



Introduction

Complex Regional Pain Syndrome (CRPS) is a rare chronic pain disorder, classified as type 1, without confirmed nerve injury, or type 2, with documented nerve damage. Diagnosis using the Budapest criteria requires clinical findings in at least three of four domains: sensory, vasomotor, sudomotor/edema, and motor/trophic. We present a case of early onset CRPS of upper extremity successfully managed with continuous perineural catheter infusion.

Case Presentation

A 47-year-old Caucasian female with a history of pseudotumor cerebri, depression, and Addison’s disease on chronic steroids was admitted for inpatient management of sudden onset, severe right-hand pain of two weeks’ duration. She described disabling burning and stabbing pain primarily over the dorsal hand, accompanied by edema and allodynia to touch and cold, and restricted wrist motion. MRI of wrist demonstrated a nondisplaced fracture of the 4th metacarpal with adjacent soft tissue edema that did not require Orthopedic intervention. Acute pain service was consulted for suspected CRPS. An initial stellate ganglion block (SGB) provided minimal relief, and a supraclavicular perineural catheter was subsequently placed, resulting in significant pain improvement. Per the Chronic pain service (CPS) recommendations, cervical spine and brachial plexus MRI were obtained after catheter removal, revealing abnormal enhancement and edema of the brachial plexus, the axillary nerves and distal trunks, consistent with chronic traumatic neuropathy or an inflammatory process. Subsequently, a costoclavicular catheter was placed but dislodged, followed by an infraclavicular catheter placement. Adequate pain control was achieved with continuous perineural catheter infusion regardless of anatomical location over a two -week hospitalization.

Case Presentation Con’t

Adjunctive therapies included gabapentin, nortriptyline, baclofen, methadone, oxycodone, diazepam and physical therapy. As symptoms improved, the perineural catheter infusion was discontinued. A subsequent SGB was performed under ketamine infusion per CPS recommendation. She was discharged home with acceptable pain control on oral medications.

Images



Discussion

This case highlights the therapeutic challenges of CRPS and the importance of early recognition and multidisciplinary management to optimize outcomes. While sympathetic nerve blocks, such as the stellate ganglion block, or neurostimulation are frequently utilized for the upper extremity, there is limited literature on the efficacy of continuous brachial plexus perineural infusions. In this case, a continuous catheter provided substantial symptomatic relief. Although the long-term clinical efficacy of continuous brachial plexus infusions has not been well-documented, our experience suggests it may serve as an effective, targeted component of a multimodal strategy for managing acute or early-onset CRPS alongside the current standard of care

References

1. Misidou C, Papagoras C. Complex Regional Pain Syndrome: An update. Mediterr J Rheumatol. 2019 Mar 28;30(1):16-25. doi: 10.31138/mjr.30.1.16. PMID: 32185338; PMCID: PMC7045919.
2. Toshniwal G, Sunder R, Thomas R, Dureja GP. Management of complex regional pain syndrome type I in upper extremity-evaluation of continuous stellate ganglion block and continuous infraclavicular brachial plexus block: a pilot study. Pain Med. 2012 Jan;13(1):96-106. doi: 10.1111/j.1526-4637.2011.01285.x. Epub 2011 Dec 5. PMID: 22142381.
3. Purohit G, Bhandari B, Kumar A, Talawar P, Gupta S, Atter P. Efficacy of stellate ganglion interventions for complex regional pain syndrome in the upper limb-A systematic review and meta-analysis. Indian J Anaesth. 2023 Aug;67(8):675-684. doi: 10.4103/ija.ija_204_23. Epub 2023 Aug 15. PMID: 37693027; PMCID: PMC10488587.
4. Chang MC, Park D. Algorithm for multimodal medication therapy in patients with complex regional pain syndrome. J Yeungnam Med Sci. 2023 Nov;40(Suppl):S125-S128. doi: 10.12701/jyms.2023.00360. Epub 2023 Jul 12. PMID: 37434359; PMCID: PMC10718613