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Case Report

Internal Medicine Section

A Rare Index Presentation of Hodgkin's Lymphoma

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ABSTRACT

Hodgkin's lymphoma almost invariably presents as generalised lymphadenopathy. Neurological involvement in Hodgkin's is such a rare occurrence that not many case reports are available highlighting its importance. Also, cord compression more commonly occurs in non Hodgkin's lymphoma rather than Hodgkin's and is a manifestation of advanced disease. Refuting these common perceptions, the present case report discusses a 28-year-old male patient with complaints of low grade fever since three months followed by motor weakness of both lower limbs along with bladder involvement. Systemic examination revealed multiple lymph nodes in right cervical region along with features of extramedullary cord compression with spinal level at D4. Magnetic Resonance Imaging (MRI) revealed an epidural mass in the spinal canal extending from D2-D4, causing cord compression. Histological examination with immunohistochemical analysis of cervical lymph nodes demonstrated a mixed cellularity type Hodgkin's lymphoma. With appropriate imaging and prompt pathology guided chemotherapeutic regimen, the neurological function were restored without the need for any surgical intervention. Hence, it is important to also consider Hodgkin's lymphoma in the setting of spinal cord compression along with other causes especially in Indian scenarios where tuberculosis is the closest differential bias encountered. Also, early diagnosis and evidence-based prompt treatment is crucial in preventing further neurological worsening and may curb the need for surgery.

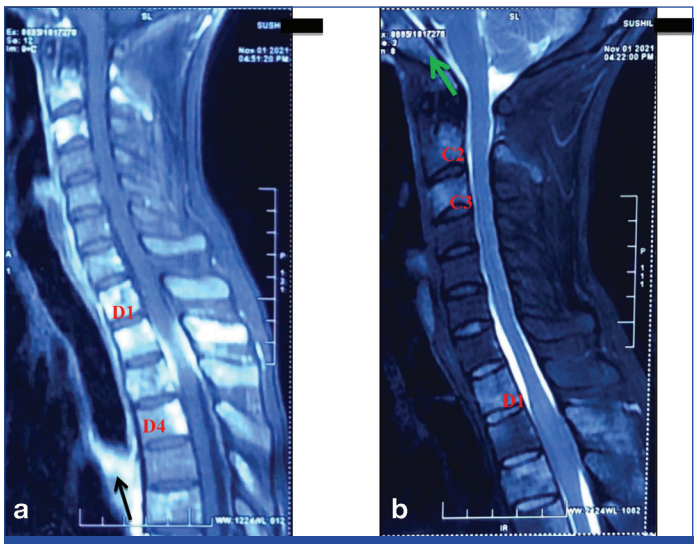
Keywords: Cord compression, Epidural mass, Lymphadenopathy, Spinal cord

CASE REPORT

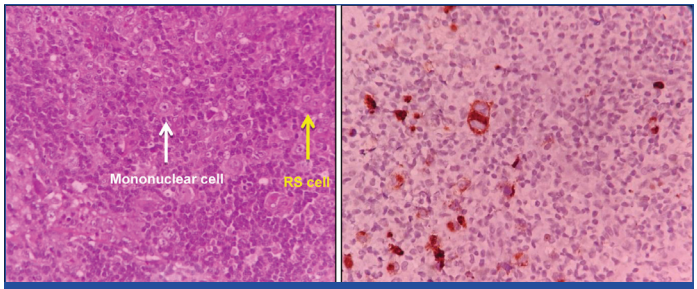
A 28-year-old male patient presented with complaints of low grade intermittent fever for three months, associated with evening rise of temperature without loss of weight, appetite or night sweats. This was followed by sudden onset symmetric weakness of both lower limbs three days before admission, associated with sensory loss but without back pain, band like sensation or root pains. Subsequently, there was bladder involvement in the form of increased frequency of micturition.

