

Introduction

- ❑ Nerve sheath tumors present significant chronic pain management challenges due to a combination of mechanical and inflammatory injury leading to peripheral and central sensitization.
- ❑ Conventional approaches to treating neuropathic pain associated with nerve sheath tumors include multimodal medication management, physical therapy and surgical intervention.
- ❑ The use of high concentration capsaicin in treating pain from nerve sheath tumors has not been described in literature.

Methods

- ❑ Patient informed consent was obtained in writing for submission of a medically challenging case report. As there is no identifiable patient information in the case report, it is exempt from the IRB review requirement as per University of Chicago Medicine policy.

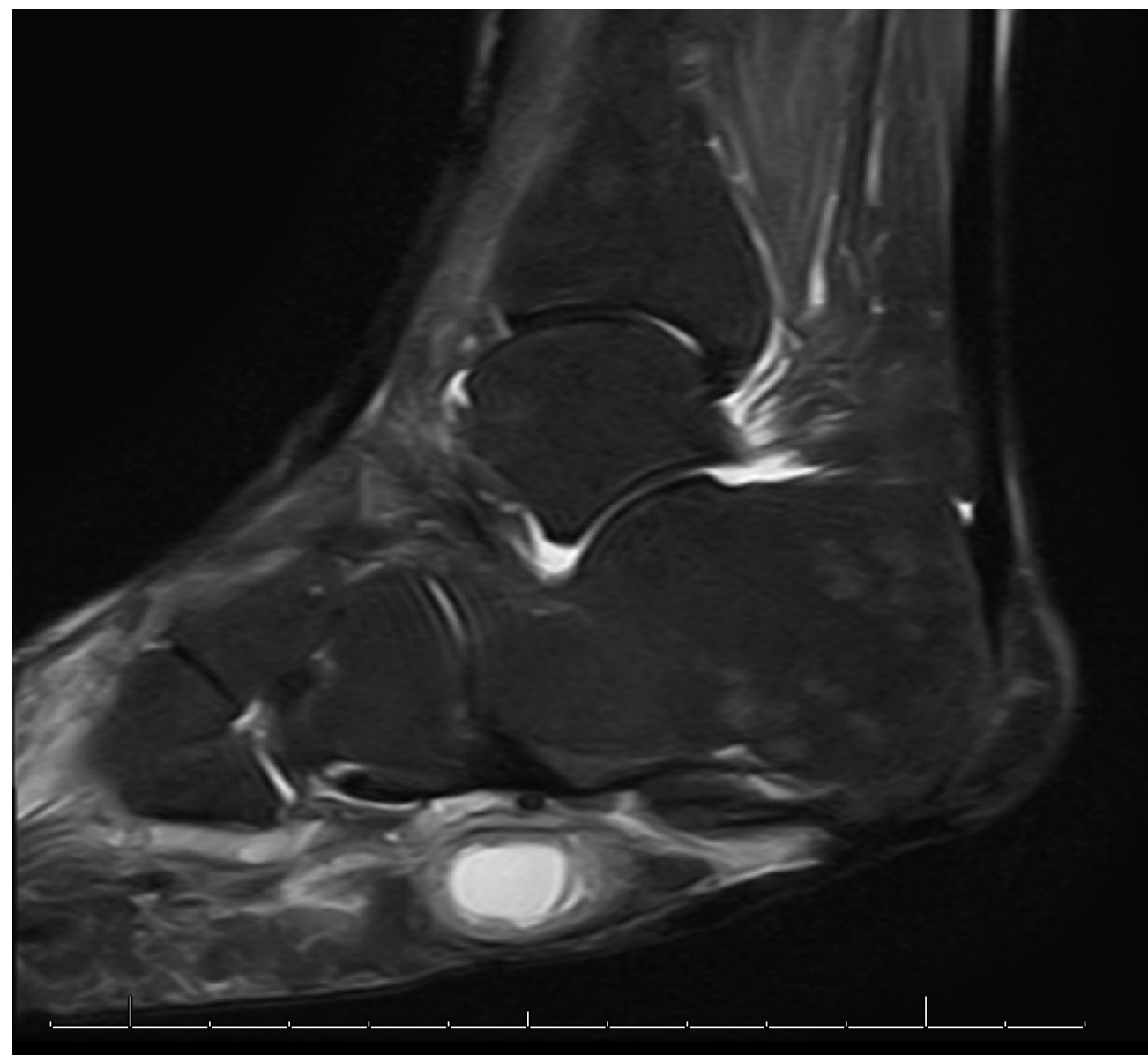


Figure 1: MRI left foot, T2 weighted prior to 8% capsaicin patch application



Figure 2. Left foot, medial view at 2 month follow up after initial 8% capsaicin patch application

Case Description

- ❑ A 62 year old female with a history of nerve sheath tumors to the left foot presented to pain clinic for management of her chronic left foot pain.
- ❑ Her foot pain is described as constant, shooting pain and she endorses severe allodynia as well as muscle spasms, edema and erythema of the foot.
- ❑ Through extensive workup her nerve sheath tumors were determined to be benign and inoperable (Figure 1).
- ❑ She adheres to her home physical therapy regimen which provides mild analgesic benefit.
- ❑ Her oral pain regimen includes baclofen, cyclobenzaprine, celecoxib, and duloxetine. She was unable to tolerate gabapentin and pregabalin.
- ❑ Previous nerve blocks performed at another institution provided no relief.
- ❑ Spinal cord stimulator was discussed as a potential next step in treatment for refractory pain, but she was first encouraged to try a high concentration (8%) capsaicin patch
- ❑ Following a 60 minute application of high concentration capsaicin patch, she had dramatic improvement in her symptoms (Table 1).
