CASE PRESENTATION

A 62-year-old male presented to the Pre-Doctoral Osteopathic Teaching Fellows OMM Clinic with 3 months of left heel pain. The pain was localized to his left heel, just anterior and medial to the calcaneus. The pain was sharp and worse with the first few steps of the day. Intensity was 5-8/10. It was associated with an occasional sharp, shooting pain from his heel up his calf muscles. It would improve slightly and then worsen towards the end of his work day. Similar symptoms had previously resolved in 1-2 weeks. He denied trauma, changing shoes or exercise habits, numbness, tingling, weakness, swelling or bruising. He worked as a simulation technician at a medical school and spent 6-17 hours per day on his feet. His work included heavy lifting.

The patient was treated during 5 sessions over the course of 3 weeks. The examination and treatment were completed by the osteopathic pre-doctoral teaching fellow and a board certified OMM/NMM physician. The entire patient's specific somatic dysfunction. OMT treatments included muscle-energy, myofascial release, balanced ligamentous tension, and counterstrain. Changes in the thickness of plantar fascia were noted between treatment sessions as well as before and after administration of OMT.

INTRODUCTION

Ultrasound assessment of the plantar fascia has shown that there are distinct changes in the echogenicity of the structure as well as the structures around it when patients experience the pain characteristic of plantar fasciitis. The plantar fascia of asymptomatic patients is <4mm thick, but with plantar fasciitis it increases in thickness (Abul 2015).

Ultrasound is a safe and expedient method to confirm the diagnosis of plantar fasciitis; it can be used to differentiate between acute plantar fascia tears, plantar fascia fibromas or plantar fasciitis (Argerakis 2015). The plantar fascia can be imaged reliably by different sonographers with reproducible results (Cheng 2012).

Additionally, ultrasound imaging has been used to evaluate physical changes following various interventions (Gordon 2012, Genc 2004). Fabrikant (2011) found that patient's perceptions of pain correlated with the thickness of the plantar fascia following various treatments, including physical therapy, steroid injections, conservative therapy, and ice. They found a decrease in size of the plantar fascia correlated with decreased perceptions of pain.

RESULTS

Figure 1: Transverse image of plantar fascia on symptomatic left foot.

Figure 2: Transverse image of plantar fascia on right foot.

Figure 3: Plantar fascia thickness at the calcaneal insertion, shown as mean and standard deviation of 5 pre- and post-treatment measurements.

Figure 4: Plantar fascia thickness 30mm from center of calcaneal insertion, shown as mean and standard deviation of 5 pre- and post-treatment measurements.

Figure 5: Longitudinal Orientation of US 7-12 MHz linear array ultrasound transducer on symptomatic left foot.

CONCLUSION

At the onset of treatment, the patient's symptomatic plantar fascia measured 7.2 mm in thickness. After 5 OMT sessions, over the course of three weeks, the patient's symptoms were improved and the plantar fascia thickness reduced to 5.8 mm (~20% reduction in thickness). Previous research has shown a correlation between a patient's experience of the pain of plantar fasciitis and a decrease in thickness (Fabrikant 2011). This study followed the trend, which suggests there is a role for musculoskeletal ultrasound in imaging the response to OMT. This case is an example of the utility of musculoskeletal ultrasound in patient care as well as a potential resource for studying the effects of osteopathic manipulative treatment.

ACKNOWLEDGEMENTS/DISCLOSURES

The Authors have no conflicts of interest. Many thanks Deborah Heath DO, Nick Wilson, and the patients at the ATSU-SOMA Fellow's OMT Clinic.

REFERENCES


ABSTRACT

In this case presentation, osteopathic manipulative therapy (OMT) was used to treat a patient's unilateral plantar fasciitis. Ultrasound imaging was employed to monitor changes in the plantar fascia during 5 sessions over 3 weeks. Plantar fasciitis presents as pain on the plantar aspect of the heel, that is worse with the first steps after resting. Pain improves slightly throughout the day, but eventually increases with continued activity. Generally, a clinical diagnosis can be made. Treatments consist of supportive care, stretching the foot and lower legs, icing the plantar aspect of the heel, changing shoes, and NSAIDs. OMT can be used to decrease pain and increase range of motion.

Ultrasound imaging of painful plantar fascia consistently reveals thickening in comparison to a non-painful foot. Previous studies have correlated changes in patient perceptions of a painful foot correlate with changes in the thickness of the plantar fascia.

In the present case study, pre- and post-treatment plantar fascia thickness was measured at two locations, insertion and anterior to insertion, with ultrasound. Conservative therapy and OMT were directed to the patient's specific somatic dysfunction. OMT treatments included muscle-energy, myofascial release, balanced ligamentous tension, and counterstrain. Changes in the thickness of plantar fascia were noted between treatment sessions as well as before and after administration of OMT.

Ultrasound assessment of the plantar fascia has shown that there are distinct changes in the echogenicity of the structure as well as the structures around it when patients experience the pain characteristic of plantar fasciitis. The plantar fascia of asymptomatic patients is <4mm thick, but with plantar fasciitis it increases in thickness (Abul 2015). Ultrasound is a safe and expedient method to confirm the diagnosis of plantar fasciitis; it can be used to differentiate between acute plantar fascia tears, plantar fascia fibromas or plantar fasciitis (Argerakis 2015). The plantar fascia can be imaged reliably by different sonographers with reproducible results (Cheng 2012).

Additionally, ultrasound imaging has been used to evaluate physical changes following various interventions (Gordon 2012, Genc 2004). Fabrikant (2011) found that patient's perceptions of pain correlated with the thickness of the plantar fascia following various treatments, including physical therapy, steroid injections, conservative therapy, and ice. They found a decrease in size of the plantar fascia correlated with decreased perceptions of pain.

REFERENCES