

INTRODUCTION

- We present a patient who is a United States Marine who was stationed overseas in 2024 when he had a fall from height resulting in the following injuries: *L5 compression fracture, left second through fourth metatarsal shaft, calcaneus, navicular and medial cuneiform fractures.*
- His fractures were non operative and he underwent conservative management. His pain improved over time, but after 12 months he was unable to run 3 miles in less than 28 minutes which is required for the USMC Physical Fitness Test. The inability to meet this standard would result in him being separated from the military which the patient did not want.
- When the patient presented in 2025 for management of his chronic pain he had maximized conservative therapy with rehab, medications, and orthotics.

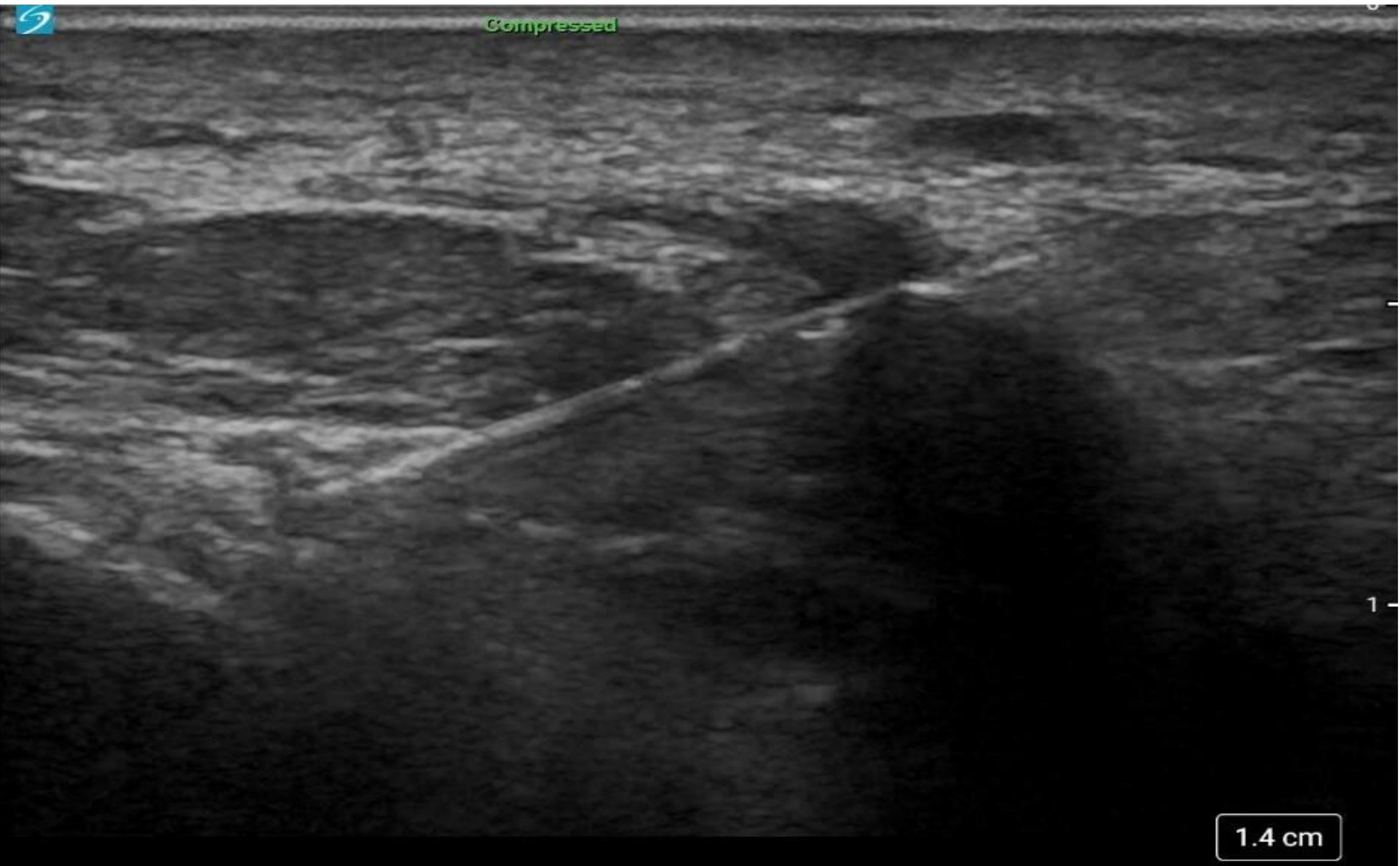
METHODS

- He initially underwent a diagnostic/therapeutic deep peroneal nerve block with lidocaine and corticosteroid proximal to the tibiotalar joint over the anterior tibia with >50% improvement in his pain.
- The patient was then offered treatment with pulsed radiofrequency ablation. He underwent the procedure 5 months after the initial block.
- Pulsed RF was done at 42 degrees Celsius for 120 seconds at multiple sites to the nerve proximal to the tibiotalar joint.

FIGURE 1. Foot Fractures



FIGURE 2. Pulsed RF Ablation Procedure



RESULTS

- Post procedure the patient was satisfied with the result and went on to run 3 miles in less than 28 minutes and continue his career in the Marine Corps.

DISCUSSION

- The saphenous, tibial, sural, superficial peroneal, and deep peroneal nerves are all involved in the sensory innervation of the ankle joint.¹
- Historically a deep peroneal neurectomy has been performed for chronic, refractory midfoot pain from arthritis.³
- A 2019 systematic review of 15 studies for radiofrequency treatment of the ankle for the management of chronic foot and ankle pain, primarily the medial calcaneal nerve for heel pain, found it to be a safe treatment option.²
- To our knowledge this is the first report of radiofrequency ablation of the deep peroneal nerve to manage chronic mid/forefoot pain and may represent a viable treatment option for these patients. Further research is warranted.

References

- 1.Mentzel, M. & Fleischmann, W. & Bauer, G. & Kinzl, L.. (2002). Ankle joint denervation. Part 1: Anatomy - The sensory innervation of the ankle joint. Foot and Ankle Surgery. 5. 15 - 20. 10.1046/j.1460-9584.1999.51121.x.
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3. Iturregui JM, Haupt ET, Wilke B, Kraus JC, Shi GG. Durability and Safety of Deep Peroneal Nerve Neurectomy for Midfoot Arthritis at Midterm Follow Up. Foot Ankle Orthop. 2022 Nov 14;7(4):2473011421S00706. doi: 10.1177/2473011421S00706. PMID: PMC9666840.