



Case Report

A case of systemic cryptococcosis in an immunocompromised host : A chance diagnosis by FNAC

Soumya B M¹, Nisarga Rani R^{1,*}, Rajalakshmi D¹, S S Hiremath¹

¹Dept. of Pathology, IJM Medical College, Bangalore, Karnataka, India



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ABSTRACT

Cryptococcus neoformans is the most common life threatening fungal pathogen that infects patients with Acquired Immuno Deficiency Syndrome (AIDS). We present a case of 14 year old female came with complaints of bilateral non tender lymphadenopathy and mass per abdomen. On FNAC from lymphnode and spleen showed varying sized of cryptococcal organism which was further confirmed with Indian ink preparation. Following Human Immunodeficiency Virus test showed positivity. In immunocompromised individuals Cryptococcosis is the prevailing cause of death among opportunistic fungal disease. Greater number of studies showed the cryptococcosis in lung, meninges and skin whereas lymph node and spleen involvement is considered to be rare. We report a case of systemic cryptococcosis presenting as cervical lymphadenopathy and splenomegaly, diagnosed on fine needle aspiration cytology.

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1. Introduction

The global burden of HIV-associated cryptococcosis approximates one million cases annually worldwide. The annual incidence is 0.2 – 0.9 cases per 100,000 in the general population.¹ Many reports from India suggest that mycobacterium tuberculosis, oral candidiasis, cryptosporidiosis and pneumocystis carini are common opportunistic infections in AIDS followed by cryptococcosis and toxoplasmosis.²

Most common site of involvement is lungs or central nervous system followed by blood, prostate, skeletal system and skin. Cryptococcosis is a systemic mycosis involving lung s or central nervous system and less frequently the blood, skin, skeletal system, and prostate. Evidence of cryptococcal lymphadenitis is uncommon in either immunocompromised or immunocompetent person. Only in widely disseminated cryptococcosis there is likely to be association of lymph node and spleen cryptococcosis.²

Disseminated cryptococcal infection is life threatening condition. Expeditious early diagnosis is of the utmost

importance. We report here the cytological findings in fine needle aspirate of the lymph node and spleen reporting systemic cryptococcosis.

2. Case Report

A 14-year-old girl was referred for FNAC with chief complaints of bilateral swelling in neck and abdominal heaviness, fever since two months. Family history of HIV positive parents.

On examination patient was poorly built, malnourished. On general physical examination, mild pallor and bilateral non tender cervical lymphadenopathy, largest measuring 4x3 cm. On systemic examination splenomegaly was noted 10 cm below left costal margin and mild hepatomegaly. Her blood investigations revealed anaemia (9g/dl) and elevated ESR 40mm/hr.

Fine needle aspiration of cervical lymph nodes and spleen was performed which yielded purulent aspirate. H&E and Giemsa stained smears showed numerous encapsulated budding yeast cells of varying sizes surrounded by a halo. Background showed extensive necrosis, neutrophils, lymphocytes and few macrophages.

* Corresponding author.

E-mail address: nisarga.rani91@gmail.com (N. Rani R).

Indian ink preparation done on aspirate highlighted capsule of Cryptococci. ZN stain for AFB is negative. A diagnosis of systemic cryptococcosis was made on FNA smears of lymphnode and spleen.

Patient was referred to Integrated counselling and testing centre (ICTC) and was found to be reactive. She was put on antifungal treatment and referred to ART centre for further management. Patient was lost for further follow up.

3. Discussion

Human immunodeficiency virus (HIV) infection has emerged as a global epidemic and the data of the Center for Disease Control and prevention, cryptococcosis occurs in about 7% of acquired immunodeficiency syndrome (AIDS) patients.³ Cryptococcus neoformans which is present worldwide, particularly in soil contaminated by pigeon excreta spread through respiratory system by inhalation of infected dust, but dissemination to CNS, skin, bone, lymph node, kidney and other viscera occurs.³ In HIV patients most common manifestation is meningitis and pneumonia. Dissemination may cause disease in multiple sites.⁴

Cryptococcus lymphadenitis is an uncommon form of extrapulmonary cryptococcosis, which is one of the 'AIDS defining criteria' according to the Centre for Disease Control and prevention guidelines.³ In a large Indian study, Kamana et al analysed lymph node specimen from 300 HIV-infected individuals. Most patients had tuberculosis or reactive lymphadenitis. Cryptococcus was found in only 4/300 lymph node samples (1.3%).⁵ Similarly Srinivasan et al reviewed 15 cases of cryptococcal lymphadenitis, all diagnosed by FNAC. In their review, 8 of the 15 patients had HIV infection and 5/8 biopsies showed necrotising granulomas was observed.⁶

Sample of CSF, sputum, bronchial washing and FNAC smears of the lymph nodes, thyroid, spleen, adrenal gland, bones and the lung are used for detection of cryptococcus. Direct microscopic examination with toluidine blue/ Indian ink staining showed round to oval, varying sized range from 3.5 to 8 mm in diameter, with capsular halo around.¹ Cultural isolation of Cryptococcus on most routine mycological or bacteriological media, serologic test, molecular identification of organism's DNA, and also CT and MRI scans are available.

