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Diagnosis and Management of Pain in a Rare Case of Lateral Sural Cutaneous Nerve Entrapment: A Case Study

Topic: Pain

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BACKGROUND

Lateral sural cutaneous nerve (LSCN) entrapment is an uncommon condition that can lead to lateral lower leg pain and sensory disturbances. Due to its rarity and nonspecific symptoms, it is often misdiagnosed or overlooked. This case study describes the presentation, diagnostic approach, and effective management of a patient with LSCN entrapment.

CASE DESCRIPTION

A 30-year-old woman experienced external trauma to the postero-external aspect of the middle third of the right leg 19 years ago. Over time, she developed chronic swelling, neuropathic pain rated 7/10 on the Visual Analog Scale (VAS), and sensory deficits in the LSCN territory. Physical examination revealed a superficial hypoesthesia, Tinel's sign was positive over the suspected nerve entrapment site. A previous surgical decompression performed eight years earlier was unsuccessful. Magnetic resonance imaging (MRI) findings suggested chronic exertional compartment syndrome without a detectable mass, while an elektromiyografi (EMG) confirmed axonotmesis of the LSCN, ruling out L5 radiculopathy and fibular nerve involvement. The patient underwent a diagnostic and therapeutic anesthetic test under ultrasound guidance using lidocaine 2% and dexamethasone. Immediate anesthesia in the LSCN territory confirmed the diagnosis. Three days after injection, the pain reduced to 3/10 (VAS), and Tinel's sign disappeared, although hypoesthesia persisted. One month later, the pain decreased further to 2/10 (VAS) at rest and ranged up to 4/10 with exertion. After two months, the pain remained stable, and the patient did not seek further corticosteroid injections or nerve hydro-distension.

DISCUSSION

This case presents a chronic pain syndrome, originating from a traumatic injury. The symptoms chronic swelling, neuropathic pain, hypoesthesia, and a positive Tinel's sign suggest persistent nerve involvement, likely affecting the LSCN. The absence of motor deficits and the negative Lasègue sign rule out significant lumbar radiculopathy. This case illustrates the complexity of diagnosing and managing chronic LSCN entrapment, particularly after previous surgical intervention. The combination of electrodiagnostic studies, imaging, and targeted ultrasound-guided injections proved essential for confirming the diagnosis and guiding treatment. Despite previous unsuccessful surgical decompression, the patient achieved significant symptom relief with minimally invasive interventions, highlighting the importance of individualized management strategies.

CONCLUSION

This case underscores the importance of recognizing LSCN entrapment as a potential cause of lateral lower leg pain. Early diagnosis and appropriate management can significantly improve patient outcomes. Increased awareness among clinicians is key to prevent misdiagnosis, ultimately reducing unnecessary treatments and improving patient quality of life.

Statement of Disclosures

None

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