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Severe neuropathic pain with normal electrodiagnostic testing: Small-fiber neuropathy complicated by gastroparesis

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MEDICALLY CHALLENGING CASE
ABSTRACT 2491289

MAIN MESSAGE — **Normal EMG/NCS does not exclude painful small-fiber neuropathy. Skin biopsy and autonomic clues can confirm the diagnosis and guide treatment.**

INTRODUCTION

Painful diabetic small-fiber neuropathy (SFN) may cause debilitating neuropathic pain despite preserved strength and normal routine electrodiagnostic studies. Concurrent autonomic dysfunction may provide an important diagnostic clue while complicating pharmacologic management.

CASE DESCRIPTION

Patient: 70-year-old man with a 16-year history of type 2 diabetes mellitus; HbA1c 8.1%.

Symptoms: 18 months of progressive bilateral foot pain refractory to conventional therapy. He described severe burning pain with intermittent stabbing and electric-shock sensations, tingling, episodic numbness, and contact-evoked allodynia in a symmetric stocking distribution.

Impact: nocturnal pain reached 8/10, disrupted sleep, and reduced walking tolerance from 30 to 10 minutes.

INVESTIGATIONS / RESULTS

NEUROLOGIC EXAMINATION — Preserved strength and reflexes; reduced distal pinprick and temperature sensation; marked plantar mechanical allodynia; preserved vibration and proprioception.

EMG / NCS — Preserved sural responses without large-fiber polyneuropathy or radiculopathy.

SKIN BIOPSY — Distal-leg intraepidermal nerve-fiber density 2.4 fibers/mm (laboratory lower reference limit 5.2), supporting small-fiber neuropathy.

AUTONOMIC / GI EVALUATION — Early satiety, postprandial fullness, nausea, and intermittent vomiting. Gastric-emptying scintigraphy showed 18% retention at 4 hours, consistent with gastroparesis. Evaluation for alternative etiologies was unrevealing.

TREATMENT AND OUTCOME

Gabapentin provided minimal benefit and caused somnolence; duloxetine provided incomplete relief. Gastrointestinal dysmotility further complicated oral medication tolerance and therapeutic optimization.

Revised regimen: pregabalin 75 mg twice daily with duloxetine and topical lidocaine.

8-WEEK FOLLOW-UP — Pain: **8/10 -> 4/10** | Walking tolerance: **10 -> 25 min** | Sleep: **improved**

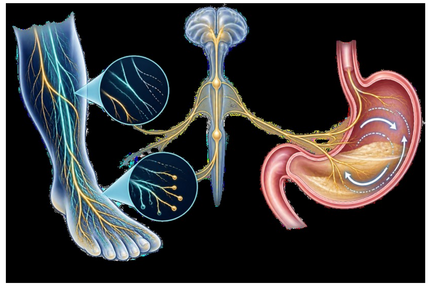
DISCUSSION

This case highlights severe painful SFN despite normal large-fiber electrodiagnostic testing. Burning pain, allodynia, impaired thermal and pinprick sensation, preserved strength, and reduced intraepidermal nerve-fiber density supported the small-fiber phenotype. Coexisting gastroparesis suggested broader autonomic involvement while complicating oral pharmacotherapy.

CONCLUSION

In patients with disproportionate neuropathic pain and unrevealing electrodiagnostic studies, consider SFN. Skin biopsy can objectively confirm the diagnosis, and autonomic symptoms such as gastroparesis can both broaden the phenotype and limit medication tolerance.

CONCEPTUAL ILLUSTRATION



Conceptual schematic of distal small-fiber neuropathy with autonomic involvement / gastroparesis. Not patient imaging.

ETHICS / CONSENT

Written informed consent obtained; identifying information removed. The submitted abstract states that this de-identified single-patient case report is exempt from IRB review under Bankura Sammilani Medical College policy.

SELECTED REFERENCES

Tesfaye S et al. *Diabetes Care*. 2010;33:2285-2293. Lauria G et al. *J Peripher Nerv Syst*. 2010;15:79-92. Devigili G et al. *Expert Rev Neurother*. 2020;20:967-980. Pop-Busui R et al. *Diabetes Care*. 2017;40:136-154. Freeman R. *Handb Clin Neurol*. 2014;126:63-79.