FNAC can be a simple and useful technique in diagnosis of fungal infections. Its utility is enhanced by the ability to immediately prepare smears and simultaneously obtain samples for cultures. This method can expedite the potentially vast differential diagnosis in immunocompromised patients. Identification of these organisms, with or without cellular reactions, can lead to a rapid diagnosis and importantly an early initiation of specific and life-saving treatment.

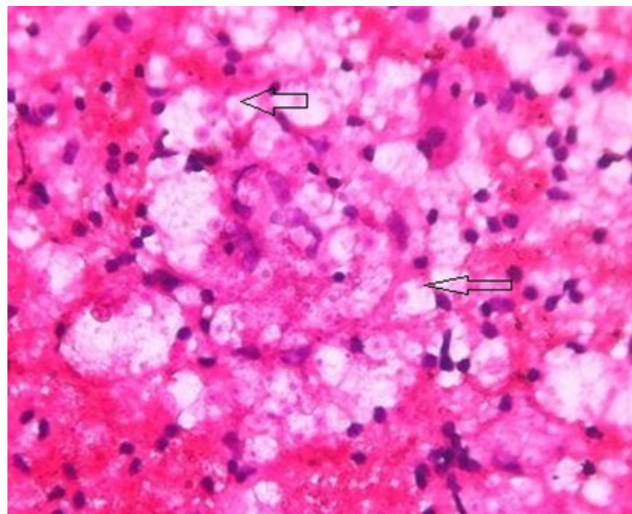


Fig. 1: Splenic aspirate showing intracytoplasmic cryptococci against background of mixed population of lymphoid cells, histiocytes and foamy macrophages.(H&E stain, 400x)

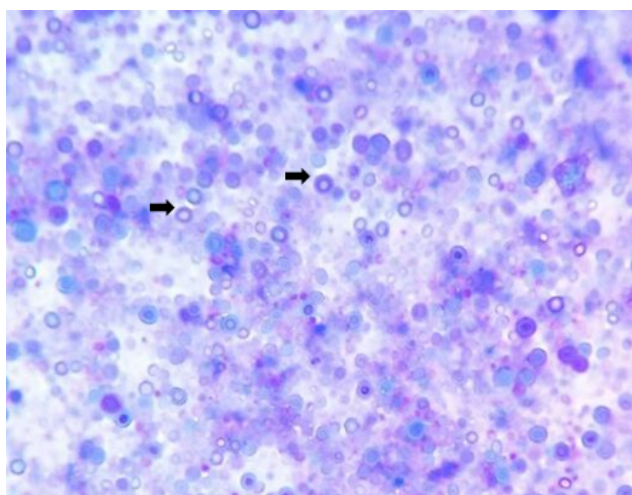


Fig. 2: Lymph node aspirate showing extracellular Cryptococci (black arrow) (Giemsa stain, 100x)

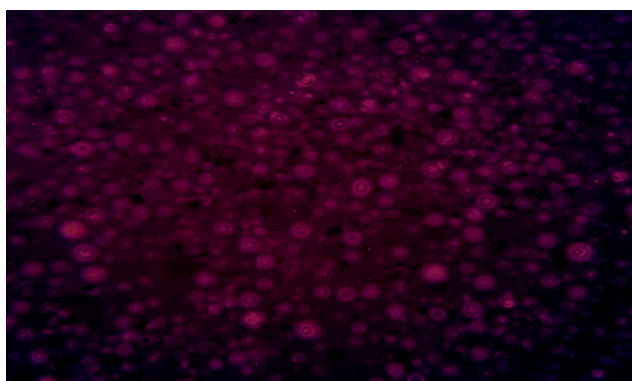


Fig. 3: India Ink preparation of lymph node aspirate showing numerous cryptococci highlighting the capsule, 100x.

4. Conclusion

In resource poor developing countries, FNAC in AIDS is an ideal first line diagnostic technique which can provide quick cytodiagnosis of opportunistic infections like cryptococcosis. This rapid diagnosis can give way to early initiation of specific and life saving treatment.

5. Conflict of Interest

None.

6. Source of Funding

None.

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Author biography

Soumya B M Assistant Professor

Nisarga Rani R Post Graduate

Rajalakshmi D Post Graduate

S S Hiremath Professor

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