Thoracic Myeloradiculopathy Secondary to Non-Hodgkin’s Lymphoma

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ABSTRACT
Spinal cord/root compression is an uncommon presentation of non-Hodgkin’s lymphoma that needs early diagnosis and rapid treatment to avoid permanent neurological deficit. In this report, we describe a 72-year-old man with a clinical picture of thoracic myelo/radiculopathy. MRI showed a large paraaortic and paravertebral soft tissue mass extending into the left T6-T8 foramina causing significant cord compression. The patient underwent an open biopsy and decompressive laminectomy. Biopsy revealed a low grade non-Hodgkin’s lymphoma. After surgery, chemotheraphy was started with cyclophosphamide, vincristine and prednisone (CVP) given with rituximab. Our patient achieved a satisfactory recovery of his symptoms after surgery and eight cycles of chemotherapy and a six-month MRI showed a dramatic response with significant resolution of the epidural mass. Non-Hodgkin’s lymphoma is an uncommon etiology of spinal cord compression. However, it should be included in the differential diagnosis in elderly patients who present with a clinical picture of thoracic myelo/radiculopathy. Surgery and chemotherapy are both effective treatments for Non-Hodgkin’s lymphoma patients presenting with spinal root/cord compression.

KEY WORDS: Epidural mass, Non-Hodgkin’s lymphoma, Spinal cord compression, Thoracic myeloradiculopathy

Case Report

History

A 72-year-old Caucasian male presented to the emergency room in August 2009 with a few days’ history of worsening mid-thoracic back pain, bilateral leg weakness, and numbness affecting the lateral aspect of the right leg and foot. He had a 3-month history of left sided chest pain and paresthesia. He denied any history of fever, chills or night sweats; however, he had lost about 10 pounds in one month. There was no history of arm weakness, headache or visual disturbance. Three weeks prior to spine surgery consultation, he had four visits to the emergency room of his local hospital for different reasons including left sided chest pain and epigastric discomfort. In July 2009, he had been prescribed a course of antibiotics to treat Helicobacter pylori without significant improvement. He had no history of bladder or bowel dysfunction. His past
medical history included hypertension, hyperlipidemia, bilateral glaucoma, angioplasty and upper GI bleeding. He had no previous surgeries. There was no family history of malignancy. He was an ex-smoker, drank alcohol occasionally and was a retired woodcutter.

Examination

On examination, his vital signs were stable with normal body temperature. There was no peripheral lymphadenopathy or evidence of hepatosplenomegaly. He was not in severe pain. There was midline tenderness over his mid-thoracic area. Neurological examination revealed that the patient had difficulty maintaining balance while standing and walking. Examination of his sensory and motor-function was unremarkable. Blood test results were within the normal range. A gastroscopy had been performed two days before presentation and no abnormality had been identified. Computed tomography (CT) of the lumbar spine showed multi-level degenerative changes. CT of the chest showed a confluent soft tissue mass in the posterior mediastinum along the extra-pleural space on the left side. CT of the head, abdomen and pelvis were normal. Magnetic resonance imaging (MRI) of the cervical and thoracic spine (Figure 1A,B) revealed a large paraaortic- and paravertebral-soft tissue mass extending into the left T6-T8 foramina causing significant cord compression due to posterior extension of the tumor. The differential diagnosis based on no loss of the osseous elements, extensive extradural soft tissue mass and contiguous levels included lymphoma, neurogenic tumor and metastatic cancer.

Operation

The patient had an open biopsy and T6-7 laminectomy without any intra-operative or postoperative complications.

Pathological Findings

The intra-operative frozen section of the samples from the tumor showed lymphoid cells. The final pathology report revealed a low grade B-cell non-Hodgkin's Lymphoma.

Postoperative course

Postoperative intravenous steroids were administered. The patient recovered well postoperatively and was discharged in a stable condition.
DISCUSSION

Lymphoma of bone has a variable picture on plain x-ray. A lesion may appear as a vague, mottled lucency. This intrasosseous lesion usually has a permeative pattern of lysis, but may appear blastic or sclerotic. Periosteal reaction and cortical destruction follow. Plain radiographs often underestimate the extent of the lesion. CT scan is useful for disease staging and delineating spinal lesions. MRI is helpful in demonstrating bone marrow and soft tissue involvement. Lymphoma causes an increased uptake on bone scan. The radiology differential includes osteosarcoma, Ewing’s sarcoma, neurogenic tumor, metastatic cancer and osteomyelitis.

Our patient presented with chest pain that had been present for a significant period of time. The visceral and non-visceral causes of thoracic pain must be carefully and thoughtfully evaluated since gastric and cardiopulmonary etiologies are entities that can have severe consequences if overlooked. Generally the thoracic spine needs to be investigated when there are neurological symptoms; dysesthesia and weakness. The imaging of choice is MRI as extradural compression of the cord and exiting nerve roots can be readily identified as well as intrinsic changes in the cord observed. Neurological symptoms are usually late in the course of lymphomatous involvement of the thoracic spine with a prodrome of visceral symptoms related to the mediastinal structures.

The management options for spinal NHL include chemotherapy, surgery, radiotherapy, or a combination of these. However, the optimal treatment for spinal cord compression as a result of NHL is still controversial. Our patient underwent open biopsy and decompressive laminectomy followed by chemotherapy consisting of cyclophosphamide, vincristine and prednisone (CVP) given with rituximab.

The majority of patients with spinal epidural lymphoma have an unfavorable histological diagnosis (poorly-differentiated lymphoma), but about a third have lymphocytic well-differentiated lymphoma. The prognosis is poorer for more aggressive lymphoma. However, the functional recovery and life expectancy is relatively good in lymphoma patients compared to metastatic carcinoma with epidural spinal cord compression. Our patient had low grade B-cell non-Hodgkin’s lymphoma. He received

Figure 2: MRI sagittal (A) and axial views (B) following eight cycles of chemotherapy showing a significant resolution of the epidural lesion.
eight cycles of chemotherapy (CVP/Rituximab) and made a good neurological recovery. A six-month follow-up MRI scan showed significant resolution of the epidural space and a dramatic decrease in the size of the lesion (Figure 2A and 2B).

Non–Hodgkin’s lymphoma is an uncommon etiology of spinal cord compression. However, it should be included in the differential diagnosis when:

(1) An elderly patient presents with thoracic pain followed by neurological deterioration manifesting as myelopathy.

(2) There is no evidence of bony destruction on plain radiographs.

(3) MRI sagittal and axial sections are consistent with extradural compression and lack of bony involvement.

(4) There is no history of malignancy.

REFERENCES


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