



## CASE REPORT- FINE NEEDLE ASPIRATION CYTOLOGY DIAGNOSIS OF CRYPTOCOCCAL LYMPHADENITIS WITH CRYPTOCOCCEMIA IN NEWLY DIAGNOSED IMMUNOCOMPROMISED CHILD.

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### ABSTRACT

In HIV positive cases, opportunistic infections like Tuberculosis, Cryptococcus, Candida infections are common in our country. Cryptococcus infection commonly affects lungs, central nervous system, skin, mucous membranes, bone marrow and uncommonly lymph nodes (1,2). **Case Report-** A 10 years female patient presented with enlarged cervical lymph nodes with unknown immunological status. FNAC of lymph nodes revealed numerous capsulated yeast forms of cryptococci. Culture of lymph node aspiration and blood were positive for growth of the same organism. Then patient was investigated for HIV and Tuberculosis infection. Patient was found to be HIV positive. **Conclusion-** FNAC is very important diagnostic tool for evaluation of lymphadenopathy. Lymphadenitis is very uncommon primary clinical presentation in cryptococcal infection.

**KEYWORDS :** FNAC, Cryptococcal Lymphadenitis, AIDS.

### INTRODUCTION:

Cryptococcal infection is caused by organism *Cryptococcus Neoformans*. It commonly affects respiratory system, meninges, skin, GIT, bone marrow and spleen. But in AIDS, cryptococcal lymphadenitis without meningoencephalitis being the presenting feature is very uncommon (4, 5,7,8,9).

Cryptococcal lymphadenitis though it is difficult on clinical and radiological study, FNAC is confirmatory diagnostic tool. Cytomorphologically smears stained with Papanicolaou (PAP) stain, Haematoxylin & Eosin (H&E), Giemsa and Periodic Acid-Schiff (PAS) stains show encapsulated budding yeasts. On PAS staining, PAS positive capsule is highlighted. So, FNAC plays important role in identification of organism. Microbiological investigation like culture of lymph node aspiration material and blood are also complimentary test.

### Case Report:

Herewith we are reporting a case of 10 years female child with complaints of multiple left cervical enlarged lymph nodes and weight loss, intermittent fever with reduced appetite.

On admission, TB and HIV status of this patient were not known. There was history of death of mother 5 years back with unknown reason. HIV/TB history could not be retrieved from family members.

On Clinical examination: Female child was poorly built, malnourished, cachexic and having multiple left cervical enlarged lymph nodes, largest measuring was 1.5x1 cm. No CNS & respiratory system related signs were seen.

Patient investigated thoroughly,

In Complete blood count Haemoglobin was 8 gm%, Total Leucocyte Count (TLC) was 9200/microL and Platelet count was  $507 \times 10^3$ /microL (Mild thrombocytosis). Erythrocyte Sedimentation Rate (ESR) was 135 mm/hr which was increased. C Reactive Protein (CRP) was 74 mg/dl which was significantly increased.

Liver Function Tests (LFT) were within normal limits.

ELISA for Hepatitis B & C antigen were Negative But, HIV was IMMUNOPOSITIVE.

CD4 count was 300 cells/microL

USG local (cervical region) revealed necrotizing cervical lymphadenopathy.

Xray Chest showed radiopacity in all right lobes and upper zone of left lung suggested consolidation. Cardiac size was normal, trachea was in midline.

Clinician has advised Fine Needle Aspiration Cytology FNAC) of left sided cervical lymph nodes. FNAC was done. On aspiration, greyish white material was obtained. Microscopically, smears showed moderate cellularity showing clusters of reactive lymphoid cells, few histiocytes, few epithelioid cell granulomas and macrophages with numerous encapsulated budding yeast cells surrounded by halo on Giemsa and Haematoxylin & Eosin, Gram stain. The capsule was demonstrated by India Ink & PAS stain.

ZN stain did not reveal acid fast bacilli, thus ruling out coexisting TB infection.

These cryptococcal organisms was differentiated from other fungal infections like Blastomycosis, Histoplasmosis and Candida species.

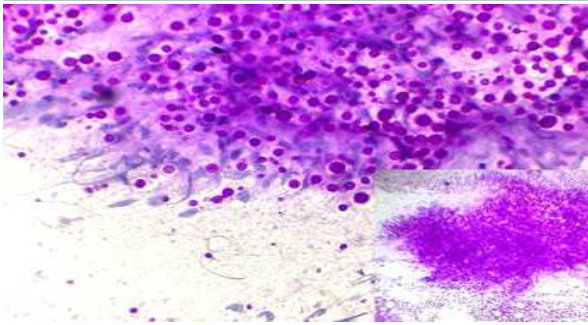
CBNAAT of both lymph nodes aspirate and sputum came out to be negative.

