Two-step Approach with OnabotulinumtoxinA: Intradermal & Intramuscular Infiltrations for T8-T12 Chronic Post Herpetic Neuralgia: A Case Report

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INTRODUCTION

Post Herpetic Neuralgia (PHN) is a potential late sequel from varicella-zoster virus (VZV) infection, and is a phenomenon facilitated by immunocompromised states as well as in aging. PHN is mediated by the reactivation of virus residing in the dorsal root ganglia of cranial or spinal nerves, and being transported along peripheral nerves can induce an acute neuritis. Histologic findings include hemorrhagic inflammation of the peripheral nerve, dorsal root, and dorsal root ganglion. Regional pain is then mediated by inflammation induced from the movement of viral particles (from sensory nerves to skin and subcutaneous tissues) and by damage to nerve structures. In US, one of every three people can develop herpes zoster during their lifetime. Typical symptoms include intense pain along the affected dermatome, of burning/stabbing qualities and associated sensorial deficits (allodynia, anesthesia, affectation to thermal/pressure/vibration modalities). Diagnosis can be established by clinical exam, however in cases lacking skin changes or unclear past history of VZV infection, may warrant CSF sampling for a VZV PCR analysis. We are presenting a 65 y/o male patient with history of chronic right T8-T12 post herpetic neuralgia with persistent symptoms despite previous conservative treatment.

CASE PRESENTATION

Case of a 65 year old male patient with chronic severe refractory post-herpetic neuralgia (PHN) along the right T8-T12 dermatomal distribution. Patient's pain was originally localized at the right inferior abdominal quadrant in association to bloating/fullness sensation, with pain irradiating to the right flank; he also referred constant discomfort and dull pain at the right thoracolumbar area. His pain had severe aching and burning qualities, and examination remarkable for allodynia and hyperpathia. Pain had remained refractory to standard multimodal treatments with physical modalities, topical and oral medications, including narcotics. Patient received OnabotulinumtoxinA infiltrations with complete resolution of symptoms.

PROCEDURE

We describe the patient's clinical course after sequential infiltrations with OnabotulimumtoxinA.

I. For the initial procedure, patient was scheduled to undergo intradermal OnabotulinumtoxinA infiltration at affected/symptomatic anterior right T8-T12 dermatomes of the abdominal wall and flank. Outcomes were a diminution of pain intensity and neuropathic qualities.
II. Eventually, after 3 months, thr patient was scheduled to a second infiltration procedure for which a variation was proposed: to perform a two-step method with intradermal infiltration of OnabotulinumtoxinA at affected dermatomes anteriorly and posteriorly at paracentral lines, as well as intramuscular EMG-guided injection at corresponding paraspinal T8-T12 segments. The outcome after this second procedure was full resolution of pain, dysesthesias, and hyperpathia that has been sustained for over a year, and has not required repeating the OnabotulinumtoxinA infiltrations.

OnabotulinumtoxinA Injection

ASSESSEMENT

Current guidelines recommend treatment of post herpetic neuralgia in a hierarchical manner, with calcium channel α2-δ ligands (gabapentin and pregabalin), tricyclic antidepressants (amitriptyline, nortriptyline, or desipramine), or topical as a safe method to treat and prevent further comorbidities.Sometimes above mentioned treatments are unresponsive and the use of Botulinum toxin has been use with successful results, as in our patient.

To our knowledge, this is a unique case describing a two-step method for combined intramuscular & intradermal infiltrations with OnabotulinumtoxinA where full resolution of PHN symptoms was attained with sustained benefit. The patient's clinical course suggests that a progressive pain modulation was facilitated once the two-step approach was implemented. We believe this two-step approach targeted posterior ramii innervation to the skin on posterior back and to the paraspinal musculature, as corresponding to intradermal & intramuscular injection sites. We hypothesize this might mediate pain effectively by optimizing regional modulation of peripheral sensitization pain pathways, with subsequent reduction of central pain pathways.

CONCLUSION

Chronic Post Herpetic Neuralgia can be characterized by severe pain, refractory to conventional treatments. A two-step approach for intradermal & intramuscular application of OnabotulimumtoxinA at affected sclerotome (dermatome + myotome) may be implemented and successfully improve patient outcomes.

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