

Case Report

North American Blastomycosis in South Indian girl

Anjana Babu¹, Pradeep S², KR Leena Devi³, V Kesavan Nair⁴

We report the case of a 26 years old lady who presented with Lt upper lobe non-resolving pneumonia. Her bronchoscopic brushings yielded granulomas with necrosis and she was started on Anti Tuberculous treatment (ATT). But her symptoms persisted in spite of ATT with radiological worsening. A CT guided biopsy was taken which revealed the fungus *Blastomyces dermatitidis*. She improved with antifungal treatment. A high index of clinical suspicion, clinched the diagnosis. This case is being reported considering the rarity of the entity in Indian population.

[J Indian Med Assoc 2019; 117(9): 26 & 28]

Key words : Blastomycosis, granulomatous lesion, dimorphic fungus, consolidation.

Blastomycosis is a systemic pyogranulomatous infection that arises after inhalation of the conidia of the thermally *Blastomyces dermatitidis*. Most cases of blastomycosis have been reported from North America.

The clinical manifestations of blastomycosis are varied and include asymptomatic infection, acute or chronic pneumonia, and extrapulmonary disease. Although *B dermatitidis* has been reported to involve almost every organ, the lungs are the most common site of infection, followed by the skin, bones, and genitourinary system. Extrapulmonary disease results from hematogenous spread from a primary pulmonary infection.

CASE REPORT

A 26 years old lady presented with cough, high grade fever and weight loss since 3 weeks. She also had left sided pleuritic chest pain. There was no history of dyspnea. She was a Keralite residing in USA for the past 2 years. She had returned from USA 1 week back for attending a family function. There was no contact with pulmonary tuberculosis.

Examinations — On general examination she was febrile and was not toxic. Her respiratory system examination revealed coarse crepitations in left infraclavicular area. Laboratory investigations revealed leucocytosis which was polymorph predominant with high C-reactive protein. Sputum AFB repeated samples were negative. Her serological testing for HIV was negative. Peripheral smear showed leucocytosis with toxic granules. Her CT thorax revealed left upper lobe consolidation. Her sputum culture yielded normal flora. Blood culture showed no growth. She continued to have fever spikes inspite of broad spectrum antibiotics. We proceeded with bronchoscopic brushing, biopsy and bronchial washings. CB NAAT for mycobacterium in bronchial washings and sputum was negative. Bronchoscopic brushings yielded granulomas with necrosis. She was started on Antituberculosis treatment and was discharged. She

reported with recurrence of high fever. Hence she was evaluated again with CT guided biopsy. The biopsy tissue revealed the presence of dimorphic fungus suggestive of blastomycosis. She was initiated on itraconazole. She responded well to the treatment regimen and became symptomatically better within 2 weeks. She was given 6 months of itraconazole, the X-ray lesions disappeared and she was doing well 6 months after completion of drug therapy. Her repeat Chest X-ray showed remarkable clearance (Fig 1,2 & 3).

DISCUSSION

Blastomycosis is also known as North American Blastomycosis or Gilchrist disease¹. It is endemic in North America. It causes clinical symptoms similar to tuberculosis. Blastomycosis is caused by dimorphic microfungus *blastomyces dermatitidis*². It manifests with lung involvement in about 70% cases Itraconazole is the treatment of choice. In Indian scenario though it has been diagnosed rarely the case reports have been few and far between. Most of the cases that have been reported were cutaneous Blastomycosis.

Our clinical and radiological scenario was strongly simulating tuberculosis as the patient presented with fever and upper lobe pneumonia. But the history of residing in North America made us suspicious. Leucocytosis with toxic granules and the non-response to antibiotics and ATT, suggested the



Fig 1—X-ray Chest before treatment



Fig 2 — X-ray Chest after 6 months of Itraconazole

Department of Respiratory Medicine, Kerala Institute of Medical Sciences (KIMS), Trivandrum 695029

¹MBBS, DTCD, DNB (Chest), Resident

²MBBS, DMRD, Consultant, Department of Radio Diagnosis

³MBBS, MD, Professor and Senior Consultant, Department of Pathology, Kerala Institute of Medical Sciences (KIMS), Trivandrum 695029

