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Original Research Paper

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LUMBAR EPIDURAL STEROID FOR SUCCESSFUL PAIN MANAGEMENT OF METASTATIC COMPRESSIVE NEUROPATHY WITH SEVERE DYSPNEA.

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ABSTRACT Symptomatic lumbar spine metastasis occurs in 27% of prostate cancer patients with pain being the initial presentation with a high propensity to metastasize to bone and spine. 68 years old patient of carcinoma prostate with compression neuropathy due to metastasis at L4 vertebral body, presented with subacute onset of low back pain with bilateral radiculopathy and inability to walk (grade 3/5 motor power) and dyspnea grade 4 because of COPD. The patient had inadequate pain relief while on combination of oral tramadol and paracetamol. Lumbar epidural steroid was given at L2–3 intervertebral space. After 4 weeks the patient came walking with improvement in pain as well as dyspnea. Epidural steroid injection can be effective in patients with malignant compressive neuropathy pain when other conventional modalities provide inadequate analgesia.

KEYWORDS : Epidural Steroid, Prostate Cancer, Neuropathy

CASE REPORT :

Malignant spinal metastasis usually presents with either back pain or radicular pain even before onset of neurological deficit or bowel/bladder sphincter compromise.[1,2] Pain is caused by tumor infiltration of vertebral body, intervertebral foramen or compression of meninges, nerve roots or spinal cord. In patients with severe pain, who are on polypharmacy and cannot tolerate morphine, one may consider use of neuraxial interventions. Epidural steroid injection. This mode of analgesic delivery has to be carefully planned so as to avoid using the epidural or spinal interspace involved with malignancy. Generally epidural needle is inserted one or two space higher than the known level of malignancy.[3,4] The goal of such injections is to deliver the active medication with minimal systemic effects (vs. oral steroids) as close as possible to the target tissue. It may give temporary/short term /permanent relief from pain and can improve the quality of life. The present case highlights a real life clinical scenario where lumbar epidural steroid helped a 68 years who was diagnosed with advanced cancer prostate with metastatic compressive neuropathy. Patient presented to pain clinic, sitting in wheel chair with gradually increasing pain in both lower limbs for the last 3 months. The pain was continuous initially, moderate in intensity and gradually worsened over the period of 3 months such that even weight bearing was not possible. Pain was neuropathic in nature [electric shock-like, burning, and tingling in quality], radiating to both legs and associated with motor weakness of grade 3/5. The patient was on Tramadol and Paracetamol 650mg TID and escalating doses of Gabapentin and nortriptyline combination for last 1 month. Analgesia was inadequate and patient was in severe pain and respiratory distress. The MRI of lumbosacral spine revealed partial collapse of L4 vertebra with retropulsion of collapsed vertebra into the spinal canal of thecal sac compression. Patient was a known case of asthmatic bronchitis and COPD for the last 6 yrs with seasonal exacerbations. He was on salmetrol, budesunide inhaler and nebulisation for last 2 yrs.

On examination, patient was showing signs of respiratory insufficiency with BP= 146/86 mmHg, PR = 92/min, RR =30-35/min SPO2 = 84 % on room air, B/L wheeze was present. He was unable to stand because of pain and motor weakness. Numerical Rating Score (NRS) 0 to 100 was used to assess pain. 100 points were given to maximum pain present before intervention. Routine Preanaesthetic checkup was done, any coagulopathy and platelet disorder was ruled out before epidural steroid injection.

Fluoroscopy guided epidural steroid injection was given by interlaminar approach in L2- L3 Intervertebral space with 2ml of 2% preservative free lignocaine + methylprednisolone 80mg (2ml) + hyaluronidase 1500IU + normal saline, to make a total volume of 8ml. Needle position was confirmed using a loss of resistance technique with saline and water-soluble radiocontrast (iohexol 300). Single shot of above described mixture was given. The rationale for using the steroid was to deliver the steroid as close to the area of the cord compression as possible. The patient tolerated the procedure well. Gabapentin 150 mg twice daily was continued as an adjuvant and was advised follow up visit after 2 weeks/SOS, meanwhile continuing his bronchitis treatment. After 2 weeks the patient came walking and relieved from the pain and also from dyspnea.

DISCUSSION:

Metastatic epidural spinal cord compression is the third most common cause of adult compressive myelopathy, after acute trauma and degenerative etiologies. Metastases most commonly reach the epidural space from the vertebral body (85% of cases) or the intervertebral foramen (15% of cases). Injury to the spinal cord results from mechanical injury to axons and myelin as well as from secondary vascular compromise of the spinal arteries and epidural venous plexus with resulting cord infarction and venous congestion[1]. Left untreated, epidural spinal cord compression ultimately results in paralysis and sphincter incontinence[2]. Corticosteroids are considered the first line of treatment for most individuals with epidural spinal cord compression[1]. They have been shown to reduce tumor and spinal cord edema and can potentially have tumoricidal effects[3]. It is recommended that corticosteroids be administered as soon as the diagnosis of epidural cord compression is made to improve or stabilize neurological deficits until other more definitive therapies are initiated[1,3].

Most patients with advanced cancer, experience significant pain and The World Health Organization (WHO) estimates

that 25% of all cancer patients die with agonizing pain.

Nerve root compression probably is not the only factor contributing to radicular symptoms, however. In many patients, the additional factor is inflammation. Although acute compression of the nerve root often causes weakness and numbness, radicular pain is usually not the first symptom. This is where inflammation comes in. Normal nerves respond to nondestructive pressure by loss of function—they stop transmitting normal signals. Not until inflammation sets in does the nerve begin sending painful signals to the brain, either spontaneously or in response to normally benign stimuli. Inflammation in the injured disc, facet capsule, epidural tissues surrounding the nerve root, and the nerve root itself dramatically increases the nerve's sensitivity to stimuli. Once inflammation is present, the nerve becomes exquisitely sensitive to pressure, producing prolonged, pain-generating discharges with either gentle manipulation or pressure.[4]

The evidence is fair for thoracic epidural injections in managing thoracic and lumbar pain[5]. Also, it has concluded that low-dose administration of neuraxial steroids is safe in patients suffering with chronic pain who have failed to respond to conservative modalities of treatment with no deleterious effect on weight or BMD[6].

The rationale for using the steroid is to deliver the steroid as close to the area of the cord compression as possible. The epidural injection of local anesthetic and steroid solution markedly improved the pain and lung functions in the present case, which can be attributed to anti-inflammatory effects of steroid locally as well as by systemic absorption through epidural vessels.

CONCLUSION:

Lumbar epidural injections can be valuable to desensitize severe neuropathic pain for back and the lower limb secondary to metastasis. This case report highlights the rewarding role of epidural steroid in lumbar metastasis as a part of palliative care in terminally ill patients of metastatic compressive neuropathy.

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