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Case Report

Unmasking the unexpected: a rare case report of B-acute lymphoblastic leukemia

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ABSTRACT

Acute lymphoblastic leukemia (ALL) is a neoplastic proliferation of immature hematopoietic cells, commonly presenting with anaemia, thrombocytopenia, neutropenia, or hepatosplenomegaly. Paraplegia as the initial manifestation is extremely rare. We report a 6-year-old girl presenting with backache and sudden paraplegia. MRI revealed a thoracic epidural mass (D1-D6). Tumor excision and laminectomy were performed, and histopathology confirmed B-cell ALL. This case highlights the importance of considering leukemia in children with acute spinal cord compression.

Keywords: Acute lymphoblastic leukemia, Paraplegia, Backache

INTRODUCTION

The leukemias are the most common malignant neoplasms in childhood, accounting for approximately 31% of all malignancies that occur in children younger than 15 years old. ALL accounts for approximately 77% of childhood leukemias. ALL has striking Peak incidence at 2-3 years of age and occurs more commonly in boys than in girls at all ages.[1,2]

CASE REPORT

A 6-year-old female presented to our hospital with complaints of backache with inability to move both lower limbs. Patient then became bedridden and developed acute urinary and fecal incontinence. Patient had a history of fever 1-day prior. There is no history of trauma upon taking detailed history. There were no significant family and personal history. On physical examination patient was afebrile, having mild pallor with no significant lymphadenopathy. CNS examination revealed normal higher mental function and normal cranial nerve examination. The examination of lower limbs revealed exaggerated deep tendon reflexes with extensor plantar response and 0/5 power in bilateral lower limbs. There was also loss of sensation below the umbilicus. Rest systemic examination was in normal limits.

Upon lab investigation, CBC revealed normal counts but the detailed peripheral blood film showed 60% of the blast with high N:C ratio, coarse to fine chromatin and inconspicuous nucleoli and scant cytoplasm. CSF analysis was done which suggests no malignant cells in CSF.A thoracolumbar X-ray was done to rule out any bony abnormality. Then MRI Spinal Cord was done in axial, sagittal and coronal view which revealed tumor involving D1-D6 vertebrae.

After consultation with neurosurgery department tumor was excised and laminectomy was then done. The tissue mass was then sent for histopathological examination. Histopathology examination revealed a tumor with grey brown soft tissue pieces showed diffuse infiltration of large lymphoid cells having hyperchromatic nuclei with prominent nucleoli suggestive of leukemic or lymphomatous infiltration. Immunohistochemistry was consistent with B-cell lineage.

