

Caudal Epidural for Pain Management of Prostate Cancer

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This report has never been presented anywhere.

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ABSTRACT

Prostate cancer is the second commonest cancer found in men. Pain can occur in both early and advanced stages of prostate cancer, with an incidence of 30-50%. The pain can be caused directly by the cancer or related to the cancer treatment. Currently, pain in prostate cancer is managed with surgery, medication, radiotherapy or chemotherapy. It can also be managed by intra-thecal morphine, psoas sheet catheter and superior hypogastric block. However, all these procedures involve risks. We present a case of Stage 4 Prostate Cancer who presented with severe lower back pain. We performed a caudal epidural, which was very successful to reduce the patient's pain and improve his quality of life. We recommend a caudal epidural should be considered as an option to manage metastatic bone pain in prostate cancer patients.

INTRODUCTION

Prostate cancer is the second commonest cancer found in men.^[1] This cancer is suspected in men over 50 years of age, presenting with lower urinary tract symptoms, hematuria or erectile dysfunction.^[2] A digital rectal examination and a blood investigation of prostate specific antigen (PSA) will confirm the diagnosis.

Pain can occur in both early and advanced stages of prostate cancer, with an incidence of 30-50%.^[3] The pain can be caused directly by the cancer or related to the cancer treatment.^[4] The four main goals of pain management and palliative care are: prolonging survival, optimizing comfort, optimizing function and relieving pain.^[5] Currently, pain in prostate cancer is managed with surgery, medication, radiotherapy or chemotherapy. For progressive tumors involving the sacral plexus, an intra-thecal morphine with local anaesthetic agents will be beneficial to patients.^[6] If the tumor has infiltrated the lumbar plexus, local anaesthetic agents through a psoas sheet catheter will be appropriate. A superior hypogastric block may also help reduce the pain in prostate cancer. However, all these procedures involve risks.

CASE PRESENTATION

A 72-year-old man, diagnosed with stage 4 prostate cancer,

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presented to the Emergency Department complaining of severe lower back pain. The back pain started 6 months ago, initially only occurring occasionally, but became worse over the last few weeks. Currently, his pain was localized to the lower back, non-radiating, with a pain score of 10 over 10. There was absence of sensory, motor and bladder or bowel incontinence. On examination, his pain was at the mid-spine area of his sacral region.

The latest CT Scan of the abdomen revealed an enhancing mass measuring 4 x 4.5 cm in the lower pole of the left kidney. There were also masses in the liver, right lung and ala of the sacrum. Bone metastasis was seen in the sacrum, left pubic ramus and T12, L4 and L5 vertebral bodies. (Figure 1). An MRI scan of the lumbar spine was done, revealing lesions at T12, L4 and L5 with no canal stenosis. No spinal cord compression was seen.

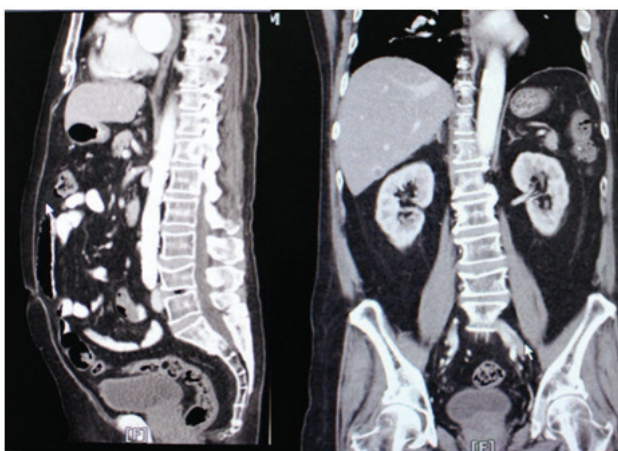


FIGURE 1: CT Scan abdomen of the patient

The initial plan was intrathecal morphine injection. However, the patient had a history of severe hallucinations and restlessness when he had oral morphine for his pain control several months ago. He also had an interlaminar epidural done several months ago at a different hospital, which was not helpful in his pain management.

After discussing with the patient, he did not agree on superior hypogastric block or a repeat of the interlaminar epidural. However, he did agree to try caudal epidural.

