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Introduction

- Acute pain from traumatic rib fractures is typically moderate to severe, with 70% of patients requiring opioid medications up to 30 days post-injury, and has been associated with increased morbidity and mortality.¹
- USG-PC as a treatment for acute rib fracture pain has been reported to provide prolonged analgesia for rib fractures in select patients, with some cases endorsing 10-30 days of pain relief.²
- To date, the use of cryoneurolysis as a treatment for acute rib fracture pain has been reported on two occasions, only one of which utilized USG-PC.^{2,3}

Methods

- Of 116 patients treated with USG-PC, we identified six patients who received USG-PC for acute rib fracture pain.
- USGPC was performed as previously described by our group.⁴

Case 1: 93 yo F pw fx of the R 6th-9th ribs after mechanical fall. On HD 1, the patient reported 9/10 static pain and was treated with RA. On HD 4, an USG-IC of the 5th-9th R ICN was performed. The next day, the patient reported 4/10 static and 5/10 dynamic pain. Moreover, he was able to cough despite some discomfort. The patient was discharged with non-opioid analgesics.

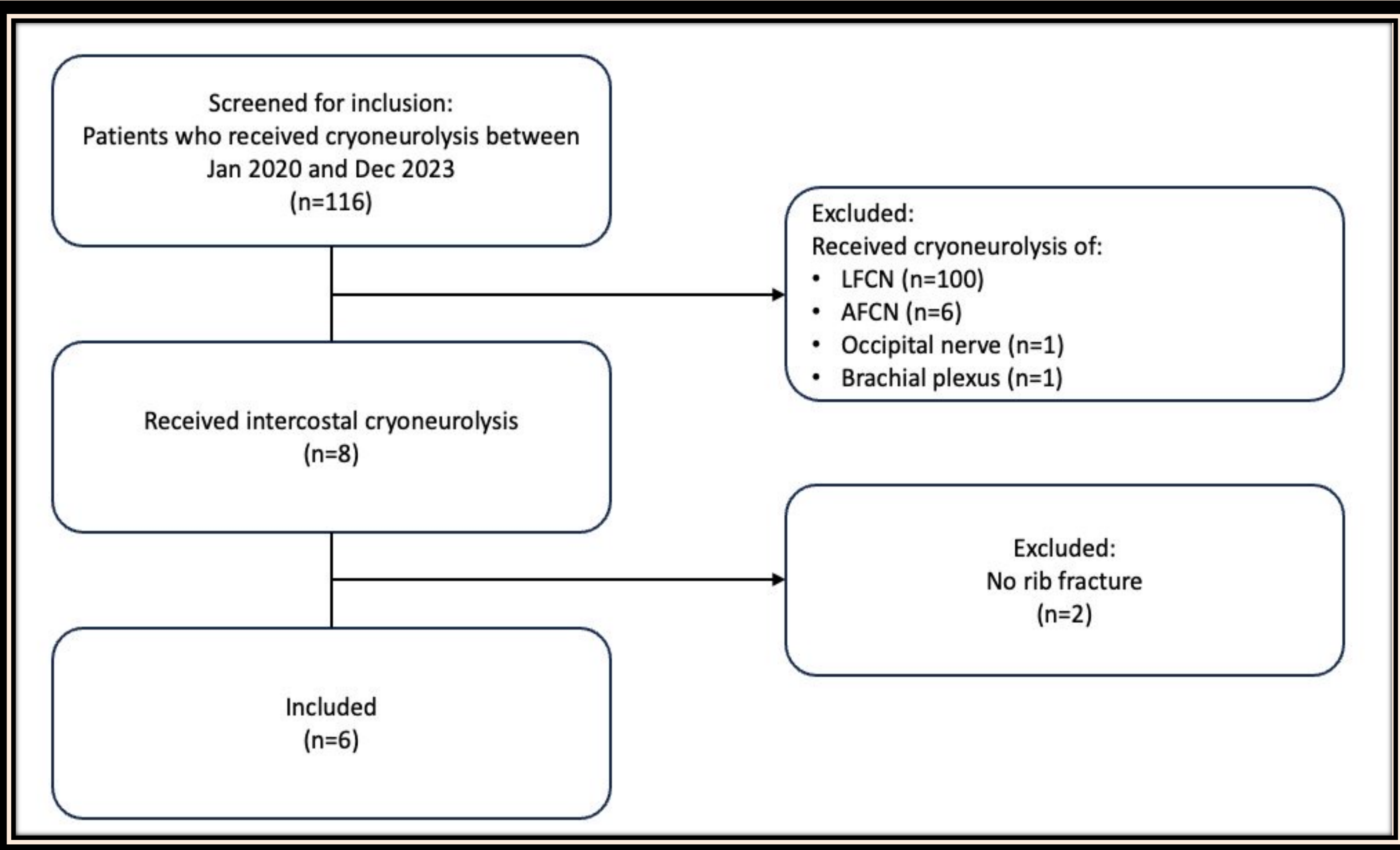
Case 2: 32 yo F pw fx of the L 10th-12th ribs following auto vs ped. Patient reported 9/10 static pain. On HD 1, USGPC of the 10th-12th L ICN was performed in addition to RA. The following day, the patient reported 2/10 static and 3/10 dynamic pain.

Case 3: 55 yo F pw polytrauma following MVC. She sustained fx of the R 1st-7th ribs, left 1st rib, superior/inferior pubic rami, and left sacrum. On HD 1 pain was treated with RA. On HD 2, USGPC of the 3rd-7th R ICN was performed. Post-procedure pain scores were not recorded, however, the pt reported a resolution of lateral chest wall pain. IS values increased from 500 ml to 1,500 ml.

Case 4: 87 yo F pw with fx of the R 7th-11th ribs after a syncopal fall. The patient reported 9/10 static pain. On HD 1 pain was treated with RA. USGPC of the 6th-11th R ICN was performed on HD 3. Following USG-IC, the pt reported 2/10 static and 5/10 dynamic pain. IS values increased from 500 ml to 1,500 ml. She was discharged without any opioid analgesics.

Case 5: 46 yo F transfer with polytrauma following MVC. She sustained fx of the R tibia, sternal body, and L 7th-9th ribs. On HD 3, USGPC of the 4th-9th L ICN was performed. The following day, the patient reported 0/10 static and 2/10 dynamic pain. She did not report any increase in her pain in the following month.

Case 6: 62 yo M pw with fx of the L 4th-6th ribs and L scapular fx after crush injury. The patient reported 10/10 static pain. On HD 2, pain was treated with RA. USGPC of the 3-6th L ICN and L suprascapular N was performed on HD 3. Following USG-IC, the pt reported 3/10 static and 4/10 dynamic pain. IS values increased from 1000 ml to 1,500 ml.



Discussion

- Due to the pain associated with rib fractures and the limited duration of local anesthetic-driven nerve blocks, USG-PC may be an effective alternative that provides longer-lasting relief while preserving the nerve, allowing for restoration of sensation and function after the block resolves.⁴
- Upon surveying our faculty, this procedure is not more widely used due to the duration of the procedure and the corresponding lack of resources. Triggers for performing USGPC were severe frailty, flail chest, opioid intolerance, and availability of staff.

Conclusion

- With this case series, we add six cases of improved management of acute traumatic rib fracture pain with USG-PC.
- In order to fully evaluate the efficacy of this procedure, large randomized control trials will be required.

References:

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