

Treatment Approach for Traumatic Myositis Ossificans Using Ultrasound and Stretch Protocol:

A Case Report

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Background

Traumatic Myositis Ossificans (MO)

- MO can happen at any age, but the highest prevalence occurs in young active males after trauma (60-75% are traumatic).²
- MO can occur from repetitive minor trauma, which is common in horseback riders who develop MO in the adductors and shooters who present with MO in their deltoid.¹
- Patients with MO commonly present in the clinic with signs and symptoms of pain, a palpable mass, and joint stiffness.¹
- Patients often report persistent muscle pain longer than that of a simple muscle strain or contusion.¹
- Currently, there is a paucity of evidence in the conservative treatment of traumatic MO.

Purpose

- The purpose of this study was to investigate the therapeutic effects of ultrasound heating combined with stretching as a treatment option for traumatic Myositis Ossificans.

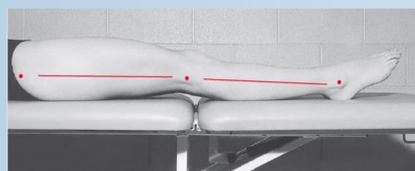


Figure 1. landmarks for goniometry to measuring knee ROM.³

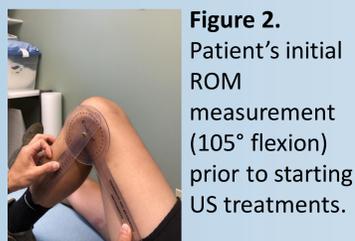


Figure 2. Patient's initial ROM measurement (105° flexion) prior to starting US treatments.



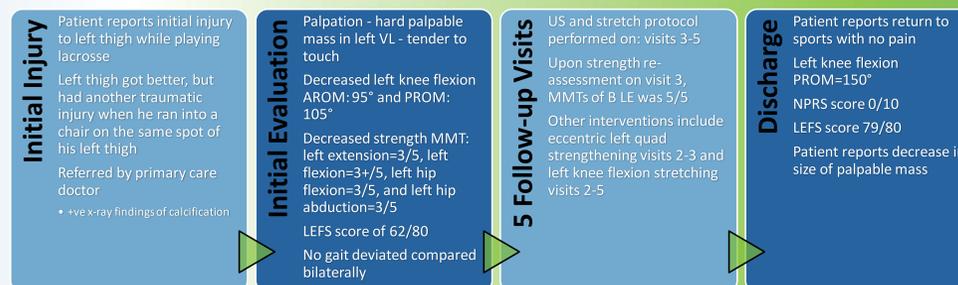
Figure 3. Patient's ROM measurement at discharge (150° flexion)

Patient Description

- 15 year-old high school lacrosse player who sustained an injury to his left thigh
- The patient had no history of MO
 - Had no reports of comorbidities
 - Was not taking medications
- Pain began 3 months prior to seeking care
- Symptoms: pain when descending stairs, running, jumping, end range flexion, decreased flexion ROM, and decreased LE strength



https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5028001/



Interventions

Ultrasound Parameters (Fig. 5).

- 0.5-1.5 w/cm²
- Continuous
- Frequency: 3.0 MHz
- 10 minutes
- +1% Hydrocortizone cream



Fig.5

Stretch Protocol (Fig. 6-8).

- Patient position: supine with or without 45° recline
- Initial 2 min with L knee positioned ~75% knee flexion
- Successive end range passive knee flexion in 2-min increments
- Passive end range knee flexion for 1-min following ultrasound treatment



Fig.6

Fig.7

Fig.8

Strengthening (Fig. 9).

- Bilateral and unilateral eccentric sit to stand with a focus on a slow and controlled descent.
 - During unilateral eccentric sit to stand the patient was instructed to stand using both LEs.



Fig.9

Results

Tests & Measures	Initial Evaluation Results		Discharge Results	
Lower Extremity Functional Scale (0-80/80)	49/80		79/80	
Knee ROM (degrees)	Right	Left	Right	Left
Flexion	150	105	150	150
Extension	0	0	0	0
Manual Muscle Testing (0-5/5)	Right	Left	Right	Left
Knee Flexion	5/5	3+/5*	5/5	5/5
Knee Extension	5/5	3/5*	5/5	5/5
Hip flexion	5/5	3/5	5/5	5/5
Hip Abduction	5/5	3/5	5/5	5/5

Patient was able to return to full participation in his sports
* - denotes pain during MMT

Conclusion

- An US and stretch protocol treatment, in addition to traditional PT, may be an effective way of improving ROM, strength, pain, size of palpable mass and return to prior level of function for an individual who presents with a traumatic MO.
- Future research may want to consider investigating a more strict protocol of solely utilizing an US and stretch protocol. Studies may also want to consider investigating the US and stretch protocol without phonophoresis, US phonophoresis without the stretch protocol, and the stretch protocol without the US phonophoresis.

References

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