Cryptococcal meningitis in a none-HIV infected five month old infant with rickets: Case report

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Abstract
Cryptococcal is an invasive fungal disease, now endemic in the tropics. It is largely transmitted through inhalation, but can be transmitted locally through skin and eyes. Mostly, it causes disease in immune compromised individuals, especially older children and adults, where it causes disseminated disease.

Baby JG aged 5 months presented with a prodrome of respiratory symptoms. His anterior fontanel was wide and bulging, and had poor muscle tone. A week later, he developed convulsions, and a depressed sensorium. Haemogram showed a leucocytosis. Bone metabolism showed serum low phosphate and high alkaline phosphatase. Cerebrospinal fluid biochemistry was unremarkable, but microscopy was positive for Indian ink stain and cryptococcal antigen. HIV PCR test was negative. Clinical improvement was observed on institution of antimeningitic therapy, and intravenous fluconazole, vitamin D3 and calcium supplementation, but another spike was noted on day 7 of therapy. The findings of cryptococcal meningitis in HIV sero-negative infant is very rare. Immune reconstitution syndrome may occur during treatment.

High index of suspicion for cryptococcosis is needed in high risk children with sub-acute presentations of meningitis, and a relatively normal CSF cell counts and biochemistry. Routine fungal screening of CSF for all suspected children is justified.

Key words: Cryptococcosis, Leucocytosis, Sero-negative, Antimeningitic

Introduction
Cryptococcosis is an invasive fungal disease caused by a monomorphic encapsulated yeast. There are various variants, but cryptococcus neoformans var gatti is the commonest worldwide [1]. It is commonly found in soil, in avian droppings, on fruits and vegetables.
hospital, had a birth weight of 3.5kg. Perinatal history was unremarkable. The mother was a housewife, and exclusively breastfed the child. The child’s immunization was up to date. His growth chart revealed weight faltering in the previous two months. Findings on admission revealed a sick looking child, was febrile- 39°C, weighed 5.8 kg, had some dehydration and mild pallor. On neurologic examination he was drowsy, hypotonic, and poorly responsive to pain. The anterior fontanelle was wide and bulging. The head circumference was and poorly responsive to pain. The anterior fontanelle was wide and bulging. The head circumference was

The initial impression was meningitis in a child with rickets. A lumbar puncture done immediately was not under pressure. Cerebrospinal (CSF) fluid analysis revealed protein of 30g/dl, glucose of 160mg/dl, leucocytes 0-3phf, Gram stain and Zeehl Nielsen stains were negative, but the Indian ink stain and cryptococcal antigen (CRAG) test were positive. Blood slide for malaria was negative, on the haemogram done; leucocytosis of about 15% - 30% in developed countries, but may rise to the meningitis. However this was not considered at that point. Detection of cryptococcal antigen (capsular material) by culture of CSF, sputum and urine provided definitive diagnosis [9]. Blood cultures may be positive in heavy infections. Indian ink of the CSF is a traditional microscopic method of diagnosis [10], although the sensitivity was poor in early infection, and may miss 15-20% of patients with culture-positive cryptococcal meningitis [11]. Cryptococcal antigen from CSF is the best test for diagnosis of cryptococcal meningitis in terms of sensitivity [12]. However, species isolation was also not done in this case.

Routine screening for HIV infected patients with meningitis is advised [13]. Serial lumbar punctures may have been useful for monitoring [12,13]. Standard therapy remains a combination of intravenous amphotericin B and either fluconazole or flucytosine for 2 weeks, then followed with oral fluconazole for 8-10 weeks [9,15,16].

The Immune Reconstitution Inflammatory Syndrome (IRIS) was described in immunocompetent hosts with meningitis caused by C. gattii and C. grubii. Several weeks or even months into appropriate treatment, there was sudden onset deterioration with worsening meningitis symptoms and progression or development of new neurological symptoms. IRIS was however much more common in immune-compromised hosts (25% versus 8%). In severe IRIS cases, treatment with systemic corticosteroids was utilized.

Mortality rate from cryptococcal meningitis is about 15% - 30% in developed countries, but may rise
up to 70% in low income countries [3]. Mortality rates are higher in HIV infected patients, who have relapse rates of more than 50% but was reported to be unusual in adequately treated in non-HIV infected patients. However, neurologic sequelae such as hydrocephalus, deafness, cranial nerve palsies, visual defects, seizures, ataxia are common.

Conclusion

Cryptoccocal meningitis in HIV sero-negative infant was diagnosed in a 5 month infant whose initial impression was like meningitis in a child with rickets. Clinicians must have a high index of suspicion for cryptococcosis, especially when patients have sub-acute or chronic presentations of meningitis, relatively normal CSF cell biochemistry, and poor response to initial course of antibiotics. In view of high prevalence of high risk children including the malnourished, preterms and HIV infected children in our settings, routine screening of CSF for all suspected children is justified.

Conflict of interest: Authors declare that we have no conflict of interest.

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References

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