Lophomonas Blattarum Infecting Paranasal Sinuses: A Rare Case Report

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Abstract: Lophomonas blattarum is a flagellate protozoan which is a rare cause of broncho-pulmonary and sinus infection. This paper reports a rare case of Lophomonas presenting with unusual complaints of ptosis and headache in a 42 year old diabetic male.

Keywords: Lophomonas, Blattarum, Sinuses, Sinusitis, Paranasal Sinuses

1. Introduction

Lophomonas blattarum is a usual protozoan commensal in the intestinal tracts of termites and cockroaches. It belongs to the super group Excavata [1]. It infects ciliated epithelium and is a rare cause of paranasal sinus infections. It can also involve reproductive system. The components of diagnosis have been reported to include features similar to pneumonia, chronic obstructive pulmonary disease, lung cancer, allergic broncho-pulmonary aspergillosis, interstitial lung disease, lung abscess, tuberculosis, chronic cough, pulmonary cyst, eosinophilia, asthma, atelectasis, and bronchiectasis. Around 136 cases have been published in the literature till 2013. Majority of the cases were reported from Republic of China [2].

2. Case Report

A 42 year old, known diabetic male was admitted in our tertiary care hospital with history of drooping of right upper eyelid and headache since 20 days. The symptoms were sudden in onset and non - progressive in nature with no significant travel history. There was no history of decreased vision, nasal discharge, anosmia, breathing difficulty or past COVID - 19 infection.

Patient was evaluated and all routine blood investigations were done which were within normal limits. HbA1c was 5.8%. No significant abnormality was detected on detailed otorhinolaryngological examination. Ophthalmological opinion was sought and was unremarkable beside the ptosis.

Non Contrast Computed Tomography (NCCT) of Nose and Para Nasal Sinuses was done. Mild mucosal thickening in right maxillary sinus, right ethmoidal sinus with internal hyperdensities was noted. Soft tissue density noted in extracranal space of right orbit which was suspicious of Invasive fungal Sinusitis.

Patient was then planned for surgery. A Functional Endoscopic Sinus Surgery (FESS) was performed and all the paranasal sinuses were explored. Whitish debris and polypoidal changes were noted in right maxillary and ethmoidal sinuses and were sent for microscopic examination.

Direct microscopic report of the secretions from ethmoid sinuses (both anterior and posterior), adjacent lamina papyracea and peri - orbital fat beneath lamina papyracea in a 10% KOH mount showed Lophomonas blattarum.

Figure 1: NCCT - PNS showing soft tissue density in right maxillary and ethmoidal sinuses.

Figure 2: 10% KOH mount (40X): Flagellated Lophomonas blattarum (** and red blood cells (*) seen in ethmoid sinus.
3. Discussion

The first case of human infection of L. blattarum was reported in 1993 from China [1]. Multiple factors such as international travel, prolonged use of steroids and increased number of immune - compromised people have resulted in the increased susceptibility of population to the parasitic diseases. Poor socioeconomic status is also a contributing factor for arthropod borne diseases [3].

*Lophomonas blattarum* have most notably been reported to cause broncho – pulmonary infection. However, sinus infection by this flagellated protozoan is a rare incidence. Most of the cases are reported in immunocompromised individuals [4]. This infection is difficult to differentiate from other common infections with similar symptoms such as pneumonia, bronchitis, or inflammation on the basis of clinical features and radiological investigations [5].

Management includes proper evaluation of upper respiratory tract and ruling out other disease with similar symptoms as mentioned above. There is no treatment of choice reported till now. However, in the literature, metronidazole has been reported to be beneficial. Metronidazole is usually given in a dose of 500 mg orally 8 - 12hourly or 2 g. dailyorally for adults and 7.5 - 15 mg/kg 8 hourly in children for a period of 1 week. Severe cases may be treated with intravenous metronidazole 15 mg/kg/h followed by 7.5 mg/kg/6 h as maintenance [7, 8].

Very few cases (less than 5) have been reported in the literature with symptoms of sinusitis [1]. Our patient presented with ptosis and headache and hence underwent FESS. All the infected debris was removed. Post - operative 100 ml metronidazole 8 hourly was given intravenously for 1 week. Patient showed good clinical response with improvement of ptosis and is kept in follow up.

It is challenging to diagnose parasitic infections solely on the basis of clinical presentation. The exact mechanism of transmission and pathogenesis is undetermined. Therefore a detailed work - up and high clinical suspicion is necessary.

References


