



## Disseminated Cryptococcosis in an Immunocompetent Adolescent

Authors

**Archana Agrawal, Kanchan Thakur, Bindu Aggarwal, Prabjyot Sing**

SGRRIMH & S, Patelnagar Dehradun, India-248001

Email: [drarchu1232@gmail.com](mailto:drarchu1232@gmail.com)

### Abstract

*Disseminated cryptococcosis usually occurs in immunocompromised patients and is often fatal. Occasionally, it affects immunocompetent persons causing respiratory and CNS involvement primarily. We present a case which was initially misdiagnosed as disseminated tuberculosis and subsequently turned out to be disseminated cryptococcosis. Relatives refused for treatment and took LAMA discharge. Even in country with high prevalence of TB in patients of PUO especially in sputum negative cases other differentials like cryptococcosis should be considered after common causes are ruled out and tissue diagnosis should be sought.*

**Keywords:** *Disseminated cryptococcosis, immunocompetent, lymph node.*

### Introduction

Cryptococcosis is an invasive fungal infection caused by encapsulated yeast *Cryptococcus neoformans* with variable presentations ranging from mild focal pulmonary infection to life threatening disseminated infection or meningitis. <sup>[1]</sup>

The systemic cryptococcal infection can masquerade clinically and radiologically as tuberculosis and is not considered as first differential diagnosis especially in immunocompetent host particularly in TB endemic country like India. Awareness of the disease and a high index of suspicion are crucial to arrive at both clinical and aetiological diagnosis of CM.

### Case Report

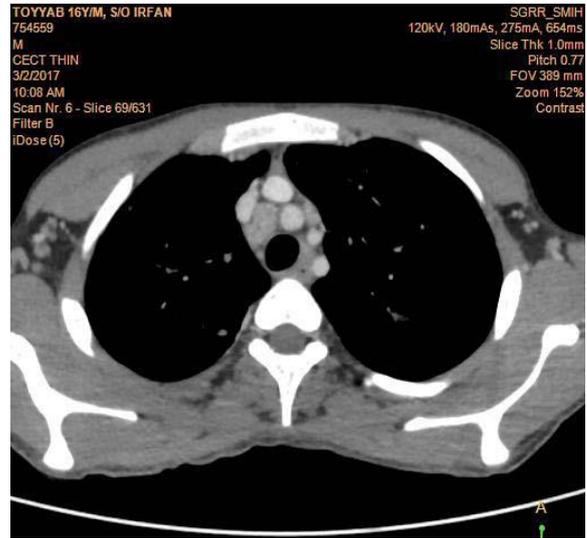
16 year old apparently immunocompetent child presented with complaints of high grade fever with chills and rigors, cough with expectoration,

decreased appetite and weight loss since 1 month. He also complained of abdominal pain in right hypochondriac region for last 10 days. His past history was not significant. History of exposure to pigeon's droppings was present as he used to play with them for hours daily. He was averagely built and well-nourished with weight of 48 kg and height of 168 cm and SMR staging V. On general examination he was febrile with temperature 102°F, heart rate 130/mt, respiratory rate 34/mt, mild pallor and cervical lymphadenopathy was present. Respiratory examination air entry was decreased mainly on right side and bronchial breathing heard with bilateral crepitation. Per abdomen examination revealed hepatosplenomegaly with liver span around 18cm. His investigations revealed Hb 11.4gm/dl, WBC12, 640/ $\mu$ l with N72, L17, M2E9, ESR 84 mm at 1st hour. MP, widal test, urine routine, were negative. Blood culture at 72 hours

and urine culture did not reveal any growth. Renal function were normal but hepatic functions deranged (SGPT 65 U/L, ALP 1411 U/L, GGT 1322 U/L. ANA and HIV negative., Xray chest showed right perihilar adenopathy with consolidation, his sputum AFB and Montoux test was negative and FNAC showed inflammatory granuloma. Bone marrow aspiration did not reveal any lymphoreticular involvement. CECT chest showed multiple centrilobular nodules diffusely in bilateral lung parenchyma (fig. 1) with endobronchial spread giving tree in bud appearance. Patchy areas of lobular consolidation with fibro reticular thickening was seen bilaterally. Multiple necrotic mediastinal and perihilar lymph nodes seen.(fig.2) CECT abdomen revealed multiple enlarged discrete to confluent non calcified necrotic, retroperitoneal, pre paraaortic, peripancreatic, portocaval and mesenteric lymph nodes (fig 3) with circumferential mural thickening in terminal ileum and ileocecal junction. Patient was initially started on iv ceftriaxone and vancomycin. Relatives were not willing for intraabdominal lymph node biopsy and cect chest and abdomen findings were in favor of disseminated koch's so 4 drug ATT started on day 4. High grade fever continued, on day 7 blood culture grew *Cryptococcus neoformans*. Family was counselled regarding diagnosis and further plan of management but because of economical constraints they did not consent further work up and management. To rule out coinfection with TB gene xpert for MTB/RIF was sent and report was negative.



**Fig. 1** cect chest showing multiple centrilobular nodules in b/l lung parenchyma



**Fig 2.** Cect chest Perihilar and perimedastinal lymphadenopathy with necrosis in few nodes



**Fig 3** cect abdomen showing hepatosplenomegaly with retroperitoneal lymphadenopathy.

**Discussion**

*Cryptococcus neoformans* is widely found in nature, including soil, dry pigeon droppings, vegetables, and fruits. History of exposure to pigeon's dropping is present frequently in patients with cryptococcosis but cannot be excluded in patients with no history of exposure to pigeon droppings. [1] Cryptococcosis is a subacute to chronic infection caused by the encapsulated yeast *Cryptococcus neoformans*, with variable presentation involving the respiratory system, central nervous system, skin, lymph nodes, and other organ. Although it can occur in immunocompetent patients, it commonly occurs in patients with impaired cell mediated immunity eg in patients with AIDS, DM, solid organ transplant

receptients, lymphoreticular malignancy.<sup>[2]</sup> CNS and lung are the primary site of involvement in immunocompetent patients.<sup>[3]</sup> In immunocompetent patients disseminated cryptococcosis with lymph node involvement is supposed to be uncommon previously although few cases are reported. Recently in a case series of china,<sup>[4]</sup> rate of abdominal cavity lymph nodes, liver, spleen involvement was more common than meningitis suggesting changing trends in clinical presentation or it might be because with increasing awareness of disease and better work up facilities diagnostic yield is increased.

Diagnosis of cryptococcal infection depends upon demonstration of growth of organisms in blood, other body fluid or tissue with characteristic biochemical reactions (urease, phenyloxidase) or demonstration of encapsulated yeast like organisms on India ink or PAS staining followed by positive mucicarmine or Masson Fontana staining. Disseminated cryptococcosis is defined by 1. A positive culture from at least two different sites or 2. A positive blood culture.<sup>[5]</sup> In our case it was very difficult to distinguish cryptococcal lymphadenitis from lymphoma and tuberculosis as parents did not allow for CT guided biopsy but blood culture report came to rescue. Unfortunately even after diagnosis we could not treat it as patient went LAMA discharge. To conclude awareness of the disease and maintenance of a high index of clinical suspicion is required to diagnose the disease timely. After diagnosis prompt workup and antifungal treatment as per ISDA guidelines is required.<sup>[6]</sup>

### Conclusion

The purpose of presenting this case is to highlight the importance of careful evaluation of pyrexia of unknown origin in reference to chronic cough particularly in tuberculosis endemic regions in resource limited settings.

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