On physical examination, he was afebrile, his vitals were stable; multiple small lymph nodes were palpable in right lower cervical and posterior triangle group which were non tender, mobile, discrete with largest being 3×2 cm in size, no other lymph node groups were palpable. Examination of spine was unremarkable. Neurological examination revealed clasp knife spasticity in bilateral lower limbs with a power of the Medical Research Council (MRC) grade 2/5 across all the muscles acting at hip, knee and ankle joints with normal tone and power in both upper limbs. Bilateral Babinski was positive, abdominal reflex was absent and ankle and patellar clonus were present bilaterally. Upper limb reflexes were normal. A subjective decrease in all modalities of sensation was observed below 4th thoracic dermatome. Other systemic examination was normal. Based on this, a provisional diagnosis of cord compression was made with tuberculosis and lymphoma as primary differentials.

Laboratory investigations revealed haemoglobin was 12.5 g/dL, total leucocyte count was 6600 cells/µL with 68% neutrophils and 20% lymphocytes, platelet count was 4.2 lac/mm^3, Erythrocyte Sedimentation Rate (ESR) was 38 mm/hr, Mantoux test was negative, peripheral smear was unremarkable. Liver function and renal function tests were normal. Human immunodeficiency virus antibody test and sputum studies for acid fast bacillus were negative. Plain radiograph of chest was also normal. A contrast enhanced Magnetic Resonance Imaging (MRI) of whole spine showed altered marrow signal with inhomogenous enhancement of entire cervicodorsal and lumbosacral vertebral bodies, posterior elements and ribs, appearing hypointense on T1 and heterogeneously hyperintense on T2. There was also multifocal heterogeneously enhancing epidural soft tissue in the spinal canal at D2-D3 level extending into D2-3 and D3-4 neural foramina, causing cord compression and cord oedema bilaterally [Table/Fig-1]. The soft tissue was also seen extending into left paravertebral region. However, there was sparing of intervertebral disc. Cervical lymph node excision biopsy revealed diffuse effacement of lymph node architecture, with uninucleate and binucleate cells with prominent eosinophilic large nucleoli with perinuclear halo and eosinophilic cytoplasm {Reed Sternberg (RS) cells} in a background of mixed inflammatory infiltrate [Table/Fig-2]. Immunohistochemistry (IHC) revealed Cluster of Differentiation (CD) 15 and CD 30 positivity. Hence, a diagnosis of mixed cellularity Hodgkin's lymphoma was confirmed.

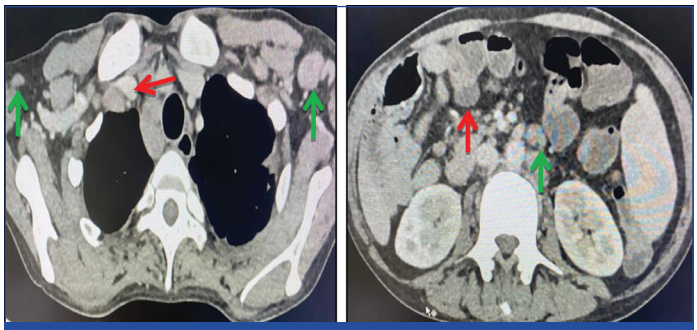


[Table/Fig-1]: Magnetic Resonance Imaging (MRI) of the spine in sagittal plane showing: (a) T1 postcontrast image of dorsal spine with well-defined homogenously enhancing mass in the posterior mediastinum (black arrow) and paravertebral location extending along upper thoracic vertebrae (D1-D4); (b) T2 image showing areas of altered signal intensities with enhancement in clivus (green arrow), vertebral bodies of C2,C3,C7, D1-D3 and adjacent soft tissues.



[Table/Fig-2]: Histopathology images of biopsied lymph node under light microscopy: (a) Complete effacement of lymph node architecture with a mixed population of atypical lymphoid cells, eosinophils, few histiocytes and neutrophils with scattered Reed Sternberg and mononuclear cells (H&E stained sections, 10X magnification); (b) Positive staining for CD15 (IHC, 20X).

For staging of lymphoma, a total body Computerised Tomography (CT) scan was done which showed multiple enlarged homogeneously enhancing lymph nodes in neck, axilla, mediastinum, mesentery, retroperitoneum and pelvis along with hepatosplenomegaly [Table/Fig-3].



