

A Rare Reproduction in Paranasal Sinuses; *Lophomonas Blattarum*

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Abstract

Lophomonas blattarum is a rare cause of paranasal sinus infections. The present study reports a case of ethmoid sinusitis of a *Lophomonas* parasite. A 45-year-old female patient who was followed up at the intensive care unit with the diagnosis of meningitis was presented because of the rare occurrence of *L. blattarum* in the mucosal biopsy and culture specimens obtained from the left nasal passage on the detection of pansinusitis on control computed tomography. Complete recovery was observed after metronidazole was administered at 2 g/day for 25 days with no complications. Pansinusitis develops in patients followed up at the intensive care unit for various reasons. The most common bacterial microorganism infections are caused by fungal and small parasites. *Lophomonas blattarum*, a flagellated parasite, should be considered in the etiology. Complete cure is achieved with medical treatment, and no complications are expected.

Keywords: *Lophomonas blattarum*, pansinusitis, treatment

INTRODUCTION

Lophomonas blattarum was first described by S. Stein in the intestine of the cockroach *Blatta orientalis* in 1860 (1). The shape of this parasite is round and oval, with a diameter of 20-60 µm and numerous flagellas. *Lophomonas blattarum* is a rare cause of bronchopulmonary infection and respiratory tract symptoms. Although it rarely infects humans, a limited number of studies have reported *L. blattarum* and other flagellated parasites as the cause of bronchopulmonary infection and sinusitis in humans (2-4). These protozoa infect immunocompromised individuals more commonly (5). Most of the reported cases are from China and Turkey (6, 7). The first human case of *L. blattarum* infection was reported in Iran very recently in 2016 (8).

CASE PRESENTATION

When the lumbar puncture of a 44-year-old female patient admitted to the emergency department with blurred consciousness and elevated fever on 07/11/2018 revealed purulent cerebrospinal fluid, she was followed up with the diagnosis of meningitis at the neurology intensive care unit. The patient had a history of breast cancer, brain tumor, cholecystectomy, appendectomy, hypothyroidism, and surgeries. Computed tomography on the 23rd day of hospitalization at the intensive care unit revealed pansinusitis, and the patient was subsequently consulted to us (Figure 1).

Otolaryngology examination revealed that the patient had mild hyperemia with nasal obstruction and postnasal discharge, whereas the current otoscopy was normal.

Laboratory examination revealed elevated C-reactive protein levels and eosinophilia.

Computed tomography revealed widespread meningoencephalitis, intracranial abscesses, and signs of infection in the paranasal sinuses, and infection density was observed in the right sphenoid sinus (Figure 1).

Considering these findings, punch biopsy and swab culture samples were obtained from the patient's ethmoid sinuses in the left nasal passage at the intensive care unit. Histopathological examination revealed chronic inflammation, and *L. blattarum* growth was identified in the swab culture. Considering the patient's general condition and additional diseases and after examining the previous literature (8), intravenous metronidazole at 2 g/day was administered for 25 days to our immunosuppressed patient. Subsequently, the sinusitis regressed clinically and radiologically (Figure 2). Informed consent was obtained from the patient regarding the data to be used in this study.

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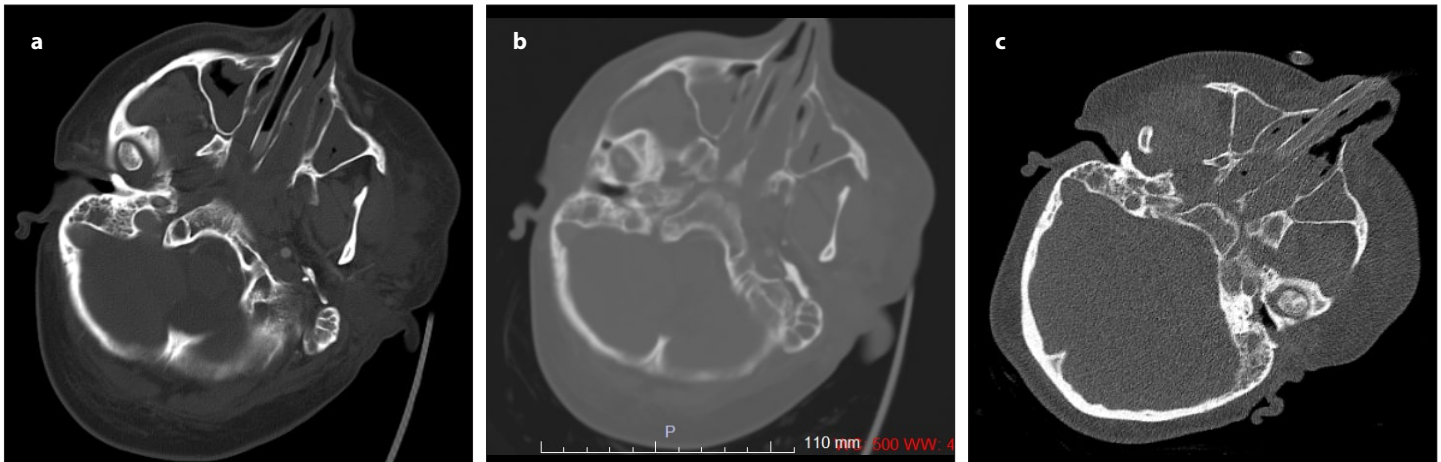


