

## Fungal Meningitis in a 55 Year Old Women: A Case Study

Manisha Rajaure<sup>1</sup>, Aishwarya Walia<sup>2</sup>, Anita Rawat<sup>3</sup>, Kishalay Datta<sup>4</sup>

### How to cite this article:

Manisha Rajaure, Aishwarya Walia, Anita Rawat *et al.*/Fungal Meningitis in a 55 Year Old Women: A Case Study/Indian J Emerg Med 2023;9(4):235-237.

### Abstract

Cryptococcal/fungal meningitis is most caused in immune-compromised condition. We discuss a case of Cryptococcal meningitis, the presentation and management after arrival at emergency.<sup>1</sup>

**Keywords:** Cryptococcus; Meningitis; Amphotericin B.

## INTRODUCTION

Symptoms of fungal meningitis are generally similar to those of other types of meningitis, and include a fever, stiff neck, severe headache, photophobia, nausea and altered mental status.<sup>2</sup>

Fungal meningitis may be caused by the following type of fungi:

1. Candida Albicans
2. Coccidioides
3. Histoplasma

4. Blastomyces
5. Cryptococcus

Cryptococcus is an opportunistic infection that causes more than 100,000 HIV related deaths each year. Although the infection is usually HIV related, it is also seen in other conditions, such as patients under immunosuppressive therapy or patients with organ failure syndromes, organ transplants, innate immunological problems, common variable immuno deficiency syndrome and hematological disorders. Cerebrospinal fluid (CSF) typically shows lymphocytic pleocytosis, elevated proteins and low glucose. The most common type of fungal meningitis is caused Cryptococcus neoformans.<sup>3</sup>

A rapid etiologic diagnosis is required to guide antifungal therapy.

Complications include seizures, cerebral infraction, hydrocephalus and elevated CSF pressure without hydrocephalus.

## CASE

A 55 year old patient was brought into the

**Author's Affiliation:** <sup>1</sup>Resident, <sup>2</sup>3<sup>rd</sup> Year Resident, <sup>3</sup>Senior Consultant, <sup>4</sup>Director and HOD, Department of Emergency Medicine, Max Superspeciality Hospital, Shalimar Bagh 110088, New Delhi, India.

**Corresponding Author:** Aishwarya Walia, 3<sup>rd</sup> Year Resident, Department of Emergency Medicine, Max Superspeciality Hospital, Shalimar Bagh 110088, New Delhi, India.

**E-mail:** [rajauremanisha12@gmail.com](mailto:rajauremanisha12@gmail.com)

**Received on:** 31-07-2023

**Accepted on:** 15-09-2023



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0.

emergency with the chief complaints of severe headache, fever, neck pain, blurry vision and vomiting. All her vitals were assessed during her arrival into the hospital and they were as follows:

Pulse: 68 beats/min, Blood Pressure: 130/80mm Hg, Temperature: 101.5 degree Fahrenheit, Respiratory rate: 16 breaths/min.

On CNS examination her GCS came out to be 14/15. All motor and sensory functions were intact. Neck rigidity or Kerning's sign was also absent.

She was a known case of chronic kidney disease and she was operated for renal transplant 7 years back. Initially the symptomatic treatment was started but the symptoms didn't show too much of improvement. Since she was renal transplant patient her drug history was taken and it was found she was taking immunosuppressive agents like Cyclosporine and Glucocorticoids.<sup>4</sup> Her symptoms aggravated further during her stay in the hospital. CT scan of the patient was done just after the admission which revealed normal findings. The results of all basic investigations were within the normal limits. Then CSF examination of the patient was done, which showed lymphocytosis, elevated protein and low glucose and cryptococcal antigen was detected on Cr Ag latex agglutination. She was immediately put on intravenous amphotericin B, oral fluconazole and oral flucytosine. After 8 to 10 days of the treatment patients symptoms were relieved and she was discharged and 2 weeks of admission.<sup>5</sup>

CSF	Value
WBC Count	733 cells/mm <sup>3</sup>
Glucose	17mg/dl
Protein	62mg/dl
CrAg Latex Agglutination	Positive

## DISCUSSION

When dealing with immune-compromised patient the Cryptococcus should be the diagnostic consideration in case of meningitis. Cryptococcal antigen test like CrAg latex agglutination test or ELISA as well as India ink preparation which is a traditional method can help in the detection of Cryptococcal meningitis. However diagnosis was not easy because a case of Fungal meningitis is not the routine in our set up. It was the immune-compromised status of the patient which took us to the diagnosis and accordingly investigations were

done.<sup>6</sup>

Cryptococcus grows in the soil contaminated with bird excreta most commonly pigeons and our case is found gardening and uses most of her time at home in planting. So her hobby and her medical condition were the aggravating factors for her infection.

In the study done by Jha *et al.*, (2019) in a Government hospital at Nepal a case of Cryptococcal meningitis was found in a immune-competent patient with no other co-morbidity which is generally unusual but she was a farmer by profession and her home area for many pigeons and that might be the reason. Transmission via others sources like vegetables and fruits can't be ruled out.

In our study the CSF findings showed lymphocytosis compared to the study done by Khanna *et al.* (1996) which showed that 3 out of 23 HIV negative patients with cryptococcal meningitis had low CSF cell count.

CT scan findings in our patients showed normal findings which is analogous with the study done by Khan N and Hiesgen J (2015) which revealed 13% patients with intracranial meningoencephalitis have unremarkable findings.

## CONCLUSION

Immuno-compromised people are at the high risk of developing cryptococcal meningitis. They should be treated early with anti-bacterial and anti-fungal agents after observing CSF findings. Delayed diagnosis and misdiagnosis is quite common resulting in high mortality.

## REFERENCES

1. Acharya S, Yadav SK, Singh PB, Bhandari S, Gautam J, Pathak S, Nepal G, Sah R, Ojha R. Cryptococcal meningitis in an immunocompetent individual: a case report. *Clinical Case Reports*. 2021 Oct;9(10):e04894.
2. Loye A, Gabriel O, Zhang XC. A case report: tragic death in a young patient with human immunodeficiency virus due to cryptococcal meningitis. *Cureus*. 2019 May 13;11(5).
3. Shanti B and Kannan I. A case of Cryptococcal Meningitis in HIV positive patient in A tertiary care hospital in Kancheepuram district, Tamilnadu, India. *Int J Med Res Rev*2015;3(2):250-253.
4. Khan N, Hiesgen J. Computerized tomography

- findings in HIV associated cryptococcal meningoencephalitis a tertiary hospital in Pretoria. *S Afr J Rad.* 2017;21(2).
5. Khanna N, Chandramuki A, Desai A, Ravi V. Cryptococcal infections of the central nervous system: An analysis of predisposing factors, laboratory findings and outcome in patients from South India with special reference to HIV infection. *J Med Microbiology.* 1996;45:376-79.
  6. Jha A, Adhikari S, Sigdel KR, Paudyal B, Basnyat B, Kayastha G, Pradhan S, Risal U, Poudel J. Case report: cryptococcal meningitis in an apparently immunocompetent patient in Nepal-challenges in diagnosis and treatment. *Wellcome Open Research.* 2019;4.
  7. Pescador Ruschel MA, Thapa B. Cryptococcal Meningitis. (Updated 2023 Jan 27). In: *Stat Pearls (Internet)*. Treasure Island (FL): Stat Pearls Publishing; 2023 Jan.
  8. [https://en.wikipedia.org/wiki/Fungal\\_meningitis](https://en.wikipedia.org/wiki/Fungal_meningitis).
- 
-