Disseminated Cryptococcosis in a Pregnant Woman- Case report

Dr. B. B. Arora[1], Dr. Megha Maheshwari[2], Dr. Naiya[3], Dr D. R. Arora[4]

ABSTRACT

Introduction: Disseminated cryptococcosis remains a significant life threatening opportunistic fungal infection in AIDS patients. The clinical presentation of disseminated cryptococcosis is variable and depends on the organ systems involved. Generalized lymphadenopathy and characteristic skin lesions usually precede the onset of more severe disseminated cryptococcosis. **Case presentation:** A 25-years old pregnant woman presented with fever without lymphadenopathy or cutaneous manifestations or manifestations pertaining to any other organ system. She was investigated to detect the cause of fever. The patient died before a diagnosis of disseminated cryptococcosis could be made. **Conclusion:** A high index of suspicion is required in patients who do not present with skin or central nervous system manifestations.

Keywords: cryptococcosis, febrile illness, pregnancy

[1]Ex Senior Professor and Head, Department of Pathology, [2]Assistant Professor, Department of Microbiology, [3]Ex Assistant professor, Department of Gynaecology and Obstetrics, [4]Ex Senior Professor and Head, Department of Microbiology,
SGT Medical College, Budhera, Gurgaon, Haryana, India.
Corresponding author mail: megha0gera51@gmail.com

Conflict of interest: None Acknowledgement: nil

INTRODUCTION

Cryptococcosis is a life threatening opportunistic infection caused by *Cryptococcus neoformans*. Cryptococcosis is seen in both immunocompromised as well as immunocompetent individuals. The clinical manifestations of cryptococcosis vary with the host and site(s) of infection. Human infections range from asymptomatic colonization of lung to meningitis and disseminated disease. The most commonly involved organs are lungs and central nervous system. Clinically it presents as meningitis (50%), pulmonary infection (20%), while few may manifest with lesions in skin, bone, adrenals, lymph nodes, urinary

system as discussed by Devi.[1] We hereby present a case of cryptococcosis where fever was the only manifestation of disseminated cryptococcosis, without specific symptoms pertaining to any organ system.

CASE REPORT

A 25-year-old pregnant woman presented to the gynaecology and obstetrics department with the complaints of fever of 4 months duration. The patient was primigravida with history of five months amenorrhoea. Fever was high grade, occurring on and off. The fever was not associated with chills and rigor, diarrhoea, cold, cough, dysuria or frequency of micturition. General physical examination showed high pulse rate (98/min), raised temperature (103°F) and normal blood pressure (116/82). There was no associated rash or lymphadenopathy. There were no signs of meningeal irritation. Routine blood investigations showed mild anaemia (Haemoglobin=10.2 gm/dl), normal total and differential leucocyte count and raised ESR (70 mm in 1st hour). Blood sugar was normal. Peripheral smear examination and antigen test for malaria were negative. Widal test and blood culture for enteric fever were also negative. The patient and her husband were tested for HIV and were found to be HIV positive. There was a reversal of CD4:CD8 ratio. The patient succumbed to the disease before any causative organism could be discovered.

After the death of the patient, tissue specimens were collected from various sites in the body including kidney, lungs, liver and lymph nodes, to know the cause of the disease. Haematoxylin and eosin staining of the tissue specimens revealed the presence of budding yeast cells with subcapsular halo. Mayer's mucimarmine staining of the specimens revealed capsulated budding yeast cells identified as *Cryptococcus neoformans*. (Figure 1) Presence of Cryptococcus neoformans was detected in kidney, lungs, liver and lymph nodes

.

