

Case Report

Balantidium coli causing acute diarrheal disease in a diabetic

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Received: 30 December 2022

Accepted: 31 January 2023

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ABSTRACT

Balantidium coli is a rare, free-living protozoan causing an acute diarrheal disease in human beings similar to amoebic dysentery. It is found in tropical and subtropical regions but is very rare in the Indian subcontinent. It is an exceedingly rare infection and only a handful of case reports have been published worldwide on this infection. Here, we report a case of a *Balantidium coli* infection presenting as an acute diarrheal disease from South India.

Keywords: *Balantidium coli*, India, Diarrhea, Large bowel

INTRODUCTION

Balantidium coli is the largest protozoan and the only ciliated parasite that infects humans.¹ Areas of a high prevalence of *B. coli* include regions of Latin America, Iran, Papua New Guinea, the Philippines, and some countries of the Middle East, commonly where hygiene is poor and where pig-to-human contact is more common.² Here, we encounter a rare case of *B. coli* infection in a middle-aged Indian male.

CASE REPORT

A 53-year-old male, known diabetic, presented with loose stools, vomiting, and lower abdominal pain for two days. He had multiple episodes of small quantity, mucoid, non-bloody stools. Diarrhea was associated with multiple episodes of non-bilious vomiting. He had no history of fever, myalgia, arthralgia or passage of worms in stools. He had consumed food at a roadside vendor 2 days prior to symptom onset. He was diagnosed with type 2 diabetes 12 years ago for which he is on OHAs and insulin. He consumed a mixed diet but did not consume pork. He was neither a smoker nor an alcoholic.

On examination, he was dehydrated. His blood pressure was 90/60 mmHg, pulse rate: 130/min, respiratory rate: 22/min, and SpO₂: 97% in room air ventilation. The abdomen was soft. There was tenderness in the right lumbar and umbilical regions. There was no organomegaly. Bowel sounds were heard normally. Other systems examination was unremarkable.

Blood investigations on admission revealed hemoglobin (Hb): 14.2 g/dl, total leucocyte count (TLC): 8400, platelet count: 1.71 lakhs/cu.mm, urea: 52 mg/dl, creatinine: 0.9 mg/dl, sodium: 139 mEq/l, potassium: 4.6 mEq/l. His liver function tests (LFTs) were normal. Viral markers were negative. Stool microscopy revealed motile, ciliated trophozoites of *B. coli*.

Chest X-ray and ultrasound of the abdomen revealed no abnormalities. He was treated with IV and then later oral metronidazole for a total of 10 days. Probiotics and antiemetics were given and he was hydrated adequately with IV fluids until he tolerated fluids orally. He improved symptomatically on day 4 of hospital stay and was discharged after symptoms had subsided on day 6.



Figure 1: The motile, oval, ciliated trophozoites of *B. coli* were demonstrated by the hanging drop method.

DISCUSSION

B. coli is a free-living protozoan parasite found mostly in the tropics and subtropics. It is rarely reported in India. It is more common in areas where there is increased contact with pigs.

Its life cycle is completed in a single host. Pigs are the natural hosts; humans are only accidental hosts. Humans are infected by ingestion of food and water contaminated with cysts, which are the infective form. Mature cysts are passed in the stool and can remain viable for upto 2 weeks in the environment.³ Excystation and release of trophozoite probably occurs in the small intestine, but multiplication takes place in the large intestine.⁴ Trophozoites are the feeding stage of the parasite, they multiply in the gut lumen or the submucosa of the large intestine by asexual and sexual methods.

Three forms of the disease may occur: asymptomatic cyst excretion, acute colitis, and chronic infection.⁵ The acute disease is very similar to amoebic dysentery. The parasites invade the intestinal mucosa and form multiple tiny superficial ulcers. Patients have frequent episodes of diarrhea with profuse mucus and blood. Complications include perforation of the large intestine, peritonitis, appendiceal involvement, etc.

Rare extraintestinal manifestations like liver abscess, and pleuritis, have also been reported like in this case report of a liver abscess.⁶ One report from India also mentions that the organism was identified in the urine of a patient, indicating the possible systemic spread of the parasite.⁷ Other reports, like this one from Turkey indicate that it is isolated more commonly from immunocompromised patients.⁸

Our patient was a longstanding diabetic who presented with acute diarrhea and was diagnosed with *B. coli* on stool examination. He had no history of contact with pigs or other animals. Therefore, the likely mode of transmission could have been contaminated food or water.

CONCLUSION

The case discussed above is a rare case of a *B. coli* infection from South India. Even though rare in India, it can be kept in mind as a differential diagnosis for a patient presenting with large bowel diarrhea. The fact that extraintestinal manifestations are also a possibility merits consideration as well. The importance of stool microscopy in diarrhea is also highlighted.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Bose S, Sai S, Rajalakshmi KV, Dayanandan Y, Dorairaj A. *Balantidium coli* causing acute diarrheal disease in a diabetic. Int J Adv Med 2023;10:245-6.