

# Role of Phenol Epidural Neurolysis in Pain Management of Patient with Myxofibrosarcoma: A Case Report

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## ABSTRACT

Myxofibrosarcoma is an aggressively malignant soft-tissue neoplasm of the upper or lower extremities that occurs in adults. At the time of diagnosis, upto 73% of cancer patients complain of varying degrees of pain. The ultimate goal of treatment is pain relief and functional recovery. The authors describe the case of a 59-year-old female patient who presented with complaints of excruciating brachialgia of the right upper limb. She had a pain score of 10 based on the Visual Analogue Scale (VAS 0-10). Her pain was initially managed conservatively with systemic analgesics but it failed to offer adequate relief. Often, there is an inadequate response to conservative treatment. These patients may benefit from various interventional modalities. Hence, epidural neurolysis with phenol was done by slowly injecting 2 mL of 6% aqueous phenol into the epidural space under Computed Tomography (CT) and fluoroscopy guidance. Upon follow-up, the patient's Visual Analog Scale (VAS) was recorded as one, morphine consumption decreased with eventual discontinuation, and paraesthesia had reduced by 50%. This patient was suffering from chronic pain, which significantly reduced her Quality of Life (QoL). The injection of phenol into the appropriate space resulted in satisfactory sustained analgesia. She did not have any sensory or motor loss. Her pain was adequately controlled by paracetamol 500 mg as needed. The patient remained pain-free for five months after the procedure but eventually succumbed to her illness.

**Keywords:** Carbol, Epidural analgesia, Neuralgias, Palliative care medicine

## CASE REPORT

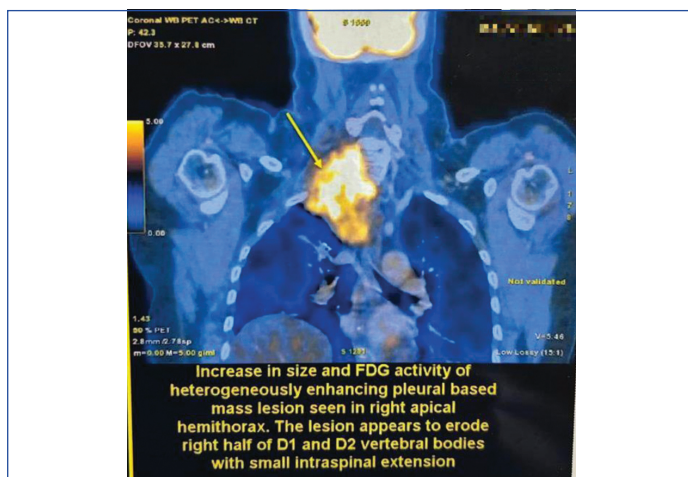
A 59-year-old female patient presented with complaints of excruciating brachialgia of the right upper limb, disturbed sleep, and inability to perform daily activities for three months. The patient's pain score based on the VAS 0-10 was recorded as 10. Three years ago, the patient was diagnosed with high-grade myxofibrosarcoma of the right thigh for which she had undergone above knee amputation of the right lower limb, followed by right mastectomy because of distant metastasis. After surgical intervention, she received radiotherapy and chemotherapy. A whole-body Positron Emission Tomography-Computed Tomography (PET-CT) scan was performed and was suggestive of nodular lesions in the right upper hemithorax causing erosion and lysis of the D1 and D2 vertebral bodies, the right first and second ribs, and intraspinal extensions at these levels [Table/Fig-1]. Her pain was initially managed conservatively in accordance with the World Health Organisation (WHO) analgesic ladder with tablet Paracetamol 1000 mg TID, tab. Pregabalin 150 mg TID, and tab. Morphine 20 mg PO QID, but it failed to offer adequate relief even after reaching the maximum

tolerated doses. Epidural neurolysis with phenol, an interventional analgesic approach, was therefore considered.

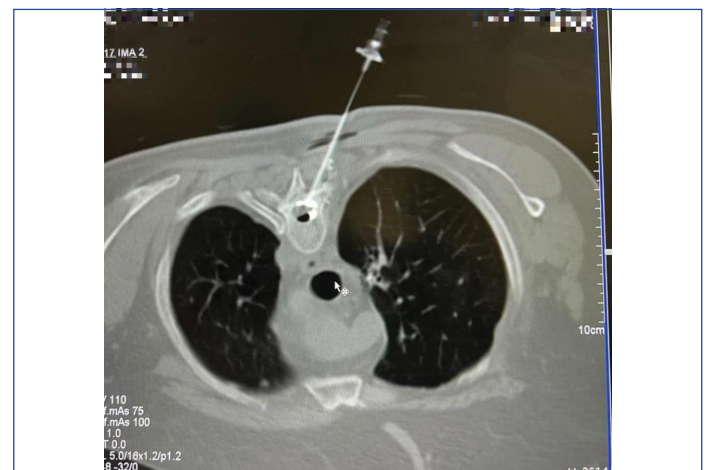
The patient was brought to the CT room, and after attaching all vital parameter monitors, she was placed in a prone position. The fourth thoracic vertebrae (T4) were identified under CT guidance. After observing all aseptic precautions, an 18-gauge epidural needle was introduced at the level of T4-T5 with CT guidance, the catheter was threaded, and its tip was placed at the level of T2-T3, allowing the drug to spread to the targeted vertebral level without disturbing the eroded vertebral bodies.