The patient was put in a prone position. After appropriate cleaning and draping, a 22-G needle was introduced through the sacral hiatus in lateral fluoroscopic view. The needle tip was positioned just below the S3 in an Antero-posterior (AP) fluoroscopic view. After negative aspiration for cerebrospinal fluid (CSF), 3 mls of omnipaque contrast was injected, which revealed a Christmas tree pattern on the fluoroscopy view. (Figure 2)

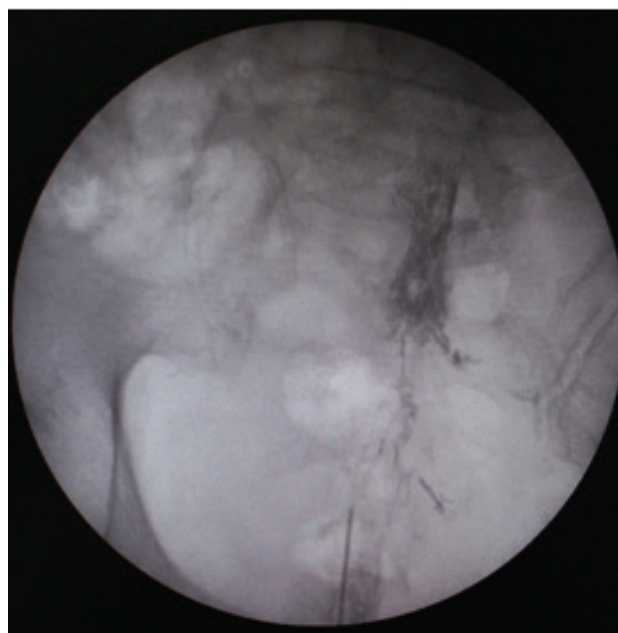


FIGURE 2: Christmas tree pattern on fluoroscopy view

Fifteen mls of 0.25% Chirocaine with 40mg of Triamcinolone Acetonide was slowly injected into the epidural space under continuous fluoroscopy. The patient was asked to inform if he had severe headache, change of field of vision or worsening pain during the injection.

The patient had immediate 100% pain relief after the procedure, which lasted for 3 months.

DISCUSSION

Our patient presented with lower back pain. This can occur in 7% of patients with prostate cancer.^[7] This may be due to the spinal cord compression caused by bone

metastasis via the paravertebral venous plexus.

There are some published cases on the use of caudal epidural for pelvic cancer pain.^[8-10] Caudal epidural block involves placing a needle through the sacral hiatus to deliver medications into the epidural space.^[11] The common medication used is local anaesthesia and corticosteroids.

Corticosteroids work by the abolition of the limiting step by the enzyme PLA2 to liberate arachidonic acid from cell membranes. Arachidonic acid is involved in the up-regulation of cyclo-oxygenase and lipoxygenase enzyme production. These then increase the levels of the hyperalgesic prostaglandins, thromboxanes, and leucotrienes which are associated with the causation of inflammation and pain. Corticosteroids will reduce these hyperalgesic effects.^[12]

Caudal epidural can be done either as a landmark-based blind technique, fluoroscopy or ultrasonography.

BLIND CAUDAL EPIDURAL BLOCK

This technique was initially used for children, with a success rate of 96%.^[13] In a prone or lateral position, the sacral cornua can be palpated as bony prominences. The sacral hiatus is seen as a dimple in between these 2 bony prominences. A needle is inserted in 45 degrees, until a loss of resistance is felt, which means the sacrococcygeal ligament (SCL) is penetrated. However, there is a miss rate of 26% despite experienced hands.^[14]

FLUOROSCOPY GUIDED CAUDAL EPIDURAL BLOCK

The patient is placed in a prone position. In lateral view of fluoroscopy, the sacral hiatus is identified as a sudden drop off at the end of S4 lamina.^[15] The needle position can be confirmed by injecting contrast medium under fluoroscopy. The success rate of caudal epidural has greatly improved with fluoroscopy.^[16] This technique is considered the gold standard for caudal epidural.^[11]

ULTRASOUND GUIDED CAUDAL EPIDURAL BLOCK

The success rate of this technique has been reportedly to be very high.^[17] The patient is usually placed in a lateral or prone position. A liner transducer is sufficient for this procedure. The probe is first placed transversely at the midline to obtain the transverse view of sacral hiatus. The sacral cornua is identified as two hyperechoic structures, and there will be 2 band-like hyperechoic structures also seen between the sacral cornua. The superficial band-like structure is the SCL. Once identified, the probe will be rotated 90 degrees to obtain a longitudinal view of the sacral hiatus, and the needle is inserted. However, there are complications of caudal epidural. These complications include meningitis, epidural hematoma, back pain, post-dural puncture headache and subdural injection.^[18]

Prior to administering caudal epidural, contraindications to the procedure should be looked at. The contraindications for caudal epidural include infection at the site of infection, pilonidal cyst, coagulopathy and congenital anomaly of the spine.^[19]

CONCLUSION

Caudal epidural is an effective way to manage severe back pain in patients with advanced prostate cancer. This would bring a great relieve to cancer patients. However, patient needs to be explained regarding the procedure, and all contraindications need to be ruled out prior to the caudal epidural.

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