

Cryptococcal Meningitis – A Report of Two Cases

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Introduction

Cryptococcus neoformans is an encapsulated yeast that is found in soil that has an alkaline pH and is rich in nitrogen, containing excreta of turkeys and pigeons. Human beings get infected when they are exposed to dust containing bird droppings. The fungus causes cutaneous, pulmonary, meningeal and disseminated infections.

Before the onset of the AIDS era cryptococcal infections were extremely rare but now it is the fourth most common opportunistic infection in patients with AIDS.¹ The disease can also occur in persons with other forms of immunodeficiency especially when cell mediated immunity is diminished. In 1991, 96% of all cases of cryptococcosis in New York City were HIV related. The incidence rates in other parts of the world are even higher. In sub-Saharan Africa the incidence of cryptococcosis is as high as 30%.¹

Cases of cryptococcal meningitis are being reported with increasing frequency from India and Nepal, both in immunocompromised and immunocompetent hosts and it appears that the disease is probably not as uncommon as it seems in this part of the world.²⁻⁵

Case Reports

Case –1

A forty-four years female from Kushma, Parbat District presented with headache, dyspepsia and sleeplessness. On examination she was found to have signs of meningeal irritation and raised intracranial tension. CSF examination revealed clear fluid, with normal cell count, protein and sugar levels. Gram stain showed poorly stained Gram positive budding yeast cells approximately 5

to 10 microns in diameter. An India ink preparation revealed budding yeast cells surrounded by wide refractile capsules. Ziehl-Neelsen stain showed no Acid Fast Bacilli. On culture, there was no growth on bacteriological media however, Sabouraud's Dextrose Agar (SDA) showed growth of buff coloured mucoid colonies, which were identified as *Cryptococcus neoformans* by their ability to grow at 37°C, a negative germ-tube test and biochemical tests.⁶ The patient serum was tested for the presence of anti-HIV antibodies by a dot blot and micro-ELISA and was found to be positive. She was started on fluconazole to which she responded.

Case –2

A thirty-seven years old man from Kushma, Parbat District presented with bilateral ear discharge, headache, loss of consciousness on two occasions and blurring of vision. On examination he was found to have bilateral chronic suppurative otitis media with VIth cranial nerve palsy, nuchal rigidity and retrobulbar neuritis. CSF examination revealed clear fluid with a cell count of 330/mm³, predominantly lymphocytes. Sugar and protein levels were within normal limits. Gram stain of CSF smear showed Gram positive budding yeast cells and India ink preparation showed budding yeast cells with capsules. Ziehl-Neelsen stain was negative for Acid Fast Bacilli. SDA showed growth of mucoid colonies after forty-eight hours of incubation, which were identified in a similar way as in the first case. The patient tested positive for presence of anti-HIV antibodies by a dot-blot and micro-ELISA technique. He was started on fluconazole but left the hospital against medical advice.

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Discussion

The incidence of cryptococcal meningitis is on the increase in all parts of the world.¹ There are increasing numbers of such infection being reported in the Indian subcontinent as well.²⁻⁵ In India the incidence of cryptococcal meningitis has been reported to be as low as 5.6% and as high as 34.8% in HIV infected individuals.^{3&4} There is reason to believe that the number of infections may be somewhat similar in Nepal especially with the increasing number of HIV infected subjects.

The disease typically presents with features of chronic meningitis and may at times be confused with tubercular meningitis which is much more common in our part of the world. Cytological and biochemical analysis of CSF is not adequate as the findings may be very non-specific. The immune status of the patient also may not be evident initially, as was the case with both our patients in whom, HIV testing was done only after *Cryptococcus* was detected in the CSF samples and not the other way round. Simple techniques like examination of an India ink preparation of all CSF samples would ensure that such cases are not missed, as institution of anti-fungal agents at an early stage would mean a better prognosis for the patient. It should also be borne in mind that a high index of suspicion on the part of the attending physician is of utmost importance especially in cases presenting with sub-acute or chronic meningitis irrespective of the immune status of the patient.

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