Erector Spinae Plane Block for Central Pain related to Spinal Cord Ependymoma: A Case Presentation

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Introduction

Originally described in the management of severe thoracic neuropathic pain by Forero et al in 2016, the erector spinae plane block (ESPB) has gained increasing interest for its high therapeutic efficacy, opioid sparing analgesic benefit and favorable side effect profile [1,2]. Although the ESPB has been reported in the management of acute and chronic refractory pain, particularly of the thoracoabdominal region, the full extent of its use is yet to be completely elucidated [3-5].

The aim of this presentation is to describe the successful use of ultrasound guided ESPB in the management of a patient with central pain related to cervical ependymoma and syrinx of the spinal cord.

Case Description

A 50-year-old female presented to our pain clinic with a 2-year history of progressively worsening upper back shooting pain radiating to the ribs on her right side with associated pain in her right shoulder, right arm and right leg. She also reported numbness, tingling and weakness particularly of the right lower extremity. Symptoms started after she was found to have a large spinal cord syrinx with a cervical spinal cord ependymoma and metastasis to the conus. Following that diagnosis, she had undergone radiation therapy to the entire spinal cord as well as surgical removal of the ependymoma. Various medications and therapies (such as gabapentin, pregabalin, duloxetine, physical therapy) were tried for the pain with less than satisfactory relief and/or intolerable side effects. On physical exam, there was significant tenderness in the right thoracic region at T8-T11 levels.

Postoperative cervical spine magnetic resonance imaging (MRI) was significant for a large syrinx extending from the distal portion of the medulla into the thoracic region but most significant at C4-C6. Lumbar spine MRI showed subtle mild posterior disc bulge at L4 -L5 without stenosis. A diagnosis of central pain related to cervical ependymoma and spinal cord syrinx resulting in an intercostal neuralgia picture was made. The patient was counselled and scheduled for an ultrasound guided right sided ESPB for diagnostic and therapeutic purposes.

Method

On the day of the procedure, the patient was placed in a seated position with back exposed. Under aseptic conditions, an ultrasound guided right sided ESPB was performed at T8 using a 22G Stimuplex needle. A solution containing 20 ml of 0.125% bupivacaine with 40 mg methylprednisolone was injected into the plane between the erector spinae muscle and T8 transverse process with lifting of the erector spinae muscle observed. She tolerated the procedure well and reported more than 80% pain relief prior to discharge home. This improvement was sustained during her clinic visit 4 weeks later where she reported a sustained 90% improvement of her pain and 90% improvement in functionality of her right side.

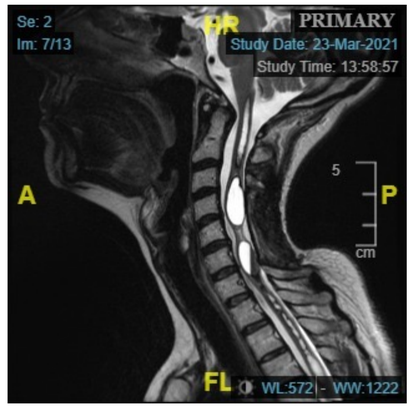

Figure 1: Cervical spine MRI showing a large syrinx extending from the cervico-medullary junction into the thoracic spine. At C4-C5 and C6 levels, the syrinx is much larger in volume. Findings consistent with prior multi-level posterior cervical laminectomy also noted.

Figure 2: Ultrasound-guided right sided Erector Spinae Block performed at the T8 level.

Discussion

Since it was described, studies have been conducted to determine the spectrum of efficacy, mechanism of action and safety/side effect profile of the ultrasound guided ESPB. In literature, it has found encouraging use in postoperative pain management of thoracic and abdominal surgeries in the multimodal approach to analgesia with the aim of reducing opioid consumption [1-5].

Our patient had symptoms and signs of central pain and intercostal neuralgia related to cervical ependymoma and spinal cord syrinx. The goal of the erector spinae block was to reduce her pain severity and improve her quality of life. The ESPB provided our patient with significant and sustained pain relief while improving her functionality. She reported no side effects following the procedure.

To the best of our knowledge, this is the first successful use of the ultrasound guided ESPB , a peripheral nerve block, in the management of pain due to a central nervous system process.

Conclusion

In conclusion, the ultrasound-guided ESPB may be a beneficial therapeutic option in the management of certain central pain syndrome without causing significant side effects.

References

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