Volume 1. Issue 1. 2018

ProClinS Anesthesiology and Pain Management

Case Report Open Access

Unilateral Thorax Pain Due to Malignancy Managed with Cordotomy: A Case Report

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Received: August 09, 2018; **Accepted:** October 08, 2018; **Published:** October 15, 2018

ABSTRACT

Pain is one of the most common symptoms related with cancer and its treatment. Recent studies have shown that pain is not adequately controlled in up to 31% of cases, and there are patients who do not respond well enough to the cures or experience significant side effects, or even intolerance to pain medications.

One of the approaches to the management of unremitting unilateral malignant pain includes considering cordotomy as a treatment. Cordotomy involves creating a lesion of the lateral spinothalamic tract with a fluoroscopy Percutaneous radiofrequency technique.

We examined the case of a patient with lung cancer, bone metastasis suffering from associated severe pain on the left chest wall. We propose cordotomy in selected patients with incident unilateral neoplasm-related pain.

INTRODUCTION

Pain is a symptom that causes disability in the patient with cancer. According to a recent meta-analysis, at least 38% of all patients with cancer experienced cancer-related pain, with the rate being greater in those undergoing treatment (55%) and in those with advanced, metastatic, or terminal-stage illness (66.4%). The World Health Organization guidelines entail the use of co-analgesics, adjuvants, and opioids in a step-wise fashion.

We think that the right way to treat pain requires the knowledge of the underlying phisio-pathological mechanisms behind pain. We suggest cordotomy in patient with incident unilateral cancer pain none responding to any cures, or refractory to the standard approach. Amongst them, cordotomy has been performed for one-sided (unilateral) refractory pain, below the dermatomal level of C4.

Cordotomy disrupts the lateral spinothalamic tract that carries pain and temperature sensations, under fluoroscopic guide. Ideal candidates for cordotomy are patients with incident pain. Contraindications to cordotomy include a history of respiratory conditions (pneumonectomy, phrenic nerve injury, lung damage) on the contralateral pain to the procedure or pain located in the midline.

The current standard technique to perform cordotomy involves the percutaneous placement of a needle into the upper cervical spine (C1-C2 level) controlateral to the side with pain. With appropriate myelographic confirmation, impedance measurements, and sensory-motor dissociation testing, a lesion via radiofrequency thermocoagulation is created in the lateral spinothalamic tract (which carries pain and temperature sensations), in the anterolateral quadrant of the cord.

Major complication rates are considered low (<1%), as a consequence of proper technique and image guidance. More often, the patient may experience transient motor weakness or dysesthesias, whereas the most common complaint after the procedure is headache, in a C2 dermatomal distribution, fever, and Horner Syndrome. Reversible complications due to damage of pyramidal pathways include muscle weakness and paresis. Other complications of the procedure include bleeding, infection, respiratory conditions, bladder/bowel changes, hypotension, and death. We present a case of unremitting cancer-related thoracic pain that resolved after cordotomy, illustrating the effectiveness of this intervention [1-12].

CASE REPORT

Two years ago, a 67-year-old woman with history of lung carcinoma was treated with left pneumonectomy. She was found to have a metastatic lesion of the chest, for which she underwent palliative radiation therapy. She had bad health conditions, she was asthebic and cachectic. However she reported minimal response to the treatment and ongoing pain that progressed for the last 6 months at least. She described her pain in the left chest as shooting, gnawing, and hot/burning. Alleviators included resting in bed and medications, whereas aggravators included cough, walking, standing and any physical activity. During the first clinical evaluation, her worst pain was rated a 10 on 10, and a current 8 on 10 using the numerical rating scale. Previous radiographs demonstrated left rib lesions due to bones metastasis. When she arrived in our clinic, she had been using a fentanyl patch at 75 μg/h/72 h and Diclofenac 150 mg/die. On follow-up, the patient was found to have local progression of disease becoming refractory to aggressive pharmacotherapy. At this point, she was referred to our hospital for consideration of cordotomy. The patient agreed to proceed with the procedure because she was an excellent candidate for cordotomy due to the unilateral nature of her pain. The pulmonary function before and after the cordotomy was not compromised. The radiofrequency ablation of the right C1-C2 dorsolateral-spinothalamic tract was performed without complications. The patient immediately noticed pain relief, and the pain intensity score went from a 10 on 10 pre-surgery, to 0 on 10 post-cordotomy. The pain relief was below the C4 dermatome. Three months after the cordotomy, the patient stated that her pain in the aforementioned areas was 100% relieved (0/10 on the numerical rating scale score).

DISCUSSION

We presented a patient with lung cancer, metastatic to the chest, with severe, unremitting neoplasm-related pain on the left emithorax. She has been suffering from severe unilateral incident pain due to progressive disease, her pain worsened despite aggressive pharmacotherapy, as well as oncology-based treatment that included chemo, surgery and radiation therapy. Intolerable side effects from pharmacotherapy may arise again, as well as a state of hyperalgesia induced by high opioid use. She ultimately underwent right percutaneous anterolateral cervical cordotomy, resulting in complete resolution of thoracic pain. We propose cordotomy in selected patients with incident unilateral neoplasm-related pain. Cordotomy has been proven to be effective, safe and with a relatively low risk.

CONCLUSIONS

Percutaneous cordotomy is a low risk intervention that reduces cancer pain in appropriately selected patients. Cordotomy is both a safe and effective intervention worth considering for relieving pain in selected oncological patients with unremitting, unilateral cancer-related pain unresponsive to aggressive pharmacological analgesic management.

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