



FINE NEEDLE ASPIRATION CYTOLOGY OF CRYPTOCOCCAL LYMPHADENITIS: A RARE CASE PRESENTATION

Dr. Rohit Bhalara*

Department of Pathology, P.D.U. Medical College, Rajkot - 360001 (Gujarat) India.

***Author for Correspondence: Dr. Rohit Bhalara**

Department of Pathology, P.D.U. Medical College, Rajkot - 360001 (Gujarat) India.

Article Received on 23/09/2015

Article Revised on 12/10/2015

Article Accepted on 02/11/2015

ABSTRACT

Cryptococcal infection most commonly affects the lung, meninges, and skin. The involvement of lymph node in cryptococcosis is considered to be rare entity and disseminated cryptococcosis is life threatening disease seen more commonly in immune-compromised patient chiefly affecting cervical and mediastinal lymph nodes. We present the case of Cryptococcal lymphadenitis diagnosed by fine needle aspiration cytology of involved cervical lymph nodes in acquired immune deficiency syndrome (AIDS) patient. Aspirated material stained with Hematoxylin & Eosin stain and Light microscopy show many rounded capsulated structures with clearing zone (Cryptococcus) which was confirmed by Periodic acid Schiff (PAS) stain.

KEYWORDS: Cryptococcal, Acquired Immunodeficiency syndrome (AIDS), fine needle aspiration cytology (FNAC).

INTRODUCTION

Cryptococcosis is an opportunistic fungal infection caused by the encapsulated yeast *Cryptococcus neoformans*.^[1] Primary infection usually occurs through the respiratory system but it can disseminate to central nervous system (CNS), skin, kidney, bone and other viscera. Disseminated cryptococcosis is a life threatening disease seen more commonly in patients with acquired immune deficiency syndrome (AIDS) and other forms of immunosuppression.^[2] Cryptococcosis occurs in about 7% of acquired immunodeficiency syndrome (AIDS) patients.^[3] Fine needle aspiration cytology (FNAC) of Cryptococcal lymphadenitis show many rounded capsulated fungal structures with clearing zone which is confirmed by Periodic acid Schiff (PAS) stain. Diagnosis of Cryptococcal lymphadenitis by FNAC provides cost effective and quick diagnosis for faster treatment.

CASE REPORT

A 31 year old male patient was admitted in TB chest department with chief complain of fever and altered sensorium for 4 days. Patient had history of weight loss since one month. Patient was a known case of HIV infection. He had no history of seizure, nor any focal neurological deficit, head injury, chronic cough.

On examination 2-3 enlarged lymph nodes measuring 0.8-1.0 cm in right supraclavicular region was palpated. Axillary or inguinal lymph nodes were not palpable. Clinically tuberculous meningitis was suspected. His blood investigations revealed hemoglobin level of 7.1gm%, total leukocyte count of 4200 cells/cu mm and

CD4 counts of 67 cells/cu mm. Patient was referred to our cytopathology laboratory for lymph node FNAC.

Fine needle aspiration of supraclavicular lymph node was performed and yielded pus like material. Prepared smears are stained with Hematoxylin & Eosin (H & E) stain and one smear was stained with Ziehl-Neelsen (ZN) stain for detection of acid fast bacilli (AFB). Smears stained by H & E stain revealed predominantly mature lymphoid cells with few histiocytes and there were many rounded capsulated structures with clearing zone (fungal lesion- cryptococcal type) (Fig. 1) and degenerated granulomas with eosinophilic necrotic material also evident. (Fig.2) Ziehl-Neelsen (ZN) staining did not reveal any acid fast bacilli, so ruled out coexisting tuberculous infection. A Diagnosis of Cryptococcal lymphadenitis was made on H & E stain smears and with help of PAS stain (Periodic acid Schiff) (Fig. 3).

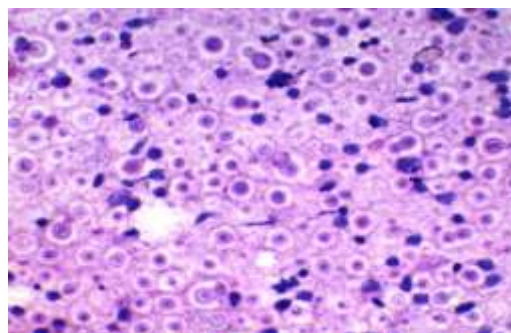


Fig. 1- H & E stained FNAC smear 40X Showing rounded capsulated structures with Clearing zone (Cryptococcus).