- ❑ Her symptom improvement lasted through her 2 month follow up appointment, for which she received another application of high concentration capsaicin patch (Figure 2).

Table 1. Symptoms prior and after 8% capsaicin patch administration

Prior to 8% capsaicin patch administration	After 8% capsaicin patch administration
Constant shooting left foot pain	→ Episodic shooting left foot pain
Severe allodynia	→ Improved allodynia (able to wear shoes)
Edema	→ Edema significantly improved
Erythema	→ Erythema resolved
Muscle spasms	→ Muscle spasms resolved
Severely limited range of motion	→ Range of motion significantly improved
Inability to bear weight	→ Able to stand independently for brief periods of time

Discussion

- ❑ Nerve sheath tumors cause chronic pain through the following pathways:

Mechanical	Compression and stretching of nerves, particularly in the axon
Inflammatory	Increased levels of cytokines and prostaglandins due to tumor invasion increases sensitivity of nociceptive pathways
Peripheral/central sensitization	Chronic irritation of the nerve leads to peripheral and central sensitization

- ❑ High concentration capsaicin provides analgesia through enhanced stimulation and subsequent reduction of transient receptor potential vanilloid 1 receptors (TRPV1) and epidural nerve fiber density.¹
- ❑ Studies have demonstrated efficacy of high-concentration capsaicin in neuropathic pain conditions such as post-herpetic neuralgia and HIV associated neuropathy.²

Conclusion

- ❑ High concentration (8%) capsaicin patches can be an effective treatment modality for complex regional pain syndrome secondary to peripheral nerve sheath tumors.

References

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2. Mou, Joya; Paillard, Florenceb; Turnbull, Barryc; Trudeau, Jeremiaha; Stoker, Malcolmd; Katz, Nathaniel P.a. Efficacy of Qutenza® (capsaicin) 8% patch for neuropathic pain: A meta-analysis of the Qutenza Clinical Trials Database. *Pain* 154(9):p 1632-1639, September 2013. | DOI: 10.1016/j.pain.2013.04.044