Figure 1. a-c. Pre-treatment imaging findings

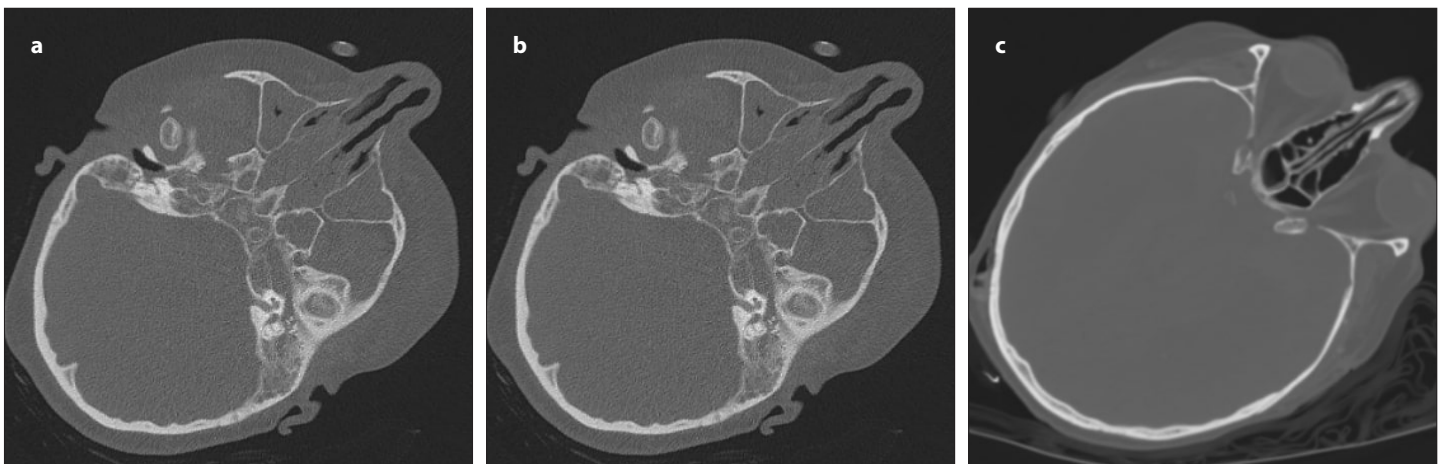


Figure 2. a-c. Post-treatment imaging findings

DISCUSSION

In recent years, the incidence of *L. blattarum* bronchopulmonary infection has been increasing, especially in South China (1). However, such cases have also been reported in Spain and Turkey (8). *Lophomonas blattarum* sinusitis was first reported in Iran in 2016. To the best of our knowledge, the case of our patient is only the second reported case. Most cases of *L. blattarum* infections have been reported in immunocompromised patients, as that in our study (8). Therefore, clinicians must consider *L. blattarum* because the actual mechanism of transmission is not yet clearly defined. In addition, there may be a relationship between respiratory allergy and *L. blattarum* or other flagellates given that similar flagellates have been reported in the intestine of house dust mites (2). Therefore, *Lophomonas* infections and metronidazole treatment must be considered in patients with chronic allergy who do not respond to treatment.

Informed Consent: Written informed consent was obtained from the patient who participated in this study.

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Processing - M.Y., M.K.B.; Analysis and/or Interpretation - M.C.B., M.K.B.; Literature Search - Y.B.B., M.K.B.; Writing Manuscript - M.C.B., M.Y.; Critical Review - M.C.B., Y.B.B.

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