

Background

Overview:

- The case focuses on treatment-induced diabetic neuropathy and utilization of multimodal pain management.
- Chronic neuropathic pain can originate from peripheral or central sources, e.g. diabetic neuropathy, trigeminal neuralgia, spinal cord injury, post-stroke pain, polyneuropathy, and radiculopathy (Vinik et al., 2013).

Diagnosis Challenges:

- Some patients may present with neuropathic pain that remains undiagnosed, even after ruling out common causes.
- Treatment-induced diabetic neuropathy, although rare, should be considered, especially after rapid glycemic control correction (Gibbons & Freeman, 2010).

Condition Characteristics:

- Although it is rare, some patients with long-standing uncontrolled diabetes may experience worsening neuropathy symptoms like pain and autonomic dysfunction with improved glycemic control.

Management Approach:

- A multimodal treatment strategy is essential, incorporating medications, physical therapy, psychological support, and interventional procedures (Tracy & Dyck, 2008).

Case Presentation

Patient Background:

- In 2019, a 19-year-old male with type 1 diabetes on insulin therapy, without good glycemic control, was referred for bilateral lower extremity pain. He reported a burning sensation in a glove-and-stockings distribution, which worsened in cold weather and at night, but was relieved by rest.

Clinical Findings:

- In May 2023, the patient's HbA1c level was elevated at

14.7%, later reduced to 6.7% following the initiation of insulin pump therapy. Diagnostic tests including EMG, spinal MRI, and rheumatologic markers were normal. A skin biopsy revealed reduced nerve fiber density .

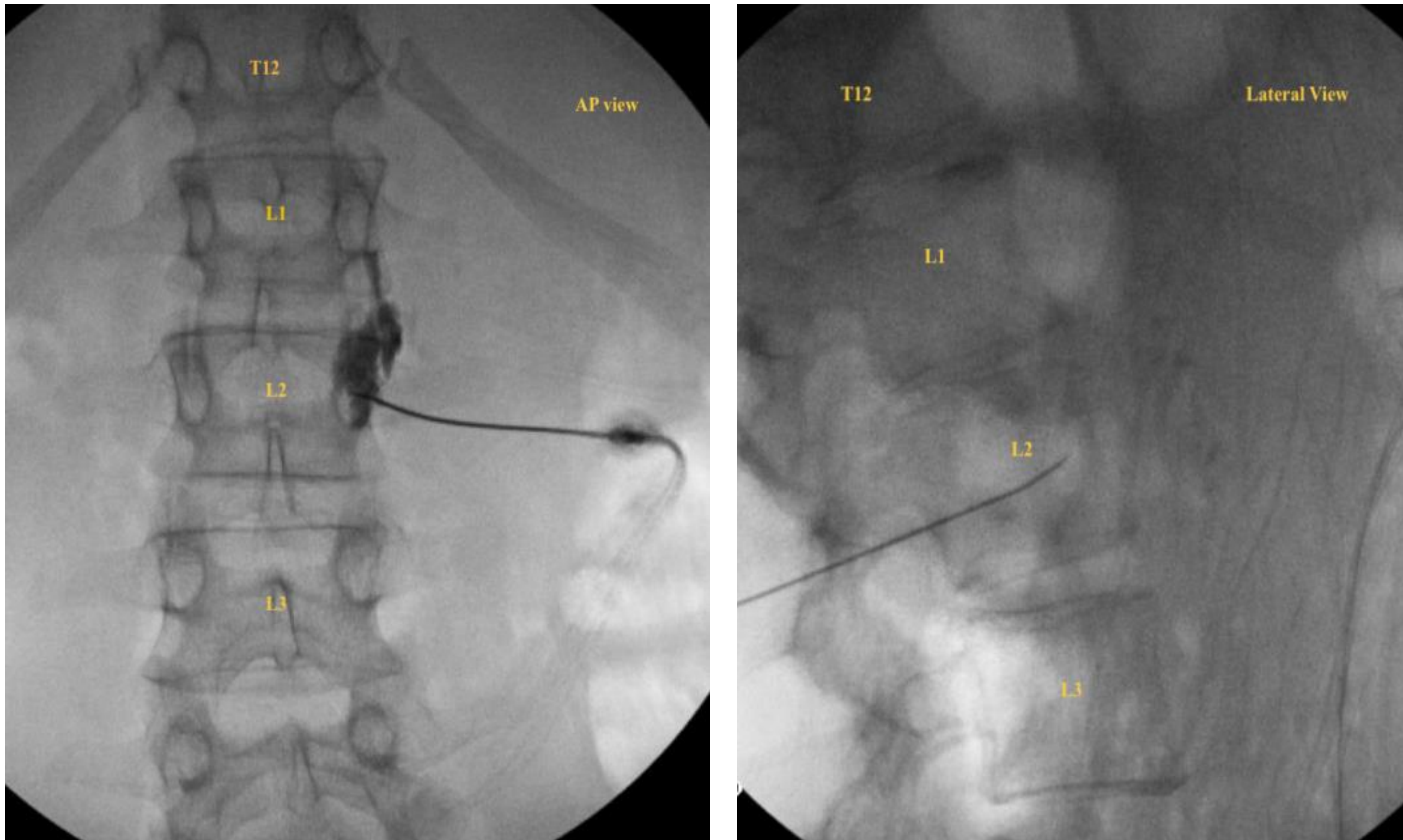
Treatment and Management:

- Initially, the patient's pain was controlled with minimal medication. However, after starting insulin pump therapy in mid-2023, neuropathic pain intensified. A lumbar sympathetic block provided partial relief. Spinal Cord stimulation therapy was also considered.

- Multimodal pharmacologic management included Gabapentin, Pregabalin, Duloxetine, Nortriptyline, Cyclobenzaprine, and opioid analgesics. The patient also engaged in physical therapy and had regular follow-ups with a pain psychologist.

Current Status:

- Now 24 years old, the patient continues ongoing pain management at the pain clinic, showing overall improvement after 9 months of glycemic control. Care is coordinated with an endocrinologist for ongoing insulin adjustments.



Lumbar sympathetic block with AP and lateral view

Discussion

Condition Overview:

- Treatment-induced diabetic neuropathy, or insulin neuritis, is an acute neuropathic condition that can occur after rapid correction of glycemic control in patients with long-standing poor control (Cuenca Hernández et al., 2018; Hwang & Davies, 2016).

Significance:

- Though uncommon, it is an important consideration when diagnosing neuropathic pain, especially in patients experiencing rapid improvement in glycemic control.

Management Strategy:

- Gradual, steady glycemic control is crucial to help reduce the severity of neuropathic symptoms, with close collaboration with an endocrinologist.
- A multimodal pain management approach is advised, including pharmacotherapy, psychotherapy, physical therapy, and interventional procedures such as sympathetic blocks and spinal cord stimulation.

Case- Specific Procedure outcome:

- In this case, the patient experienced complete pain relief for 24 hours following a sympathetic block, but the pain returned with greater intensity afterward. Despite this, the patient’s overall condition improved enough to delay the initiation of spinal cord stimulation therapy.

Bibliography

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