Extensive Spondylodiscitis With Epidural Abscess Causing Fever and Lower Limbs Pain in a Child With Sickle Cell Disease

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Summary: Spondylodiscitis is an unusual diagnosis among children and consequent abscess formation is even rarer. A 6-year-old girl with fever, hip pain, and refusal to walk was evaluated. The neurologic examination was normal. Recurrent joint pain with cold weather, iron for anemia without improvement, and decreased intervertebral spaces raised the use of ceftriaxone, oxacillin, and external immobilization. Hemoglobin sickle cell disease, spondylodiscitis with paravertebral collections, and epidural abscess were documented. She was fully recovered. The treatment was conservative because there was no neurologic deficit. We add to the literature 1 case of spondylodiscitis with epidural abscess that was successfully treated with antibiotics alone.

Key Words: spondylodiscitis, epidural abscess, sickle cell disease

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Spondylodiscitis is an unusual diagnosis in childhood.[1] Early diagnosis and appropriate treatment is important to assure improvement and prevent orthopedic and neurologic sequel.[2] Abscess formation seems to be an extremely rare complication.[3] Regarding epidural abscess, it is extremely rare in the pediatric population and the treatment is controversial.[4]

CASE REPORT

Presentation

A 6-year-old girl from the countryside Northeast Brazil presented with persistent fever, nausea, weight loss, and progressive knee and hip pain that kept her from standing up and walking for the last 4 weeks. She had been hospitalized 2 months ago because of pneumonia, when she received blood transfusion. On current admission, she was in excruciating pain, her back was swollen, and the neurologic examination was normal. Recurrent multiple joints pain during cold weather and iron use for anemia without improvement was reported.

Admission spine x-ray showed lytic lesions in thoracic and lumbar vertebrae (T12 to L3) (Fig. 1). The initial laboratory evaluation revealed erythrocyte sedimentation rate 63 mm/h, red blood cell count 3,140,000/mm^3, hemoglobin 7.3 g/dL, white blood cell count 11,600/mm^3 (young neutrophils 10%, neutrophils 57%, eosinophils 2%, lymphocytes 25%, and monocytes 6%), platelets 392,000/mm^3. Spine computed tomography study on the third day of treatment showed inflammation of the vertebral bodies (lytic lesions) and around soft tissue (T12 to L4), paravertebral collections with necrotic tissue (the bigger was 0.5-cm round), and epidural abscess (Fig. 2). Blood cultures were sterile. She received oxacillin and ceftriaxone for 6 weeks since the first day of hospitalization, in addition to external spine immobilization with complete recovery. Fever occurred until the sixth day of treatment. The final erythrocyte

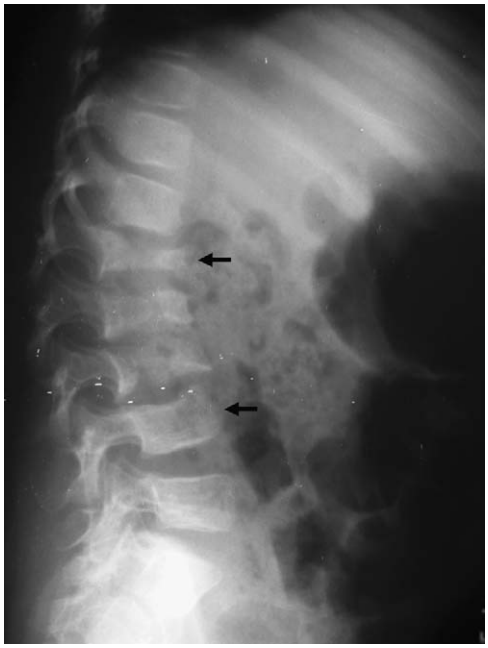

FIGURE 1. Admission spine radiograph shows intervertebral spaces with irregular morphology and margins (T12-L3) and lytic lesions (thoracic and lumbar vertebrae).

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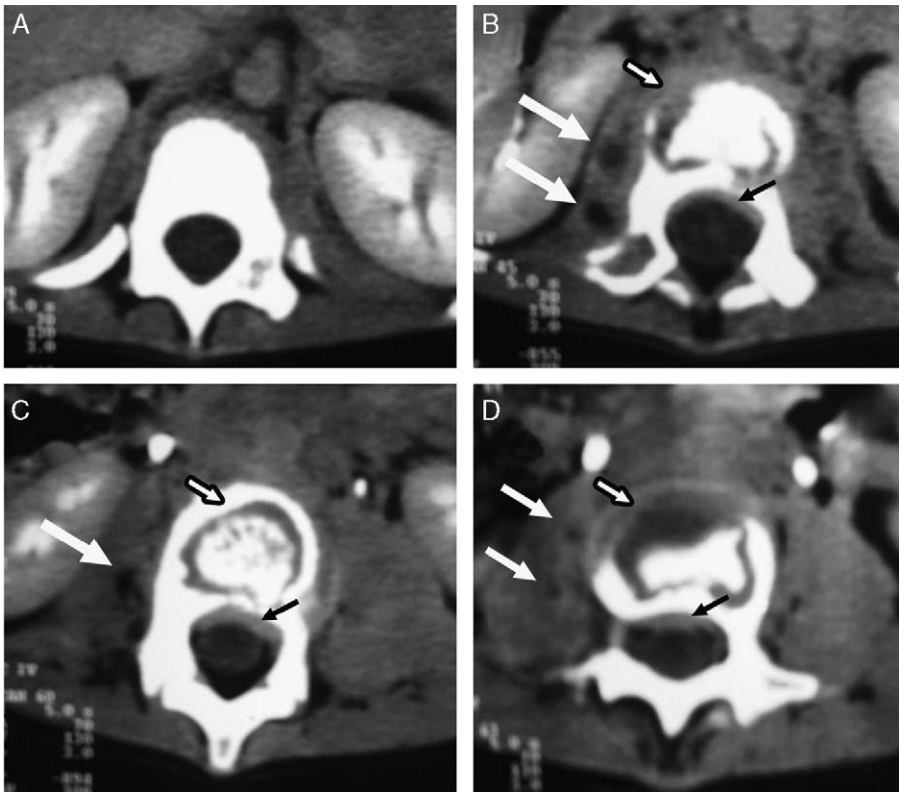

