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 Aspergillus fumigatus. Outbreaks of invasive aspergillosis are a problem in immunocompromised children after they are exposed to air-borne spores. 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. Aspergillosis causing spinal cord compression due to epidural abscess formation and hypertrophic pachymeningitis is a rare entity; 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 Aspergillus 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 paraparesis 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 Aspergillus 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, ciprofloxacain 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.

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. Recently, there has been some increase in the incidence of invasive aspergillosis in the acquired immunocompromized individuals but the childhood disease remains a rarity. 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.

Riaz Ahmed
Department of Child Health, Royal Hospital, PO 1331, Muscat, Oman. E-mail: paedbrain@yahoo.com

References
Invasive aspergillosis of the brain: Improvement with liposomal amphotericin B and itraconazole

Sir,

Intracranial aspergillosis is often an extension from paranasal sinuses and is usually resistant to medical or surgical therapy.\[1,2\] We report a case that showed good response to a combination of liposomal amphotericin B and itraconazole after having no response to amphotericin B deoxycholate.

A 43-year-old male presented with fever, diplopia, headache, left focal seizures and weakness on the left half of the body of one month duration and nasal obstruction with difficulty in breathing due to nasoethmoidal mass of two weeks duration. The mass was excised and found to have dichotomously branched septate hyphae with conidial heads suggestive of Aspergillus fumigatus on histopathology. A few years back he had undergone balloon mitral valvotomy for rheumatic mitral stenosis and his cardiac status was stable since then. On admission, he had moderate fever of about 100°F with no lymphadenopathy. On neurological examination patient was drowsy, not responding to verbal commands but localizing the painful stimuli. Proptosis was present on the right side. Neck was supple. There was face-arm-leg weakness (2/5 on MRC scale), spasticity, brisk reflexes and extensor plantar response on the left side. His serology for HIV was negative. The MRI revealed mixed intensity heterogeneous mass lesion on T2 weighted image with thick irregular enhancement on T1 contrast image. The mass extended from the sphenoid sinus to the left frontal and parietal lobe and then through the anterior part of the corpus callosum to the contralateral frontal lobe [Figures 1a and 1b].

Patient was given two six-week courses of amphotericin B deoxycholate. No improvement in symptoms or regression of mass was found on MR imaging. He was then treated with liposomal amphotericin B given intravenously 5 mg/kg per day for six weeks along with oral itraconazole 200 mg daily. There was gradual improvement in his consciousness by third third week and his power improved to 4+ on 0-5 MRC scale with decrease in spasticity. His proptosis improved and he walked without support. Oral itraconazole was continued for four months during which he resumed his office and performed mental work. The MRI showed reduction of lesion to nearly half of its original size on T2 image with only a few specks of enhancing areas seen within the lesion on T1 contrast image [Figures 1c and 1d]. The areas which did not enhance but showed T2 hyperintensities, were presumed largely to be due to healing by gliosis as there was shrinkage of the brain tissue evidenced by prominent cortical sulci.

The mortality is reported to be nearly 100% in immunocompromised patients,\[3\] but some immunocompetent patients have survived this disease with antifungal chemotherapy and surgical resection.\[4,5\] Earlier reports of good response to liposomal amphotericin B\[4\] and itraconazole\[4,5\] prompted us to put our patient on a combination chemotherapy and the response was good as assessed by clinical and imaging modalities. Till a better treatment regimen is found, this combination chemotherapy may be used to treat intracranial aspergillosis with satisfactory outcome.

Sunil Pradhan, Ramakant Yadav
Department of Neurology, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Raebareli Road, Lucknow - 226 014, India.
E-mail: drspradhan@rediffmail.com