Introduction

A growing body of evidence has established that the postsynaptic dorsal column pathway (PSDC) of the spinal cord conveys visceral nociceptive pain to the brain. The axons ascend along the medial aspect of the dorsal columns. Punctate Midline Myelotomy (PMM) is a surgical procedure that specifically interrupts the PSDC with a precise transverse cut thereby prevent the transmission of visceral pain signals and provide symptomatic relief to patients. It has proven effective in patients with cancer and benign gut related visceral pain, but its benefits for chronic visceral pain of benign urologic origin remains unclear.

Case Presentation

We present a patient with a 2-year history of intractable left sided flank pain radiating to the groin. The pain started with a large ureteral calculus and became chronic after its treatment by lithotripsy. The pain was severe and became worse with activity and urination. The patient underwent several operations to address the pain including diagnostic laparoscopy, total abdominal hysterectomy and bilateral Salpingo-oophorectomy, stenting of the affected ureter, all with no success. Previously, she had been an avid runner, but became unable to perform because of the pain. The patient was offered treatment by intrathecal pain pump and spinal stimulator but refused any implanted device. The patient underwent a thoracic (T 7) PMM which resulted in complete resolution of her pain. Post op, she initially noted subjective mild numbness in the left side of the vagina and the left leg and foot but remained functionally normal as to strength, gait, temperature and position sense, extremity strength, bowel and bladder control and sexual function.

At eight weeks, she remained pain free, was able to discontinue all narcotics, and the subjective “numbness” had largely abated. She returned to running with no sense of pain. We present specifically the postsynaptic dorsal column visceral pain pathway and its role in the posterior funiculus that signals visceral pain. At 50x, shows the midline where the PMM will take place.

Fig. 1 Intra-operative microscopic pictures [A] (30x) shows the contour of the spinal cord. [B] (50x) shows the midline where the PMM will take place.

At eight weeks, she remained pain free, was able to discontinue all narcotics, and the subjective “numbness” had largely abated. She returned to running with no sense of disability. Neurological exam remained normal except for decreased vibratory sensations on the left toe pads.

Fig. 2 Intra-operative microscopic picture [50x] shows the defect created by the punctate midline myelotomy.

Fig. 3 Postoperative MRI T1 weighted [axial view] that shows the the defect created by the punctate midline myelotomy (arrow).

Conclusion

Although ablative procedures for chronic visceral pain should be considered only with great caution, it does appear that the PMM operation may help to relieve severe, intractable, benign visceral urologic pain.

References

- Zaid Aljuboori, MD, Tyler Ball, MD, Haring Nauta, MD, PhD. Punctate Midline Myelotomy for Intractable Unilateral Ureteral Pain, a Case Report. Department of Neurological Surgery, University of Louisville.* Corresponding author: Zaid.aljuboori@yahoo.com

- Although ablative procedures for chronic visceral pain should be considered only with great caution, it does appear that the PMM operation may help to relieve severe, intractable, benign visceral urologic pain.