FIGURE 2. Computed tomography scan of spine shows (A) intact vertebral body (T11) and normal epidural space; (B) (T12), (C) (L2), and (D) (L3). White arrows point to paravertebral abscesses with necrotic tissues; white and black arrows point to vertebral body destruction; and black arrows point to epidural abscess.

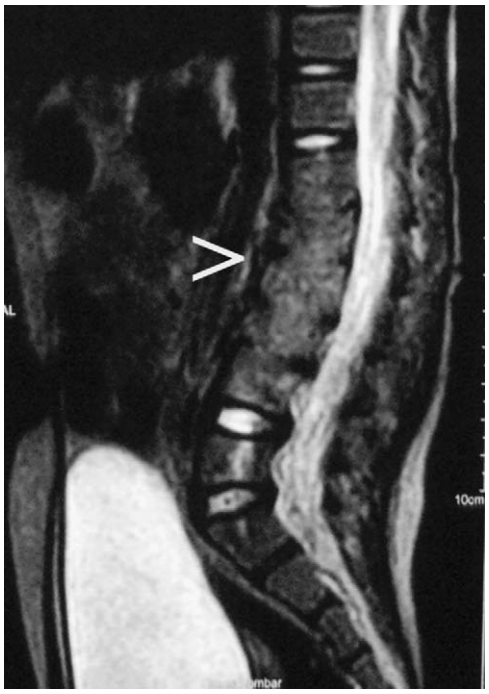

FIGURE 3. Posttreatment MRI of spine shows narrowing of the intervertebral disc space and fused vertebrae at level T12-L4.

sedimentation rate was 19 mm/h. Hemoglobin electrophoresis diagnosed sickle cell disease (SCD) 3 months after blood transfusion. Posttreatment magnetic resonance imaging (MRI) showed spondylodiscitis (Fig. 3).

DISCUSSION

Spondylodiscitis is the inflammation of the disc and the adjacent bony structures.[1] The case reported herein presented with suggestive complaints of this morbidity: leg pain, restricted spinal mobility, refusal to walk, and back alterations.[1] The conservative management led her to full recovery which is in accordance with the literature.[2] The antibiotics used were chosen based on the past history of recurrent joint pain in a region where SCD is very common. Salmonella is the most common causative agent of osteomyelitis in patients with SCD in a overall ratio of 2.2 cases to 1 case attributable to *Staphylococcus aureus*.[5] Therefore, ceftriaxone and oxacillin were given to treat both pathogens, pending culture results. Significant narrowing of the intervertebral disc space is the classic diagnostic criterion for spondylodiscitis.[1] Nonetheless, MRI is the preferred method in children suspected of having spondylodiscitis because it is more sensitive and specific than other imaging techniques.[2] Alterations in the MRI were documented after the completion of treatment. Imaging abnormalities often persist in patients with bacterial spondylodiscitis despite recovery after antibiotic treatment.[6]

Bone involvement is the commonest clinical manifestation of SCD; however, vertebra is not a usual site.[3] A previous case of a 5-year-old boy with SCD and spondylodiscitis attributable to Salmonella paratyphi B has recently been reported.[7] It is noteworthy the extensive involvement (5 vertebrae) of our case and we question if it may be attributable to ischemic bone disease due to SCD.

Even with epidural abscess detected by computed tomography, the child recovered fully by receiving conservative treatment. The estimated incidence of epidural abscess is < 0.2 to 1.2 per 10,000 hospital admissions and it is often not diagnosed until significant neurologic sequel develops.[8] Several authors indicate immediate surgical drainage of abscess, before the development of severe neurologic deficit, combined with specific antibiotics as the treatment of choice.[9] Nonetheless, the risk of the formation of a postoperative kyphotic deformity owing to laminectomy in patients with concomitant spondylodiscitis is recognized.[10] Overall, spinal epidural abscesses in children were associated with more favorable clinical outcomes than were abscesses in adults.[11] There is a consensus that the treatment of neurologic deficit caused by epidural abscess is prompt surgical decompression.[12] However, it is proposed that children without neurologic deficits may be able to be successfully managed with antibiotics without surgery.[4] The case presented herein adds to the literature a report of a neurologically intact child with epidural abscess and spondylodiscitis who was successfully treated with antibiotics alone.

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