Adequate placement of the catheter tip was confirmed on CT by injecting 2 mL of iodine contrast agent into the epidural space [Table/Fig-2]. To fix the catheter and prevent its displacement, subcutaneous tunnelling of the catheter was performed. On day 1, the patient received a prognostic block consisting of 3 mL of 0.25% Bupivacaine + 40 mg Triamcinolone + 2 mg Dexamethasone. After 12 hours of the procedure, her VAS score was reduced from 10 to 1.

On day 2, after confirming the tip of the catheter in the appropriate epidural space with fluoroscopy and iodine contrast, 2 mL of 6%



**[Table/Fig-1]:** PET-CT scan showing a mass in the right apical hemithorax appears to be eroding right half of D1 and D2 vertebral bodies.



**[Table/Fig-2]:** Computed Tomography (CT) scan image showing epidural needle and contrast agent in the epidural space.

aqueous phenol injection was slowly administered. On day three, the procedure was repeated with the same precautions, and the catheter was subsequently removed. During follow-up on day five and day 15, the patient's Visual Analogue Scale (VAS) pain score was recorded as one, and paraesthesia had reduced by 50%. Thereafter, any pain experienced was adequately controlled with tab. Paracetamol 500 mg as needed. The patient continued to live fairly pain-free for five months after the procedure but eventually succumbed to her illness.

## DISCUSSION

Myxofibrosarcoma is an aggressively malignant soft-tissue neoplasm of the upper or lower extremities that typically occurs in adults in their sixth to eighth decades of life. At the time of diagnosis, upto 73% of patients suffering from any type of cancer complain of varying degrees of pain. The goal of treatment in such terminally ill patients is pain relief and functional recovery to improve quality of life. Systemic analgesic treatment was identified as inadequate for the intensity of pain in about 40% of cancer patients [1,2]. These patients may benefit from various interventional modalities such as neuraxial analgesia, sympathetic blocks, peripheral nerve blocks, radiofrequency ablation, and cryoablation [3,4]. Epidural analgesia is a convenient way to prevent afferent impulses from reaching the spinal cord in the treatment of intractable pain. Injection of phenol, a neurolytic agent with analgesic properties, into the extradural space leads to a patchy destruction of all fibers within its sphere of influence, resulting in a quantitative reduction of sensory input [5].

This patient was suffering from chronic pain that significantly reduced her quality of life. She failed to achieve adequate pain management with NSAIDs and opioids. Injection of phenol in the appropriate space resulted in satisfactory sustained analgesia for five months, and injecting a steroid on day one relieved her of paraesthesia by reducing oedema around the nerve roots. Although there is literature suggesting an association between phenol neurolysis and sensory loss, motor weakness, and spinal cord infarction [6], The presently discussed case did not report any side effects or complications from the procedure performed. This can be attributed to the fact that at smaller doses of 6%, phenol causes second-degree nerve injury with minimal to no loss of the endoneurial nerve structure. Although rare, complications following chemical neurolysis with phenol have been documented. There have been instances of paraplegia [7], spinal cord ischaemia, and systemic effects such as respiratory and renal failure [8].

The advantage of using epidural phenol is that it is a simple single procedure, which causes less pain on injection and local irritation [9], has an immediate analgesic effect, offers good patient compliance, and has a lasting effect for three to six months. Therefore, it must be considered an important alternative for analgesic management in select patients.

In a study by Poddar K et al., 10 patients with lung and breast carcinoma suffering from proven cancer pain and on opioid therapy were selected. Epidural neurolysis with 50% alcohol was

performed, and all patients reported pain relief of 70% or more with a decrease in the narcotic dose by upto 25%. The overall mean duration of pain relief was three months [10]. In another case report, De Pinto M and Naidu RK described a case of intractable lower extremity pain in a patient with terminal cancer managed by chemical neurolysis of the femoral nerve with 6% phenol. This patient had 100% pain relief post-neurolysis and a reduction in opioid doses by 50% in the weeks following the procedure, with eventual discontinuation [11].

## CONCLUSION(S)

Epidural neurolysis with phenol provides a promising avenue for managing intractable chronic cancer pain. It offers sustained analgesia, reduces opioid consumption, and is favourable economically. These findings have significant clinical implications for enhancing palliative care and patient satisfaction. It is a superior alternative for pain management when performed by an experienced physician familiar with the procedure and after careful patient selection.

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