On Microbiological investigation, Blood culture and Lymph node aspiration material showed cryptococcal colonies growth which was confirmed by microscopic examination.

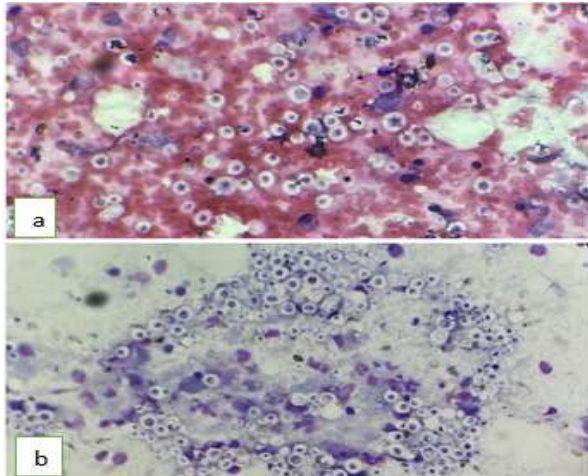
Diagnosis of cryptococcal lymphadenitis was made, the patient was immediately started on antifungal treatment. Patient was cachexic and not responding to the therapy and died on 10<sup>th</sup> day due to dyspnea and severe respiratory failure.

### DISCUSSION:

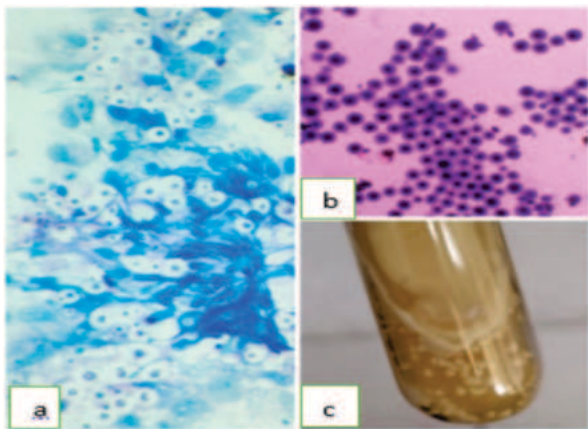
In the present case, cryptococcosis was first diagnosed on FNAC in 10 years girl child. She was not previously evaluated for diseases like Acquired Immuno deficiency Syndrome (AIDS) or Tuberculosis. Cryptococcal infection can occur as opportunistic infection in immuno compromised cases of AIDS, TB and post organ transplants and also in non-HIV infected cases (1,6,7,8,9). In AIDS, cryptococcal lymphadenitis occurs as less common opportunistic infection than other fungal infections and tuberculosis (1,3).



**Fig.1:** FNAC smear showing PAS positive Cryptococcal capsule with epithelioid cell granuloma (High magnification). Inset showing same (Low magnification).



**Fig. 2:** Cryptococci with clear halo surrounding it (a. H&E stain, b. Giemsa stain. High magnification)



**Fig.3:** a. ZN stain does not reveal acid fast bacilli (Oil emersion). b. Gram stain showing cryptococcal colonies (High magnification) c. Lymph node aspirate showing growth of cryptococcal yeast on culture.

These Cryptococcal fungi are budding yeasts, oval to spherical measuring 5-15 micrometre in diameter with thick gelatinous mucopolysaccharide capsule. These organisms are diagnosed on routine staining like H& E and Giemsa and special stains like India Ink, PAS, GMS, Mucicarmine (1,4,7).

In the present case, there was growth on both lymph node aspiration and blood on culture that suggests cryptococemia with cervical fungal lymphadenitis. Cryptococemia indicates wide dissemination of Cryptococci with respiratory system involvement. Lymph node biopsy could not be taken. Diagnosis was confirmed on cytology and supported by microbiological study.

She was investigated for TB and HIV. Radiological and microbiological investigations revealed lung involvement. And patient was found out to be HIV seropositive.

After quick and proper diagnosis, patient was immediately started on antifungal and Anti Retroviral Therapy (ART). Patient was cachexic, deteriorated, not responded to the therapy and succumbed to death due to dyspnoea and severe respiratory failure.

**CONCLUSION:**

Fine needle aspiration cytology is simple, minimally invasive and useful technique in the diagnosis of fungal infections. Cryptococcal cervical lymphadenitis is rare clinical presenting manifestation. In this case, initial diagnosis of cryptococcal infection done on FNAC was very beneficial to the patient in starting antifungal treatment and investigations for HIV status with Anti Retroviral Therapy (ART).

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