⁴MD, DTCD, M Phil (Clin. Epidem), FCCP (USA), Professor and Senior Consultant and Corresponding author

(Continued on page 28)

(Continued from page 26)

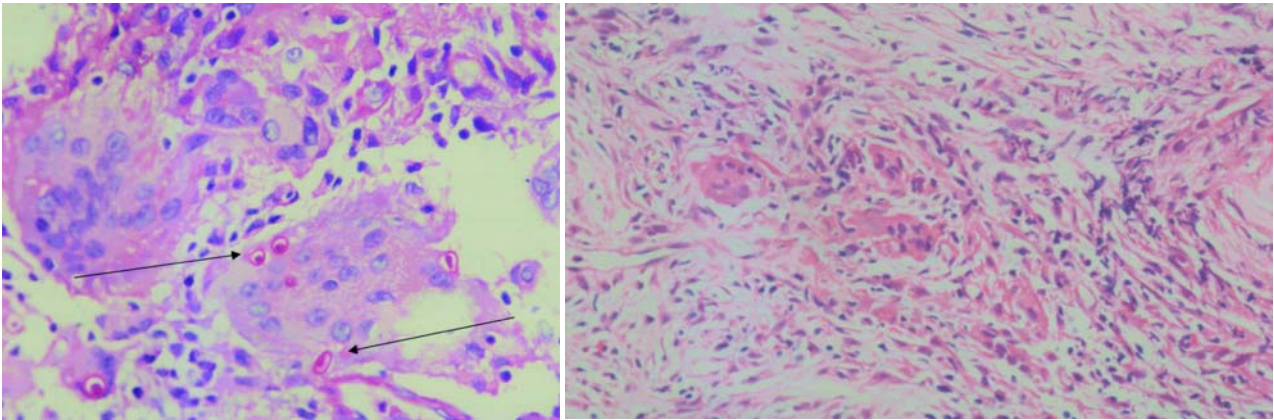


Fig 3 — Blastomyces – stained by H&E X 400 PAS, Fungus inside foreign body Giant cells

possibility of a fungal infection. The diagnosis was confirmed by histopathological report. Blastomycosis primarily affects otherwise healthy, vigorous people, mostly middle-aged, who acquire the disease while working or undertaking recreational activities in sites conventionally considered clean, healthy and in many cases beautiful^{3,4}. After revealing the diagnosis, our patient gave history of visiting a park frequently near her residence.

Blastomycosis is one of those several infections which should be kept in mind while evaluating non-responsive cases of granulomatous lesions especially when there is residence or travel to North America.

REFERENCES

- 1 James, William D, Berger, Timothy G — *Andrews' Diseases of the Skin: clinical Dermatology*. Saunders Elsevier 2006; 319.
- 2 Kwon-Chung KJ, Bennett JE, Bennett John E — *Medical mycology*. Philadelphia: Lea & Febiger 1992; ISBN 978-0812114638.
- 3 Klein BS, Vergeront JM, Weeks RJ, Kumar UN, Mathai G, Varkey B, *et al* — Isolation of *Blastomyces dermatitidis* in Soil Associated with a Large Outbreak of Blastomycosis in Wisconsin. *N Engl J Med* 1986; **314**(9): 529-34.
- 4 Rippon JW — *Medical mycology : the pathogenic fungi and the pathogenic actinomycetes* (3rd ed.). Philadelphia: W.B. Saunders Co. *Journal of Basic Microbiology* 1988; **30**(6): 463.
- 5 Savio J, Muralidharan S, Macaden RS, D'Souza G, Mysore S, Ramachandran P, *et al* — Blastomycosis in a South Indian patient after visiting an endemic area in USA. *Medical Mycology* 2006; **44**(6): 523-9.
- 6 Rao GR, Narayan BL, Durga Prasad BK, Amareswar A, Sridevi M, Raju B — Disseminated blastomycosis in a child with a brief review of the Indian literature. *IJDVL*: 2013; **79**(1): 92-6.