[Table/Fig-3]: Contrast Enhanced Computerised Tomography (CECT) chest and abdomen respectively in axial plane showing: (a) mediastinal (red arrow) and bilateral axillary lymphadenopathy (green arrows); (b) mesenteric (red arrow) and retroperitoneal (green arrow) lymphadenopathy.

A final diagnosis of extradural compressive myelopathy due to stage IV Hodgkin's lymphoma was reached. Patient was initially started on pulse methylprednisolone 1 g/day for five days and then was referred to Haematoncology Department, where he was planned for chemotherapy with four cycles of adriamycin, bleomycin, vinblastine and dacarbazine regimen and a review imaging thereafter to assess response. At present, patient has received two cycles of chemotherapy and has improved clinically to Medical Research Council (MRC) grade 3 power in hip flexors and knee extensors bilaterally.

DISCUSSION

The Hodgkin's Lymphoma (HL) is a lymphoproliferative malignancy of B-cells. It almost always presents as generalised lymphadenopathy most commonly involving cervical and supraclavicular lymph nodes [1]. Extranodal disease is rare and amongst it, neurological complications are even rarer. Only 5% cases develop spinal cord compression [2] whereas in only 0.2% cases, this occurs as the initial presentation [3]. This patient also had epidural cord compression as the first manifestation of HL. Paul TR et al., similarly observed 12 cases of HL causing spinal cord compression in a retrospective study [4]. Ghedira K et al., also studied a similar case and found that in patients with Hodgkin lymphoma with advanced disease, spinal cord compression is a well-known complication [5]. However, rarely, it may be the initial presentation of the illness and the diagnosis may be misleading which was found in our case leading to the differential diagnoses.

Uthaya Sankar MK et al., in their study found symptoms of spinal cord compression (not unique to HL) as back pain (progressive, worse when lying flat, and improved with walking), weakness, sensory loss, autonomic dysfunction (painless urinary retention, faecal incontinence, and impotence), and ataxia which were quite in consensus with symptoms found in the present case [6].

Similar to this case, Ghedira K et al., also observed that HL has a preference for the dorsal aspect of the thoracic spine, followed by lumbar and cervical regions [5], likely due to the rich venous anatomy in the thoracic region [7]. The differential diagnosis of Hodgkin's lymphoma presenting as spinal cord compression would include non Hodgkin's lymphoma, non specific inflammation, tuberculosis and rarely eosinophilic granuloma according to Paul TR et al., out of which tuberculosis was also a differential in this case [4].

The neurological complications commonly indicate advanced HL. They can occur both as a direct consequence of lymphoma (intraparenchymal brain metastases, epidural spinal cord compression, HL meningitis and dural metastases) or indirectly due to paraneoplastic disorders or treatment related [8]. Epidural invasion usually occurs via contiguous spread from a paravertebral mass or rarely may arise de novo from extradurally located lymphoid rests [9]. Very similar to this case, Salomone G et al., also found an epidural mass infiltrating the spinal canal responsible for symptoms of back ache and motor weakness in a 13-year-old female [10].

The confirmation of HL requires demonstration of RS cells on histopathology and CD15 and CD30 positivity on IHC. Tuberculosis and lymphoma bear a close similarity in clinical presentation thereby reinforcing the need for a tissue diagnosis. Staging of the disease is done after relevant imaging by Cotswold-modified Ann Arbor Staging [1]. Epidural HL responds well to combined chemotherapy and radiotherapy. Cheah CY et al., did a contemporary retrospective analysis on characterisation of the unique clinical features of rare extranodal manifestation of HL and concluded that complete clinical response and functional recovery have been reported in 61% and 86% of cases, respectively [11]. In the review of the literature in a study conducted by Le Dû K et al., patients were treated with a standard regimen (ABVD or ABVD-like regimen with a median cycle number of 6 per patient) with a high level of complete response [12]. The similar management strategy was used in the present case report.

CONCLUSION(S)

Spinal cord compression is a very rare first manifestation of Hodgkin's disease and the present case highlighted the importance of considering HL as one of the differentials in this regard. Of note, as in the patient, the sparing of intervertebral disc on MRI favours a diagnosis of tumour rather than inflammation.

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