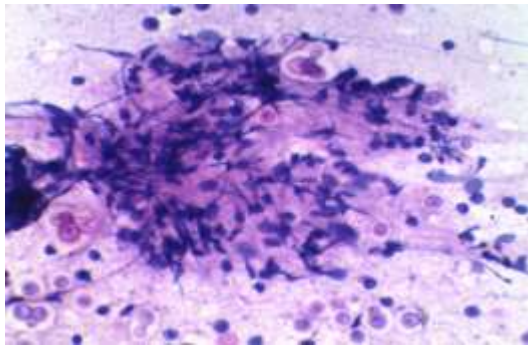


Fig. 2- H & E stained FNAC smear 40X Showing degenerated granuloma.

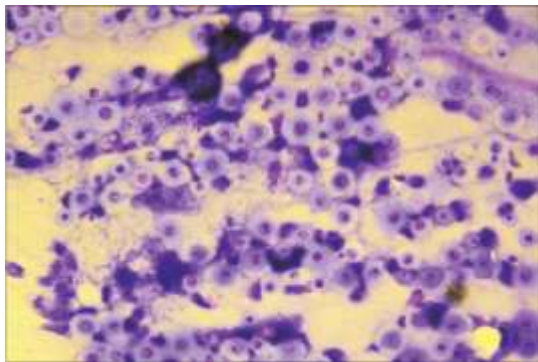


Fig. 3 - PAS stained FNAC smear 40X Cryptococcus can be seen with stained Capsule.

DISCUSSION

Cryptococcosis is a chronic opportunistic infection caused by the encapsulated yeast *Cryptococcus neoformans* which is present particularly in soil contaminated by pigeon excreta.^[1] Primary infection is usually through respiratory system by inhalation of infected dust, but dissemination to CNS, skin, bone, lymph node, kidney and other viscera occurs.^[2]

Cryptococcosis is one of the opportunistic infection in immune compromised patient and so diagnosis is of the utmost importance since once *Cryptococcus* disseminates, it becomes life threatening. Identification of *Cryptococcus* has been reported from cytological specimens of CSF, sputum, bronchial washing and FNAC smears of the lymph nodes, thyroid, spleen, adrenal gland, bones and the lung.^[4,5]

In humans, the spectrum of the disease varies from asymptomatic colonization of the airways to meningitis and other serious diseases, fever to pneumonia and less commonly lymph node enlargement. *Cryptococcus* meningitis and disseminated cryptococcosis have gained importance recently because of rapid rise in the worldwide incidence of HIV infection. *Cryptococcus* lymphadenitis is an uncommon form of extra pulmonary cryptococcosis, which is one of the AIDS defining criteria according to the Centre for Disease Control and Prevention guidelines.^[6]

Cryptococcus is yeast like budding fungi, appear as avoid to spherical thick walled surrounded by gelatinous capsule. Unlike other fungal infections, granulomatous

and other inflammatory cell responses are very mild which was seen in our case. Organism load is variable, more in immune-compromised as compared to immunocompetent patients.

Laboratory diagnosis of *Cryptococcus* infection includes the use of special stain such as India ink, periodic acid Schiff, Alcian blue and mucicarmine stains. Serological detection of *Cryptococcus* antigens by latex agglutination and culture are also used. In our case numerous budding yeast cells surrounded by haloes were seen. Hence, the diagnosis of cryptococcosis can be made by cytology with H & E and PAS stains.

CONCLUSION

Cryptococcus fungal infection is rarely seen in lymph nodes especially in FNAC findings as it was found in our case. So diagnosis of *Cryptococcus* lymphadenitis should be kept in mind whenever patient is immune-compromised and no other infective pathology findings are seen. Again special stain is helpful for final confirmation of exact typing of fungal lesions. FNAC can thus be a simple and useful technique in the diagnosis of fungal infection. Identification of these organisms by FNA helps to initiate prompt specific and life saving treatment and reduce morbidity and mortality.

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