

A Successful Treatment of Complex Regional Pain Syndrome Type 2

Claire Cooper DO, Brendan Astley MD

MetroHealth Medical Center affiliated with Case Western Reserve University School of Medicine, Cleveland, Ohio



SCHOOL OF MEDICINE
CASE WESTERN RESERVE
UNIVERSITY

HISTORY

- 59-year-old male with a history of class 2 obesity, depression, diabetes mellitus, hypertension, and intractable migraine with aura.
- MVC in 2017, resulting in a C4 and clavicular fractures, as well as C7-8 root avulsion causing severe right arm paralysis and pain leading him to be referred to pain management.

EXAMINATION AND WORKUP

- Right Shoulder: ROM limited secondary to pain, strength 0/5 diffusely in the right upper extremity and absent biceps and brachioradialis reflexes on the right.
- Repeat MR brachial plexus and EMG showed findings most suggestive of a polyradiculopathy below the C4 level with superimposed right brachial plexopathy.

INITIAL TREATMENT ATTEMPTS

- attempted several different modes of physical therapy including aqua therapy and was tried on multiple different medications for his pain including Gabapentin, Cymbalta, Fentanyl patches and Effexor with little relief of pain.
- Right sided stellate ganglion block without relief of the patient's pain.
- Due to the lack of success with the ganglion block the patient refused further injections/procedures in attempts to alleviate his pain, including the recommendation of a peripheral nerve stimulator.

TREATMENT CONTINUED

- One year after the motor vehicle collision the patient had a spinal cord simulator placed (5/2018) without substantial relief of his symptoms.
- This led the patient to have an elective right trans humeral amputation and targeted muscle reinnervation with glenohumeral arthrodesis three months later (8/2018). However, this did not fully relieve the right arm pain as he continued to have multiple visits to the emergency department for further pain treatment (primarily morphine intermuscular).
- Five years after the spinal cord placement, the patient underwent the implantation of an intrathecal pump with entry site at the L2-3 level and catheter tip at the right C3-4 level.

