Disseminated aspergillosis causing spinal cord compression in a child

Sir,

Aspergillosis is a ubiquitous mold and refers to a group of diseases caused by monomorphic mycelial fungi of the genus *Aspergillosis fumigatus*.[1] Outbreaks of invasive aspergillosis are a problem in immunocompromised children after they are exposed to air-borne spores.[2] Central nervous system (CNS) aspergillosis is rare and a uniformly fatal complication of disseminated disease, involving the cerebral hemispheres and cerebellum, in the majority of cases.[3] Aspergillosis causing spinal cord compression due to epidural abscess formation and hypertrophic pachy-meningitis is a rare entity;[4] we present such a case in a young boy.

An eight-year-old boy was diagnosed in early infancy as chronic granulomatous disease when he had presented with recurrent abscess formation of lymph nodes and pneumonias; he was on regular daily trimethoprim-sulphamethaxazole prophylaxis. At six years of age, he developed osteomyelitis of the right 10th rib which was resected and the necrotic material grew *Aspergillosis fumigatus*. He was treated with amphotericin infusion for three weeks followed by itraconazole for a month. Two years later, he developed progressive weakness of both legs with difficulty in walking.

Clinical examination revealed that he had spastic paraperesis at a D10 spinal level with spinal tenderness at D7-D9. There was no obvious swelling in the paraspinal region at that time. The bladder and bowel functions were intact although he had little hesitancy of micturation. The MRI of the thoracic spine revealed paravertebral soft tissue density in the lower dorsal region D6-D8 with liquefaction in the centre consistent with abscess [Figure 1]. There was also moth-eaten appearance and destruction of D7 vertebral body. Orthopedician was consulted, the abscess was drained followed by laminectomy of D6 to D11 vertebrae and decompression was done. The abscess material grew *Aspergillosis fumigatus*. He was started on high-dose amphotericin B (1.5 mg/Kg/day IV infusion) for 30 days. Later itraconazole (4 mg/Kg-bid) was given for a month. He also received broad-spectrum antibiotics, namely imipenum, ciprofloaxacin and amikacin during the postoperative period. He developed thrombophlebitis at the injection site and later episodes of hypokalemia which were also managed by potassium supplements.

Figure 1: T1 weighted sagittal contrast MRI dorsal spine showing extradural aspergillosis with hypertrohic pachymeningitis compressing spinal cord D6-8 with collapse of D7 vert. body. Note the similar collection anteriorly

He was put on plaster jacket and discharged.

On reviewing him after a month, he was paraplegic with Grade 2/5 power in legs and had urinary and bowel involvement. There was also abscess formation at the operation site with sinus, discharging pus. The wound swab grew aspergillosis; he was given a six-week course of amphotericin B and itraconazole. Bone marrow transplantation was planned but the boy developed persistent fever and the blood culture revealed *Acenobacter*. Despite treatment with many antibiotics, the patient died of septicemia. CNS aspergillosis primarily affects adults. It occurs as a sino-cranial infection in all the reported cases and spinal cord involvement is either due to contiguous spread from the lungs or affecting cord prior to lungs indirectly by hematogenous route.[5] Recently, there has been some increase in the incidence of invasive aspergillosis in the acquired immunocompromized individuals but the childhood disease remains a rarity.[6] Thus disseminated aspergillosis is a devastating disease in children in the immunocompromized patients and the ultimate prognosis is bad. The neurological disability was worse despite aggressive management.

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References

1. Bennett JE. Aspergillosis Species. *In:* Principles and practice of infectious diseases, Mendell GL, Dolin RD, Bennett JE, editors. Vol 2. 4th ed. Church Living Pub: 1995. p. 2306-8.
2. Neijens HJ, Frenkel J, de Muinck Keizer-Schrama SM, Dzoljic-Danilovic G, Meradji M, van Dongen JJ. Invasive *Aspergillus* infection in chronic granulomatous disease: Treatment with itraconazole. J Pediatr 1989;115:1016-9.
3. Walmsley S, Devi S, King S, Schneider R, Richardson S, Ford-Jones L. Invasive *Aspergillus* infections in a pediatric hospital: A ten-year review.

Pediatr Infect Dis J 1993;12:673-82.
4. Digman KE, Partington CR, Graves VB. MR imaging of spinal pachymeningitis. J Comput Assis Tomogr 1990;14:988-90.
5. Nakazato I, Kamada Y, Taira T. Massive spinal cord necrosis associated with adult T-cell leukemia by Aspergellosis. Virchow Arch A Pathol Anat Histopathol 1993;423:397-400.
6. Klenschmidt-DeMasters BK. Central nervous system aspergillosis: A 20 yr retrospective series. Hum Pathol 2002;33:116-24.

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