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## RESEARCH ARTICLE

### A CASE REPORT OF CUTANEOUS CRYPTOCOCCOSIS IN A POST RENAL TRANSPLANT PATIENT IN A TERTIARY CARE HOSPITAL

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## INTRODUCTION

*Cryptococcus* is an encapsulated basidiomycetous yeast, which belongs to genus *Cryptococcus*, which is capable of causing acute or chronic fungal infection.<sup>1</sup> This fungus is recovered from pigeon excreta, soil and dust.<sup>3</sup> These fungi essentially cause opportunistic infections mainly in immunocompromised individuals, primarily involving lungs, then disseminate to extrapulmonary sites, through hematogenous routes.<sup>1</sup> The disease causes an opportunistic infection in patients with compromised immunity such as HIV, post transplantation, diabetes, prolonged steroid administration, chemotherapy, sarcoidosis, leukemia.<sup>2</sup> It causes high morbidity and mortality in immunocompromised individuals, unless diagnosed and treated in an early stage.<sup>2</sup> Although cryptococcosis mainly affects CNS, the most common extra-neural site affecting is skin.<sup>2</sup> Approximately around 20-25% of systemic cryptococcal infection will have skin manifestations.<sup>2</sup> These skin lesions are mainly seen in immunocompromised individuals.<sup>2</sup> Cryptococcosis can present with a wide variety of skin and soft tissue lesions,

such as purpura, vesicles, nodules, acneiform lesions, ulcers, granulomas and cellulitis.<sup>3</sup> Cutaneous lesions are mainly secondary and they play a major role in classifying them as a disseminated infection mainly in patients with impaired cell-mediated immunity.<sup>3</sup> The diagnosis can be made by demonstration of capsule by India Ink staining, isolation of fungi by culture method, demonstration of cryptococcal antigen in patients' serum or by molecular method such as PCR.<sup>3</sup>

## CASE PRESENTATION

A 38-year-old male patient with history of k/c/o Hypertension since 10 years, had undergone renal transplantation 10 years back, previously diagnosed with cryptococcal meningitis 5 years ago, came to Institute of Nephrology and Urology OPD, Victoria hospital, Bangalore Medical College and Research Institute with complaints of painful non-healing ulcer over the left buttock region with on and off fever for 3 months. Patient was apparently asymptomatic 3 months ago, after which he developed a small ulcer over the left buttock region, which gradually increased in size, and was associated with pain.

He got treated in an local hospital but it did not subside with analgesics and antibiotics. A week later he developed low-grade fever with chills and rigour, associated with generalised weakness and fever did not subside with antipyretics. He gives h/o loss of appetite, with weight loss of 8kgs within a span of 3 months. No signs and symptoms of meningitis were noted. Patient gives history of very close contact with the pigeons for the past 3 years. Local examination revealed an single , well-defined ulcer seen over the left buttock region , measuring approximately around 6 x 5.5cm in size . Ulcer was tender on palpation and no regional lymphadenopathy were noted . Under aseptic precautions, biopsy was taken and sent for histopathological examination and tissue bits were sent for Bacterial and Fungal culture and sensitivity.

