Number of palpable tender nodules ^o	2.37±0.80 ^o
Spasticity on SWE ^o	159.63±9.72 ^o

Table2. Efficacy outcomes

Variables ^o	Values ^o						p-value ^o
	Trial group ^o (n=21) ^o			Control group ^o (n=20) ^o			
	0 week ^o	2 weeks ^o	Δ ^o	0 week ^o	2 weeks ^o	Δ ^o	
Daily use of analgesics ^o	1.52±0.68 _o	N/A _o	N/A _o	2.05±0.83 _o	N/A _o	N/A _o	0.868 _o
Pain VAS scores ^o	7.06±0.61 _o	5.14±0.74 _o	1.92±0.56 _o	7.03±0.65 _o	5.83±1.24 _o	1.20±0.85 _o	*0.003 _o
NDI scores ^o	20.67±3.28 _o	9.52±3.48 _o	11.14±4.19 _o	20.40±3.25 _o	14.55±7.32 _o	5.85±7.80 _o	*0.012 _o
SPADI scores ^o	38.67±6.20 _o	18.52±8.86 _o	20.14±8.90 _o	37.95±6.95 _o	28.25±15.39 _o	9.70±16.39 _o	*0.018 _o
Tenderness ^o	21 _o	13 _o	8 _o	20 _o	18 _o	2 _o	*0.036 _o
Number of palpable tender nodules ^o	2.38±0.86 _o	1.33±1.11 _o	1.00±1.10 _o	2.35±0.75 _o	2.10±1.07 _o	0.25±0.85 _o	*0.019 _o
Spasticity on SWE ^o	159.43±10.15 _o	110.05±22.35 _o	49.38±16.99 _o	159.85±9.50 _o	122.45±14.66 _o	37.4±8.96 _o	*0.008 _o

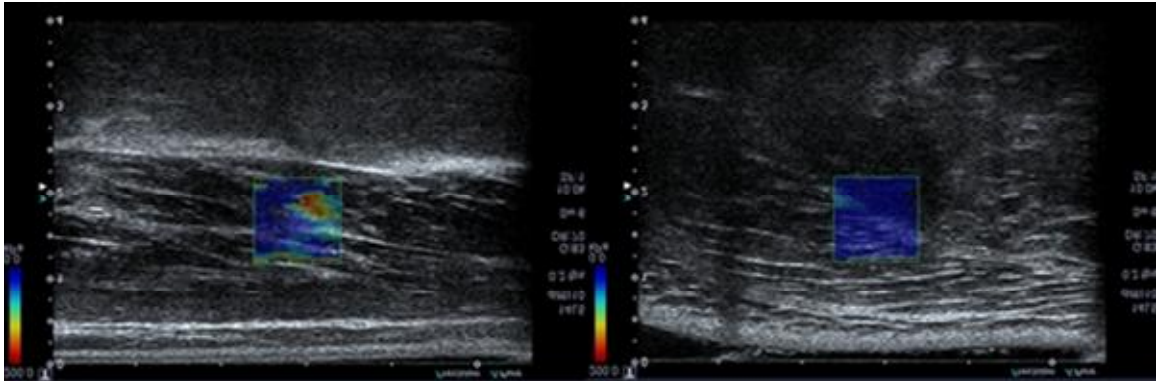


Fig 1. Pre-TPI and Post-TPI injection