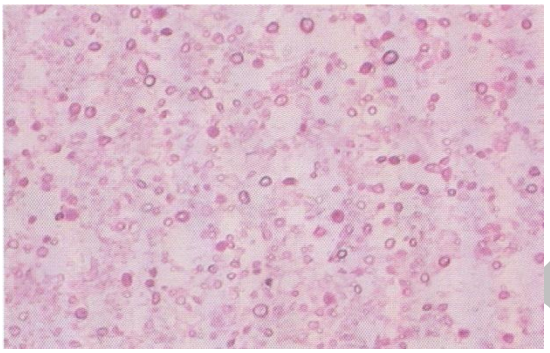

Figure 1: Cryptococci stained with Mayer's mucicarmine stain. The capsule is stained bright red

DISCUSSION

Cryptococcosis is the most common life-threatening mycosis seen in HIV infected patients. Inhalation route is the most common route of infection. *C. neoformans* causes subacute to chronic infections mostly involving pulmonary system. The yeast then disseminates to other organs of the body. *C. neoforman*s has been isolated from virtually every tissue, including skin, liver, spleen, kidney, prostate, heart, bones, eyes, nasopharynx, paranasal sinuses, tonsils, oral cavity and larynx as discussed by Mandell.[2] Most often the manifestations of cutaneous cryptococcosis precede the onset of more serious systemic or disseminated cryptococcosis by 1-2 weeks. Skin lesions may manifest in the form of granulomas, molluscum contagiosum, cellulitis as discussed elsewhere. [3,4] In the present case, however, there were no skin manifestations. Therefore the patient was investigated for causes of fever and a differential diagnosis of cryptococcosis was not even thought of. Disseminated cryptococcosis may manifest as cervical or generalized lymphadenitis. There can be central nervous system or pulmonary manifestations of disseminated cryptococcosis. However, in the present case there was no lymphadenopathy; no symptoms or signs pertaining to CNS or pulmonary involvement. In a retrospective study done to look for cryptococcuria as manifestation of disseminated cryptococcosis, 16 patients tested positive for cryptococcuria and none of them had any

symptoms of UTI as discussed by Kiertiburanakul.[5]

Our patient presented with history of fever of 4 months duration. It is possible that she was carrying cryptococcal infection for the last 4 months, however there were no symptoms specially pulmonary or meningeal which could point towards cryptococcal etiology. The delay in diagnosis proved to be fatal and the patient succumbed to the infection. Pregnancy represents a vulnerable time for both mother and fetus. During pregnancy, maternal cell-mediated immunity parameters are greatly altered. There is an imbalance between helper and suppressor T lymphocytes, with enhanced Th2 and Th3 responses and suppression of Th1 cytokines. This imbalance has been implicated as an increased risk for infection. In a study done by Ely et al HIV negative pregnant women mostly presented with isolated pulmonary or meningeal cryptococcosis, whereas, pregnant patients who are HIV positive or have some other form of immunodeficiency present with disseminated cryptococcosis. [6]

CONCLUSION:

A diagnosis of disseminated cryptococcosis should be considered in pregnant women who are HIV positive and present with fever. Rapid diagnosis and specific treatment is essential to reduce mortality related to cryptococcal infection.

REFERENCES

1. Devi SB, Ningshen R, Arvind G, Synrem E, Devi TS, Singh TB. Prevalence of cryptococcal meningitis in patients of acquired immunodeficiency syndrome: A single center experience from Regional Institute of Medical Sciences. J Med Soc 2013;27:56-60.
2. Mandell G, Bennet J, Dollin R. Principles and practice of infectious diseases. New York: Chuchill Livingstone Inc, 2005:2997-3012.
3. Lazzara M, Joshi A. Disseminated cryptococcosis involving the head and neck. BMJ Case Rep 2014. Doi:10.1136/bcr-2013-202306.
4. Dharamshale SN, Patil SA, Gohil A, Chowdhary A, Oberoi C.

Disseminated crytococcosis with extensive cutaneous involvement in AIDS. Ind JMed Microbiol 2006; 24(3):228-30.

5. Kiertiburanakul S, Sungkanuparph S, Buabut B, Pracharktam R. Cryptococcuria as a manifestation of Disseminated Cryptococcosis and isolated urinary tract infection. Jpn J Infect dis 2004;57:203-205.
6. Ely EW, Peacock JE, Haponik EF, Washburn RG. Cryptococcal pneumonia complicating pregnancy. Medicine 1998;77:153–67.