

# THORACIC BOTOX INJECTIONS FOR REFRACTORY NOTALGIA PARESTHETICA

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**Background:** Notalgia paresthetica is a chronic neuropathic pruritus at the thoracic interscapular and paravertebral region.

**Case Report:** A 30-year-old man with a history of diabetes presented to the clinic with left periscapular pain. The patient had chronic, burning, pruritic pain localized to the left mid-thoracic paraspinal region and a well-demarcated hyperpigmentation over the affected area. The patient showed full strength on exam. An MRI scan revealed some degenerative disc disease but no evidence of spinal stenosis. The patient was diagnosed with notalgia paresthetica. He did not respond to conservative management or trigger point injections. After those attempted treatments, he received an injection of botulinum toxin to the left mid-thoracic paraspinals.

**Results:** The patient experienced a complete resolution of symptoms—including pain and pruritus—for 9 to 10 months.

**Conclusions:** Botulinum toxin can be used in refractory cases of notalgia paresthetica, as seen in our case, and result in a 10-month resolution of pain. However, evidence for the use of botulinum toxin as a treatment for this condition is limited and inconsistent.

**Key words:** Notalgia paresthetica, Botox, neuropathic pruritus

## BACKGROUND

Notalgia paresthetica is a chronic neuropathic pruritus at the thoracic interscapular and paravertebral region (1). The pathogenesis of notalgia paresthetica is believed to involve damage or entrapment of the cutaneous branches of the dorsal rami of the thoracic spinal nerves, potentially due to spinal degenerative changes or muscular compressive neuropathy (2,3). Other components to notalgia paresthetica that can assist with the diagnosis include hyperpigmentation over the affected area and the pain being episodic (1,2,4).

## CASE

A 30-year-old man with a history of type 1 diabetes mellitus presented with to the clinic with left periscapular pain, the onset of which occurred 6 years prior. The pain had an insidious onset with no identifiable trigger or history of trauma. Symptoms were localized to the left mid-thoracic paraspinal region and were described as episodic, burning, and pruritic, with associated hyperpigmentation of the skin. The patient reported the pain as 8/10 at worst. He denied any radiation of pain to his upper or lower extremities and reported no associated motor weakness.

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Patient consent for publication: This project is a retrospective case report. All data to be analyzed are already in existence prior to the initiation of the study. No new data will be collected, and no patients will be prospectively screened or asked for their consent. This study qualifies for a waiver of informed consent under 45 CFR 46.116(f), as it involves no more than minimal risk to patients, will not adversely affect the rights or welfare of the patients, and cannot practically be conducted without the waiver. All identifiable information will remain protected and strictly confidential.

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The patient trialed multiple treatment modalities, including topical lidocaine ointment, gabapentin, capsaicin patches, physical therapy, a home exercise program, and intermittent use of oxycodone, with limited symptom relief.

Neurological examination of the patient revealed full strength in both upper and lower extremities. Spurling's and seated slump tests were negative. There was a well-demarcated area of hyperpigmentation over the left mid-thoracic paraspinals. An MRI scan of the thoracic spine showed degenerative disc disease with small disc protrusions in the mid-thoracic spine. No evidence of canal or foraminal stenosis appeared. A subsequent MRI scan of the cervical spine showed no disc herniations or signs of spinal stenosis.

The patient's clinical presentation of chronic, burning, pruritic pain localized to the left mid-thoracic paraspinal region, in the absence of neurological deficits or structural spinal compression, combined with well-demarcated hyperpigmentation over the affected area, led to the diagnosis of notalgia paresthetica.

The initial interventional approach consisted of trigger point injections administered to the upper and lower trapezius, levator scapulae, and rhomboid muscles, using 0.5% ropivacaine and triamcinolone (specifically, Kenalog). This approach yielded less than 25% relief. Next, a series of botulinum toxin injections totaling 140 units was administered into the patient's left mid-thoracic paraspinals.

## DISCUSSION

The patient experienced a complete resolution of symptoms—including pain and pruritus—for 9 to 10 months. Later, the patient requested a repeat injection due to the gradual return of symptoms around the 10-month mark.

## CONCLUSIONS

Notalgia paresthetica is a chronic neuropathic pruritus

at the thoracic interscapular and paravertebral region. The pathogenesis of notalgia paresthetica is believed to involve damage or entrapment of the cutaneous branches of the dorsal rami of the thoracic spinal nerves, potentially due to spinal degenerative changes or muscular compressive neuropathy.

The complexity of notalgia paresthetica often makes the treatment thereof challenging. The condition exhibits varying responses to both pharmacological and nonpharmacological interventions (4). Botulinum toxin has been considered in refractory cases in which conventional therapies have failed (4,5). Previous clinical studies have demonstrated the effectiveness of botulinum toxin in reducing symptoms of notalgia paresthetica; however, the evidence is limited to a few studies, and results have been inconsistent (4,5). A randomized, double-blind trial by Ranoux et al showed that botulinum toxin reduced spontaneous pain intensity and improved neuropathic symptoms in patients who had notalgia paresthetica, with effects lasting up to 14 weeks after the injections (6). Our case is unique because it highlights a patient who experienced the complete resolution of notalgia paresthetica symptoms for 9 to 10 months after one botulinum toxin injection.

## Contributions

- Parker Nguyen, MD: contributed to case analysis, literature review, and manuscript drafting.
- Rebecca Cox, MD: performed final edits and revisions of the manuscript.
- Ahish Chitneni, DO: assisted with case interpretation and contributed to manuscript preparation.
- Nasser Ayyad, DO: principal investigator and attending physician; provided clinical oversight and was the treating physician for the patient described in the case report.

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