Case Report

Diagnosis of cryptococcal lymphadenitis in HIV infected patient on fine needle aspiration Cytology: A Case Report

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Abstract
Cryptococcal infection most commonly affects the lung, meninges and skin. The involvement of lymph node in cryptococcosis is considered to be rare and is usually observed in cases where the disease is very widely disseminated. Disseminated cryptococcosis is a life threatening disease seen more commonly in patients with acquired immunodeficiency syndrome (AIDS) or other forms of immune suppression. We report a case of AIDS with cryptococcal lymphadenitis, diagnosed by fine needle aspiration cytology of the involved lymph node and was subsequently confirmed by histopathological examination of the involved lymph node.

Keywords: Lymphadenitis, Cryptococcus neoformans, Fine needle aspiration cytology, Acquired immunodeficiency syndrome

1. Introduction
Cryptococcosis is an opportunistic fungal infection caused by Cryptococcus neoformans. This mycosis occurs commonly in the immunocompromised hosts including the population infected with human immunodeficiency virus (HIV).1 Definitive diagnosis of cryptococcosis depends on the fungal isolation from sputum, cerebrospinal fluid, or tissue culture. The other reliable method for diagnosis is microscopic examination of tissue biopsy specimen specially stained with mucicarmine, periodic acid-Schiff (PAS), or Gomori’s methenamine silver (GMS) stains2. Data of the Center for Disease Control and prevention shows that cryptococcosis occurs in about 7% of Acquired Immunodeficiency Syndrome (AIDS) patients3. Primary infection is usually through the respiratory system but dissemination to central nervous system (CNS), skin, bone, lymph node, kidney and other viscera may occur. Disseminated cryptococcosis is a life-threatening disease seen more commonly in patients with AIDS and other forms of immunosuppression4.

Fine needle aspiration cytology (FNAC) of lymph node in patients with cryptococcal lymphadenitis provides an economical and rather quickly accomplished cytdiagnosis.

2. Case Report
A 35 years old male presented to outpatient department with complaints of fever and bilateral neck swelling since one and half month with history of anorexia and weight loss. Patient was a known case of HIV infection and was on anti retroviral treatment. On examination, he was thin built and poorly nourished. Multiple swellings were seen present over both the sides of the neck, largest measuring 1.8 cms in diameter, soft to firm, discrete, mobile and non tender. His blood investigations revealed hemoglobin level of 9.8gm%, total leukocyte count of 6900 cells/cu mm and CD4 counts of 47 cells/cu mm. Erythrocyte sedimentation rate (ESR) by Westergren’s method was 118 mm at the end of one hour; other biochemical investigations were within normal limits. Smears from FNAC of left supra clavicular lymph node stained by H & E stain, revealed predominantly mature and reactive lymphoid cells, few histiocytes, occasional eosinophils, macrophages and plasma cells, also there was occasional cluster of ( 5 to 15 ) variable sized yeast surrounded by halos, occasional granuloma was also evident . The capsule was demonstrated by Periodic Acid Schiff (PAS) stain; Fig I, Fig. II, Ziehl Nielsen’s (ZN) staining did not reveal any acid fast bacilli, ruling out any coexisting tuberculous infection. A diagnosis of cryptococcal lymphadenitis was made and was subsequently confirmed by histopathological examination (Fig. III). The patient was immediately started on antifungal treatment to which he responded.

Figure 1: PAS Stained FNAC smear 40X Cryptococcus can be seen with the stained capsule. Inset showing the magnified view of the stained capsule.

Figure 2: PAS Stained FNAC smear 10X Cryptococcus can be seen with the stained capsule. Inset showing the magnified view of the stained capsule.
3. Discussion
Cryptococcosis is a chronic opportunistic infection caused by the encapsulated yeast Cryptococcus neoformans which is present worldwide, particularly in soil contaminated by pigeon excreta. 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. Cryptococcal meningitis and disseminated cryptococcosis have gained importance recently because of the rapid rise in the world wide incidence of HIV infection. 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. 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. The organism is surrounded by a mucopolysaccharide capsule and measures 5-15μm in diameter. Special stains (Gomori’s Methanamine Silver, PAS and Mucicarmine) facilitate the identification of this organism. Granulomatous inflammation, which may be slight or absent, can be caused by cryptococci. In this case Smears from FNAC of left supra clavicular lymph node stained by H & E stain, revealed predominantly mature and reactive lymphoid cells, few histiocytes, occasional eosinophils, macrophages and plasma cells, also there was occasional cluster of (5 to 15) variable sized yeast surrounded by halos, occasional granuloma was also evident (Fig. I). The capsule was demonstrated by Periodic Acid Schiff (PAS stain; Fig. II) Hence, diagnosis of cryptococcosis can be made cytologically on obtained smears when the mucopolysaccharide capsule is visualized with special stains.

4. Conclusion
The diagnosis of Cryptococcosis could be definitely made by FNAC in the present study. FNAC can thus be a simple and useful technique in the diagnosis of fungal infection. Identification of these organisms, with or without cellular reaction can lead to a rapid diagnosis and importantly an early initiation of specific and life saving.

References