

LETTER TO THE EDITOR

Spontaneous intramedullary hematoma and leukemic deposit in spinal cord causing acute onset paraplegia in a child with acute lymphoblastic leukemia

Spontaneous intramedullary hematoma/leukemic deposit in the spinal cord causing paraplegia in a child with acute lymphoblastic leukemia (ALL) is rare. We report a child with ALL, who presented with paraplegia secondary to a spontaneous spinal intramedullary hematoma at D12–L1 vertebral level and leukemic deposit in the filum terminale. Prognosis is guarded in this situation and paraplegia usually persists lifelong despite successful treatment of the disease.

A 4-year-old male presented with multiple ecchymotic patches over the body, abdominal pain, melena, and hematochezia. As he had severe back pain and pain in both legs, he was very irritable and could barely move his limbs. Fundus examination in both eyes revealed small retinal hemorrhages. He had generalized lymphadenopathy and hepatosplenomegaly. On evaluation, he had a hemoglobin of 6 g/dl, total white blood cell count of 278×10^9 cells/l and a platelet count of 74×10^9 cells/l. His Lactate dehydrogenase (LDH) level was 26,978 U/l. His coagulation profile was normal with a PT/INR of 0.92 and aPTT of 31.6. Chest X-ray showed mediastinal widening suggestive of a mediastinal mass. Bone marrow morphology and flow cytometry was consistent with T-ALL. Treatment was initiated with steroids as per BFM ALL 95 protocol along with appropriate blood product support. On the second day of steroid therapy, he was noted to have paraplegia with a sensory and motor level at the D10 spinal cord level. He also had bowel and bladder incontinence. Contrast-enhanced computerized tomography of the brain showed intraparenchymal bleeds with perilesional edema in right cerebellum, both corona radiata, and centrum semiovale. Magnetic resonance imaging of the spine showed a T1/T2 hyperintense area in the intramedullary location of the spinal cord at D12 and L1 vertebral levels suggestive of intramedullary bleed. Another well-defined T1 isointense area and a T2 mildly hyperintense area were seen in relation to filum terminale without post contrast enhancement suggestive of leukemic deposit (Fig. 1). A cerebrospinal fluid study done on the seventh day of steroids revealed a large number of red blood cells admixed with neutrophils, lymphocytes, and monocytes. No active intervention to salvage the spinal

cord was possible considering the intramedullary location of the bleed. Physiotherapy was initiated later. At the completion of 6 months of intensive chemotherapy, there was no improvement in his neurological deficits.

Involvement of spinal cord either as an epidural compression or bleed is rarely encountered in ALL. Even rarer is intramedullary bleed or infiltration. Doing a lumbar puncture in the setting of hyperleukocytosis or thrombocytopenia have inadvertently resulted in an iatrogenic hematoma leading to paraplegia.^{1,2} Children with malignancy and back pain with radiation to limbs should be considered to have spinal cord compression until proven otherwise. Early detection of spinal lesion helps to reduce morbidity by initiating prompt treatment. Magnetic resonance imaging is useful in delineating the extent and nature of epidural deposits. In one review series, decompression laminectomy was performed in 13/27 patients, 9 of whom had complete neurologic recovery.³ Long-term morbidity secondary to paraplegia is worse in intramedullary bleed/deposit when compared to extramedullary compression, where a surgical decompression may alleviate the symptoms and augment recovery. While the prognosis of a longstanding intramedullary hematoma may be poor, timely administration of platelets while the lesion is developing may limit the neurological deficit.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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Abbreviations: ALL, acute lymphoblastic leukemia; aPTT, activated partial thromboplastin time; PT/INR, prothrombin time/international normalized ratio

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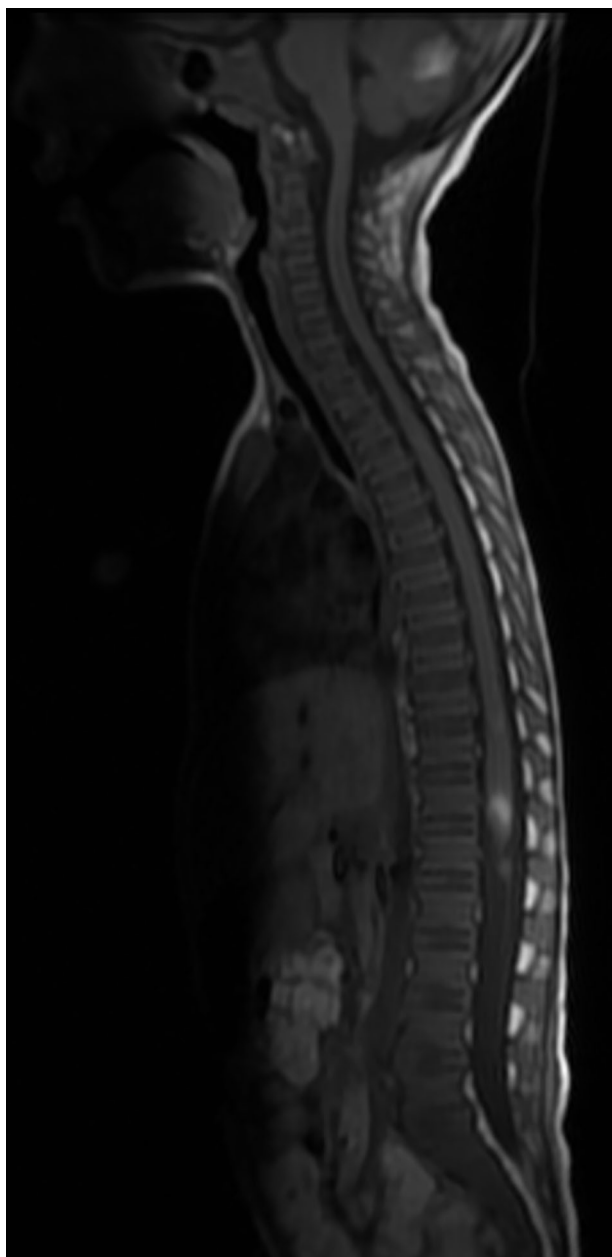


FIGURE 1 Sagittal T2WI MRI of the spine showing hyperintense area in the intramedullary location of spinal cord at D12–L1 vertebral levels. An intracranial hyperintense area in the cerebellar region is also identified, suggestive of bleed

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