Primary Cryptococcal Prostatitis- Rare Occurrence

Vinaya B Shah*, Pallavi A Patil**, Vipul Agrawal***, Harish K Kaswan***

Abstract
Cryptococcosis is a well recognized infection in immunocompromised patients. Cryptococcal infection primarily involves the lung and is hematogeneously spread to other organs. Sometimes it might affect the genitourinary tract. The prostate gland is a rare site of primary infection due to cryptococcus neoformans. We report a case of granulomatous inflammation in the prostate as a result of crypyococcus neoformans infection in a 70 year old immunocompetent patient, a non diabetic, which was diagnosed by transrectal ultrasound guided biopsy.

Case Report
A 70 year old non diabetic, non hypertensive was admitted with complaints of frequency, dysuria and fever since 1 week. His general condition was satisfactory. His temperature was 39.5º C. The rest of the physical examination was unremarkable. His laboratory results showed a Hb of 14.2 gm%, total white cell count of 6x 10^9 /dl, platelet count of 185x 10^9/dl and ESR of 20mm/hour. Urine microscopy showed 10-12 white blood cells per high power field, but urinary culture was negative. Ultrasound of prostate showed symmetrical prostatomegaly weighing 120 gms. Prostatic specific antigen (PSA) levels were high i.e 45ng/ml.

Transrectal biopsy of prostate was done from both the lobes and sent for the histopathological examination, which showed total 4 linear bits which showed fibrous stroma with multiple foci of granulomatous inflammation comprising of lymphocytes, macrophages, epithelioid cells, histiocytes and multinucleate giant cells (Figure 1). High power revealed histiocytes and multinucleate giant cells with engulfed grey yeast forms surrounded by a clearing of surrounding tissue, a halo representing the capsular material (Figures 2a, 2b).

Gomori methenamine silver (GMS) very efficient to visualize the fungi and also advantageous since it stains old and nonviable fungal elements more efficiently as seen in (Figure 2c). Special stains like mucicarmine helped in delineating the capsule (Figure 2d).

Diagnosis of granulomatous cryptococcal prostatitis was given. Subsequently the patient was investigated for any immunocompromised status. Patient was seronegative for HIV-I, HIV-II, HbsAg, VDRL. Culture from blood and cerebro spinal fluid(CSF) was negative for cryptococcus. X ray chest showed clear lung fields. Thus the diagnosis of primary cryptococcal prostatitis was made. He was treated with high dose of fluconazole 400mg/day and venous amphotericin at doses 0.4 mg/kg/day for 2-3 weeks.

Discussion
Cryptococcus infection is acquired through the respiratory route. In most hosts who encountered Cryptococcus neoformans the infection is contained or eliminated. Immunocompromised patients are at risk of systemic disease and dissemination.

The clinical presentation of cryptococcosis varies depending on the site and host, but the dominant involved organ are the lungs and CNS. Early reports dated back to the 60’s and 70’s.1 Subsequently prostatic involvement were reported in patients immunocompromised by steroids,2 organ transplantation,3 human immunodeficiency syndrome (HIV) infection and Hodgkins lymphoma.4 It is also described in apparently immunocompetent host.5

The prostate gland has also emerged as a potential site of relapse of cryptococcosis after apparently successful therapy of cryptococcal meningitis.6 Systemic spread from primary focus of cryptococcal infection commonly involves CNS, manifested as meningitis.

Untreated meningitis are invariably fatal. Our patient was treated with high doses of fluconazole and recovered. We
sensitivity of 50–80 %.


feel that a persistent prostatic focus of infection needs to be scrutinized vigilantly.

The rising incidence of cryptococcosis in India is posing a serious threat. Due to lack of sensitive methods for diagnosis, high morbidity and mortality are associated with the disease. Early diagnosis and institution of specific antifungal therapy are imperative to minimize the severity of infection. The laboratory diagnosis of cryptococcosis is based on direct demonstration, culture, and antigen detection by latex agglutination test (LAT).

Histopathological examination of organisms on tissue biopsy is also an effective means of diagnosing cryptococcosis. Special stains include gomori’s silver and calcofluor white stain are sensitive means of identifying this organism in tissue. The mucicarmine stain is particularly helpful in that it stains the capsule of this organism, allowing the observer to make a presumptive identification of the infecting fungus. Mucin stains, like Mayer’s mucicarmine, stain the mucopolysaccharide capsule of Cryptococcus neoformans which was done in our case.

To summarize, thorough histopathological examination for classic histologic clues and clinical history will aid in diagnosing most of the lesions considered in the differential diagnosis of granulomatous prostatitis. But in fungal prostatitis, histopathology is one of the major tools of diagnosis. The major advantages of histopathology are speed, low-cost, and the ability to provide a presumptive identification of the infecting fungus, as well as demonstrating the tissue reaction. A number of histologic stains are available that are routinely used to visualize fungi in tissue sections Gomori methenamine silver (GMS), Gridley’s fungus (GF), and periodic acid-Schiff (PAS) are special for and very efficient to visualize the fungi. Mucin stains, like Mayer’s mucicarmine, stain the mucopolysaccharide capsule of Cryptococcus neoformans which was done in our case.

**Conclusion**

Cryptococcosis can be easily misdiagnosed in uncompromised host both clinically and pathologically because of misconception that the disease affects only immunocompromised individuals. Hence, awareness and thorough histopathological examination of granulomatous lesion in a prostate would avoid misdiagnosis.

**References**


Fig. 2 : (a) H & E stain x100 shows a granuloma comprising of lymphocytes, macrophages, multinucleate giant cells and (b) High power: H & E stain x400 shows grey yeast bodies of cryptococcus engulfed by the giant cell (arrow). Gomori methenamine silver (GMS) stained the fungus black and numerous such cryptococci were seen in (c) and Mucin stain: mucicarmine delineated the capsule by staining magenta pink (arrow) (d).