

Case Report

Lophomonas blattarum infection in immunocompetent patient

Rahul Tyagi, Kavita Bala Anand¹, Kishore Teple, Rajkumar Singh Negi²

Departments of Medicine, ¹Pathology and ²Radiodiagnosis and Interventional Radiology, INHS Asvini, Mumbai, Maharashtra, India

ABSTRACT

Lophomonas blattarum (*L. blattarum*) is a protozoan parasite living in intestinal tracts of termites and cockroaches. Chen and Meng from China reported first case of pulmonary *L. blattarum* infection in 1993. 137 cases have only been reported in literature between 1993 to 2013. Majority of these infections occur in immunocompromised patients and have been reported from China. We report a case of this rare entity in an immunocompetent young Indian male.

KEY WORDS: Eosinophilia, immunocompetent, *Lophomonas*

Address for correspondence: Dr. Rahul Tyagi, Department of Medicine, INHS Asvini, Near R C Church, Colaba, Mumbai - 400 005, Maharashtra, India.
E-mail: raw_haul4960@rediffmail.com

INTRODUCTION

Lophomonas blattarum (*L. blattarum*) is a protozoan parasite living in the intestinal tracts of termites and cockroaches.^[1] Chen and Meng from China reported the first case of pulmonary *L. blattarum* infection in 1993.^[2] Only 137 cases have been reported in the literature between 1993 and 2013.^[2] The majority of these infections occurred in immunocompromised patients and were reported from China.^[2] We report a case of this rare entity in an immunocompetent young Indian male.

CASE REPORT

A 23-year-old male presented with complaint of cough with purulent expectoration, breathlessness on exertion, history of wheezing sound coming from chest, and low-grade fever of 3 weeks' duration. There was no previous history of such episodes or any other significant

illness in the past. On admission, his vital signs were: Pulse rate 62 beats/min, blood pressure 128/72 mmHg, respiratory rate 24 breaths/min, and body temperature 36.5°C. Systemic examination showed bilateral expiratory wheeze on lung field auscultation. Routine laboratory tests revealed eosinophilia (57.5%) with absolute eosinophil count (AEC) of 7180/cu mm. The erythrocyte sedimentation rate was 10 mm fall in the first hour. A sputum smear for acid-fast bacilli (AFB) and protozoa was negative. Sputum culture did not grow any organism. Peripheral blood smear showed no evidence of microfilarial parasite. Viral markers including human immunodeficiency virus (HIV), hepatitis B virus surface antigen (HBsAg), and hepatitis C antibody (anti-HCV) test were negative. Chest X-ray [Figure 1] and noncontrast computed tomography (CT) of chest were normal. Spirometry was normal. Fiberoptic bronchoscopy and bronchoalveolar lavage (BAL) were done for evaluation of eosinophilia with respiratory symptoms. Bronchoscopy showed congestion of the left lower bronchus with mucoid secretion. Microscopic examination of wet mount of BAL revealed actively motile

Video available on www.lungindia.com

Access this article online

Quick Response Code:



Website:

www.lungindia.com

DOI:

10.4103/0970-2113.192867

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Tyagi R, Anand KB, Teple K, Negi RS. *Lophomonas blattarum* infection in immunocompetent patient. Lung India 2016;33:667-8.

flagellates with polar tuft of flagella lashing rhythmically [Video 1], identified as *L. blattarum* [Figures 2 and 3]. Oral metronidazole 400 mg thrice daily was given for 2 weeks. Steady improvement in the patient's condition was noted,



Figure 1: Chest radiograph of patient, which was normal

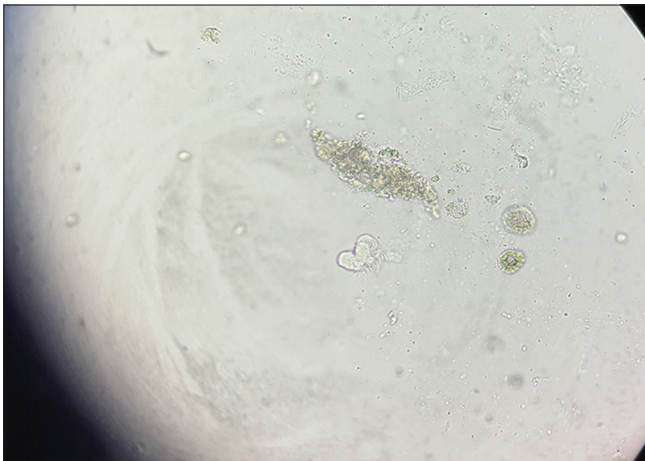


Figure 2: Wet mount microscopic images of BAL showing flagellates with polar tuft of flagella, identified as *L. blattarum*