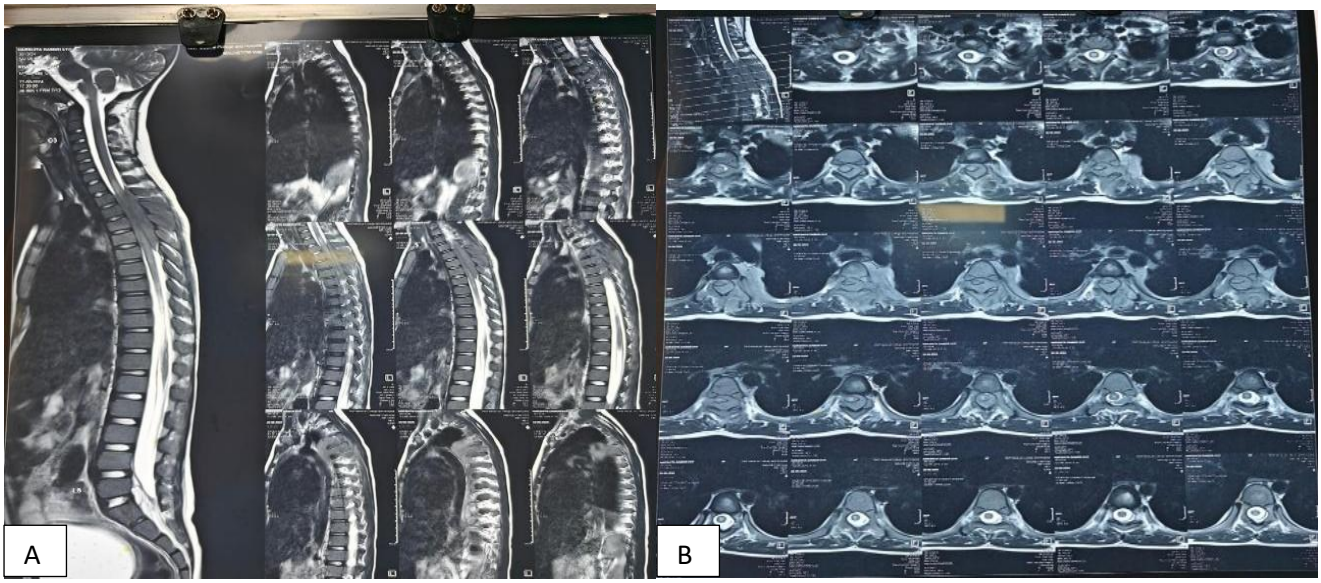

Figure 1 (A and B): MRI of spinal cord (Sagittal and axial section).

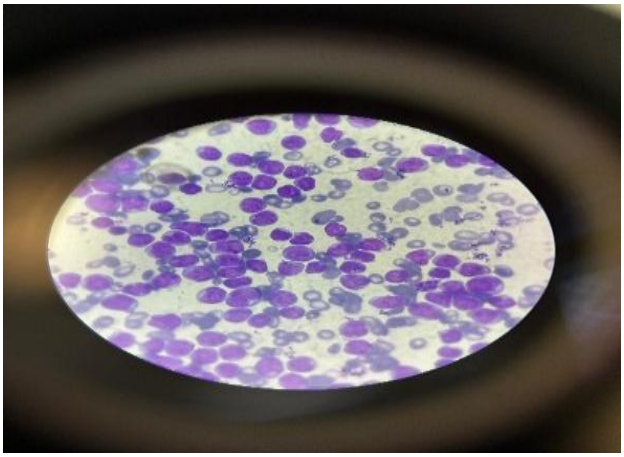

Figure 2: HPE (100×) of the peripheral blood.

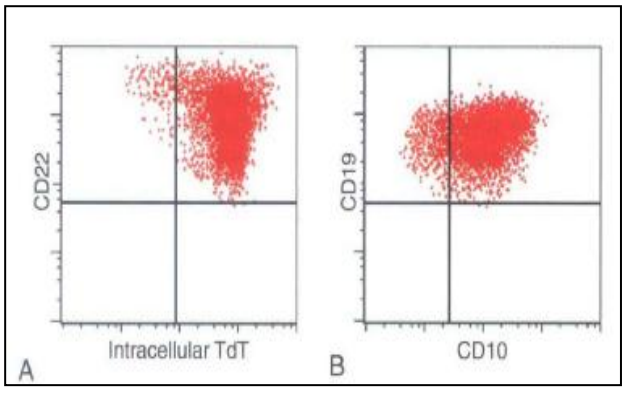

Figure 3 (A and B): Flow cytometry run on peripheral blood.

DISCUSSION

ALL most commonly manifests with recurrent infections, anemia, or bleeding secondary to bone marrow failure, and may also present with hepatosplenomegaly due to leukemic infiltration. Presentation with paraplegia as the initial complaint is exceedingly rare. To date, only two cases have been reported in the literature in which paraplegia was the primary presenting feature of ALL.[3,4] In most reported cases, spinal cord involvement occurs either during the course of the disease as a manifestation of relapse or as a complication of intrathecal chemotherapy rather than at initial presentation.[5]

In children presenting with acute paraplegia or other unexplained neurological deficits, B-cell acute lymphoblastic leukemia should be considered in the differential diagnosis. Early evaluation with peripheral blood smear, bone marrow examination, and appropriate neuroimaging is essential to establish the diagnosis and initiate timely management.

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