

Primary bony non-Hodgkin lymphoma of vertebra

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Introduction

Primary lymphoma of the bone can be defined as lymphoma of bone without evidence of dissemination or extra osseous involvement. This is very rare accounting for less than 1% of total bone primaries. Common sites of bone lymphoma are femur, tibia, scapula and iliac bone.

Case presentation

A twenty one year old previously healthy male presented to the orthopaedic unit with chronic central back pain without radiculopathy for one year duration. He noticed a painless lump in the thoracolumbar region which was rapidly growing. Clinical examination revealed a 10 × 10 cm hemispherical non-tender, non-pulsatile lump. He developed weakness of left leg following trivial trauma two months later. Plain X ray of thoracolumbar spine revealed an unstable pathological wedge fracture at 12th thoracic vertebra with osteolytic lesions. (Fig 1)

MRI of the thoracolumbar spine revealed a tumor which was invading the D 12 vertebra with a moderate narrowing of the central canal. In fact it had extended to the two adjacent vertebrae and to the surrounding soft tissue including psoas and erector spinae muscles.(fig 3)

In laboratory investigations total white cell count was 18×10^9 and ESR was >123 mm for first hour.

The trucut core biopsy of the lump was reported as intermediate Non-Hodgkin's lymphoma which was further confirmed by immunohistochemistry.

Bone marrow of iliac spine, CT scans of chest; abdomen

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Figure 1. Wedge fracture of D 12th vertebrae

and neck were performed and found no evidence of dissemination.

Chemotherapy was commenced with cyclophosphamide, doxorubicin, vincristine.(Fig 2) Two months after the chemotherapy a remarkably shrunken residual tumor with minimal canal stenosis were found on MRI. Three months after the medical treatment, we performed a two level 8 screw transpedicular fixation with cross bars in order to stabilize the T12 vertebra. He was discharged three weeks later. (Fig 4)

Multiple biopsies taken from surrounding soft tissue and D 12 vertebra during operation was reported as fibrous tissue.



a
b
Figure 2. MRI scans of the thoraco lumbar spine before (a) and after (b) chemotherapy

Discussion

Primary bony lymphoma is a primary single osseous lesion which remains without systemic dissemination for more than six months. By this definition the possibility of undetected primary non bony lesion will be excluded. [1,2]. In fact, primary bony presentation of Non-Hodgkin's lymphoma (NHL) is very rare, accounting for about 1% of all bone tumors. Out of this 1%, primary vertebral presentation is less than 1.7% of all bony NHL [1,2]. In later presentation with advance symptoms, it is difficult to say weather it is primary or secondary involvement of bone from distant site.

The diagnosis of primary bony NHL by plain X-ray is difficult. But osteolytic lesions are characteristic [3]. Thus the diagnosis will depend on bone biopsy of site, iliac bone biopsy and immunohistochemical studies. Limitations of such a procedure would be the difficulty in recognizing a high grade NHL, and even such a case would be interpreted as intermediate or lowgrade lymphoma.[3,4]. What ever the spinal involvement these patients are at high risk of developing central canal occlusion which may present with varying symptoms and signs of pain, motor and sensory involvement to acute cauda equina syndrome with paralysis.

In our case, the patient presented with a severe back ache and thoracic D12 wedge compression fracture with features of minimal spinal compression. This was supported by pre-operative imaging, intra-operative



Figure 3. Two level fixations

findings, and pathological analysis. There was no source of disseminated or extra spinal disease at presentation, nor at six months after initial diagnosis.

Chemotherapy followed by two level fixations was performed.

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Key points :

- Primary bony Non-Hodgkin's lymphoma (NHL) is very rare.
- The diagnosis by plain X-ray is difficult, but osteolytic lesions are characteristic.
- Diagnosis will depend on bone biopsy at site of the lesion, iliac bone biopsy and immunohistochemical studies.