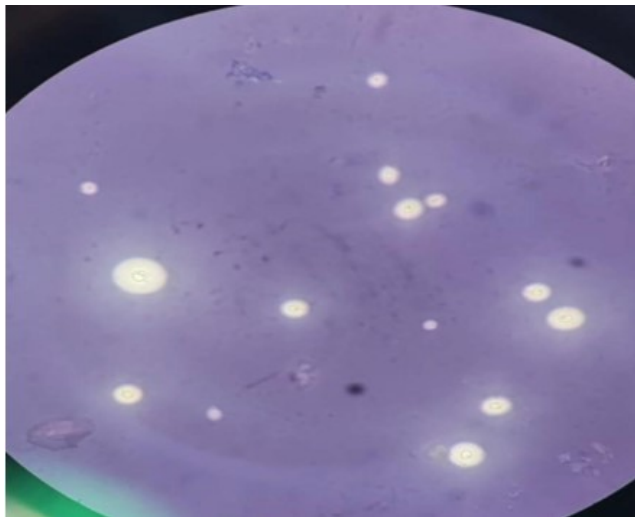


Figure 1. India Ink staining showing capsulated yeast cells

## RESULTS

The tissue bit sent for Gram staining revealed few pus cells and presence of Gram negative bacilli. For Bacterial culture and sensitivity, the sample was inoculated on to appropriate culture plates, incubated at 37<sup>o</sup> C for 24 hours ,next day lactose fermenting colonies were seen and was processed in the Automated VITEK system , and the culture report yielded as *Escherichia coli* which was sensitive to most of the drugs. The sample was also inoculated onto Sabouraud Dextrose Agar (SDA) tube and incubated at 25<sup>o</sup> C for 21 days , the growth was seen on 12th day ,Gram stain from fungal culture showed round, budding yeast cells, and demonstration of capsule was done by India Ink staining , which was suggestive of cryptococcal infection. The fungal culture report yielded as *Cryptococcus neoformans*. Colonies from SDA were inoculated onto Bird seed agar which is a selective media for isolation of *Cryptococcus* spp which showed brown coloured colonies confirming the diagnosis of *Cryptococcus neoformans*. Patients haemoglobin was 14.4 gm/dl, Total leukocyte count was 10,680 cell/mm<sup>3</sup>. The HbA1c value was increased to 6.5%, indicating patient was in pre-diabetic stage. Creatinine level was elevated to 1.96 mg/dL . Liver function test, lipid profile and serum electrolytes were within normal limits .Cerebrospinal fluid examination was normal. All serological tests were done, HIV test was negative and HBsAg and HCV were non-reactive. Patient was already on oral Immunosuppressants such as Tacrolimus,

MMF, Wysolone. He was started on Injectable Amphotericin B for 2 weeks. At the time of discharge he was started on Oral Fluconazole 200mg and Oral Flucytosine 150mg once a day for 6 weeks, and to be continued depending on the response of the treatment. Baseline immunosuppression was reduced and patient was discharged with the advice for close follow up .Patient was asked to follow-up every 6 weeks in Dermatology OPD, to assess for the response to the treatment. The cutaneous lesion improved with the course of treatment and by the end of 3 months, the ulcer was completely healed.

## DISCUSSION AND CONCLUSION

Immunosuppression after any organ transplantation can lead to opportunistic infections such as Cryptococcosis.<sup>1</sup>Four serotypes have been identified for *Cryptococcus* species, Serotype A,B, C and D, among which serotype D is most commonly known to cause cutaneous cryptococcosis. <sup>2</sup>In this case, patient started improving after starting on antifungals, and at the end of 3 months, the ulcer was completely healed and he had no significant side effects of the drugs and was well tolerated .*Cryptococcus* remains a significant opportunistic infection in an organ transplant patients, HIV patients and those on long term corticosteroid therapy and in patients with impaired cellular immunity such as in leukemia, sarcoidosis.<sup>3</sup>Cryptococcosis with cutaneous manifestations are rare , as only a small percentage of patients develop it, and its very important to differentiate with other cutaneous infections such as bacterial cellulitis. Thus early diagnosis and treatment is essential, which helps in having better improvement in the quality of life , which also increases the length of the life span.

## ABBREVIATIONS

**B/L** - Bilateral  
**CNS** – Central Nervous System  
**DM**- Diabetes mellitus  
**HBs Ag** – Hepatitis B surface antigen  
**HCV**- Hepatitis C virus  
**HIV**- Human Immunodeficiency Virus  
**HTN**- Hypertension  
**H/o** – History of  
**IV** – Intravenous  
**K/c/o** – Known case of  
**MMF**- Mycophenolate mofetil  
**OPD** -Out patient Department  
**PCR** – Polymerase chain reaction  
**SDA** – Sabouraud Dextrose Agar

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