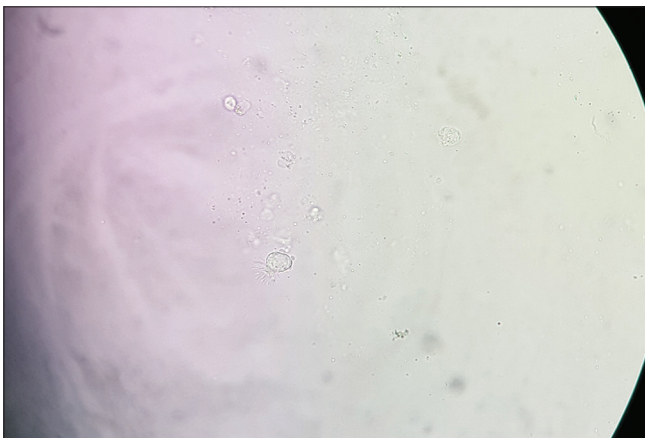


Figure 3: Wet mount microscopic images of BAL showing flagellates with polar tuft of flagella, identified as *L. blattarum*

with him becoming asymptomatic and the normalization of peripheral eosinophilia after 2 weeks of treatment.

DISCUSSION

Human pulmonary infection with *L. blattarum* is a rare disease.^[3] Xue *et al.* reviewed the literature and reported 137 cases from 1993 to 2014.^[4] The majority of these cases were from China, with a few cases being reported from Spain and Peru. One case of a patient having dual infection with tuberculosis has been reported from India.^[5] *Lophomonas* is classified under the supergroup Excavata, class Parabasalia. Trophozoites undergo cyst formation in adverse conditions and excyst into motile flagellates in favorable conditions, affecting protease receptors and tight junctions in the respiratory tract.^[6]

Diagnostic clues to *L. blattarum* infection include patients who are immunocompromised or have history of prolonged use of immunosuppressants due to underlying disease, marked peripheral eosinophilia, clinical features of a pulmonary infection, and poor response to antibiotics.^[4] Although our patient did not have any condition causing immunosuppression, he had features of pulmonary infection and marked blood eosinophilia. *L. blattarum* can be detected in sputum smears, BAL, or biopsy smears.^[4] In our case, although the sputum smears were negative, the infection was confirmed on BAL.

Treatment consists of oral metronidazole 500 mg 8–12-hourly or 2 g daily in adults and 7.5–15 mg/kg every 8 h in children for 1 week.^[5] We managed our patient with oral metronidazole 400 mg 8-hourly for 2 weeks, with good clinical response and resolution of peripheral eosinophilia. Severe cases may be treated with intravenous metronidazole 15 mg/kg/h followed by 7.5 mg/kg/6 h as maintenance.^[5]

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Adl SM, Simpson AG, Farmer MA, Andersen RA, Andersen OR, Barta JR, *et al.* The new higher level classification of eukaryotes with emphasis on the taxonomy of protists. *J Eukaryot Microbiol* 2005;52:399-451.
2. Chen SX, Meng ZX. Report on one case of *Lophomonas blattarum* in the respiratory tract. *Chinese J Parasitol Parasit Dis* 1993;11:28.
3. He Q, Chen X, Lin B, Qu L, Wu J, Chen J. Late onset pulmonary *Lophomonas blattarum* infection in renal transplantation: A report of two cases. *Intern Med* 2011;50:1039-43.
4. Xue J, Li YL, Yu XM, Li DK, Liu MF, Qiu JF, *et al.* Bronchopulmonary infection of *Lophomonas blattarum*: A case and literature review. *Korean J Parasitol* 2014;52:521-5.
5. Verma S, Verma G, Singh DV, Mokta J, Negi RS, Jhobta A, *et al.* Dual infection with pulmonary tuberculosis and *Lophomonas blattarum* in India. *Int J Tuberc Lung Dis* 2015;19:368-9.
6. Martinez-Giron R, van Woerden HC. *Lophomonas blattarum* and bronchopulmonary disease. *J Med Microbiol* 2013;62:1641-8.