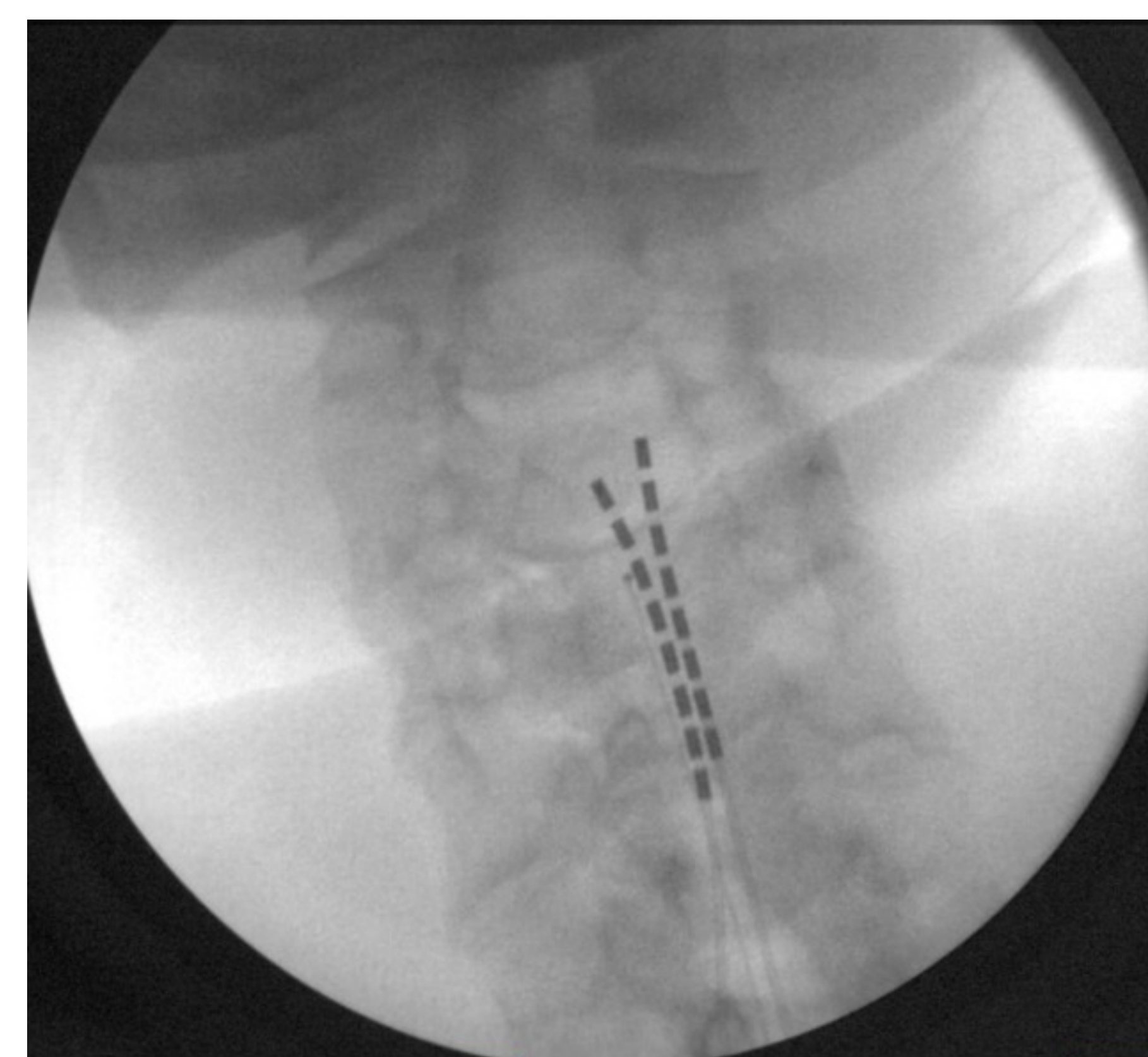


Figure 1: A) Entry site of catheter at the L2-3 level. B) Tip of the catheter at the C3-4, right level as well as electrodes within cervical spine.

OUTCOME

- After implantation, the patient had significantly fewer trips to the ED for breakthrough pain and has had a significant improvement of his quality of life.

DISCUSSION

- Complex regional pain syndrome (CRPS2) is a relatively uncommon condition with confirmed nerve injury, that can, unfortunately, result in severe, chronic pain.
- Minimal research exists on the management of CRPS and there are no specific consensus guidelines for treatment.^{1,2,3,4}
- Treatments usually include PT, medications, and multiple different interventions.¹ Medications can include bisphosphonates, steroids, gabapentin, and naltrexone.¹ Interventions can include ketamine infusions, sympathetic ganglion blocks, spinal cord stimulators, and intrathecal infusions.^{2,3,4} However, there is little data regarding the efficacy of any of these modalities for treating this complex pain syndrome.
- This case report showcases a patient for which the combination of multiple different pain treatment modalities including a SCS and ITP was effective in relieving his pain.

REFERENCES

- Lundborg C;Dahm P;Nitescu P;Appelgren L;Curelaru I; Clinical experience using intrathecal (IT) Bupivacaine infusion in three patients with complex regional pain syndrome type I (CRPS-I). Acta anaesthesiologica Scandinavica. Accessed October 1, 2023. <https://pubmed.ncbi.nlm.nih.gov/10408823/>.
- CR; KMH. Spinal cord stimulation in complex regional pain syndrome type 2. Danish medical journal. Accessed October 1, 2023. <https://pubmed.ncbi.nlm.nih.gov/35781126/>.
- Yoo Y;Lee CS;Kim J;Jo D;Moon JY; Botulinum toxin type A for lumbar sympathetic ganglion block in complex regional pain syndrome: A randomized trial. Anesthesiology. Accessed October 1, 2023. <https://pubmed.ncbi.nlm.nih.gov/34890455/>.
- Taylor SS;Noor N;Urits I;Paladini A;Sadhu MS;Gibb C;Carlson T;Myreik D;Varrassi G;Viswanath O; Complex regional pain syndrome: A comprehensive review. Pain and therapy. Accessed October 1, 2023. <https://pubmed.ncbi.nlm.nih.gov/34165690/>.