Giardia lamblia infection as a possible cause of eosinophilic ascites and enterocolitis

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To the Editor,

Eosinophilic ascites is rarely observed in clinical practice and uncommonly related to parasitic infections. It may also be associated with subserosal type of eosinophilic gastroenteritis, peritoneal dialysis, lymphomas, and hypereosinophilic syndrome.

A 45-year-old, previously healthy, male was admitted to the hospital complaining of abdominal pain, watery diarrhea with mucus (4-5 times per day) and fever lasting for 20 days. The patient denied taking any drugs or herbal medicine. He had no history of atopy or food allergy. His body temperature was 37.5 ºC. Physical examination revealed mild abdominal distention with shifting dullness. The laboratory evaluation was significant for a white blood cell count of 26,700/mm^3, with 67% eosinophils, and normal serum chemistries. The sedimentation rate was 10 mm/h and CRP 1.5 mg/dL. The titres of auto-antibodies were negative as well as serology for Toxocara canis, Toxoplasmosis, Fasciolasis, Leishmaniasis, and Echinococcus granulosus. Total IgE value was normal. FIP1L1-PDGFRA gene mutation (which is often associated with idiopathic hypereosinophilic syndrome) was negative.

Ultrasonography showed moderate ascites without hepatosplenomegaly. Aspirated fluid was purulent in appearance, and the study of ascitic fluid showed important eosinophilia without malignant cells; cultures for aerobic and anaerobic bacteria were negative. Acid-fast staining and culture for Mycobacterium tuberculosis were also negative. Bone marrow biopsy demonstrated hypercellularity with 35% mature eosinophils and its precursors, without blasts. Gastroscopy showed mild hyperemic mucosa in antrum and duodenal bulb with no histological evidence of eosinophilic infiltration. Colonoscopy revealed petechial dots along the left colonic mucosa. Biopsies of the terminal ileum and colon showed slight eosinophilic infiltration of lamina propria and criptic epithelium (Fig. 1). Abdominal CT demonstrated circumferential wall thickening of the third part of duodenum and moderate ascites. A diagnostic laparoscopy was performed and revealed diffuse peritoneal inflammation. Approximately 3500 mL of purulent ascites was drained and multiple peritoneal biopsies were taken. Histology showed marked eosinophilic infiltration with some lymphocytes and histiocytes (Fig. 2). The blood and stool cultures were negative. Microscopic

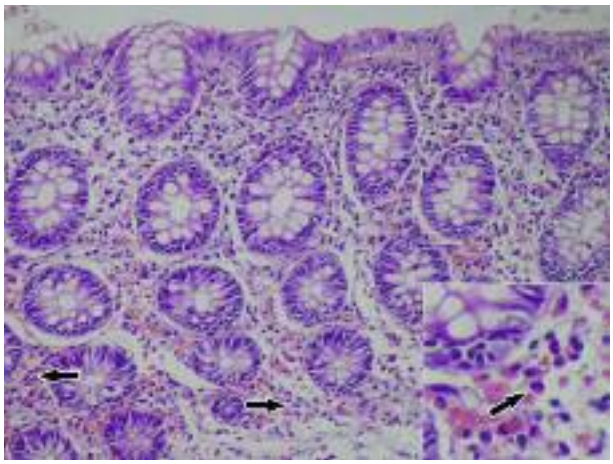

Fig. 1. — Colonic biopsy showing eosinophilic infiltration in colonic mucosa (arrows) (Hematoxylin/eosin, ×10).

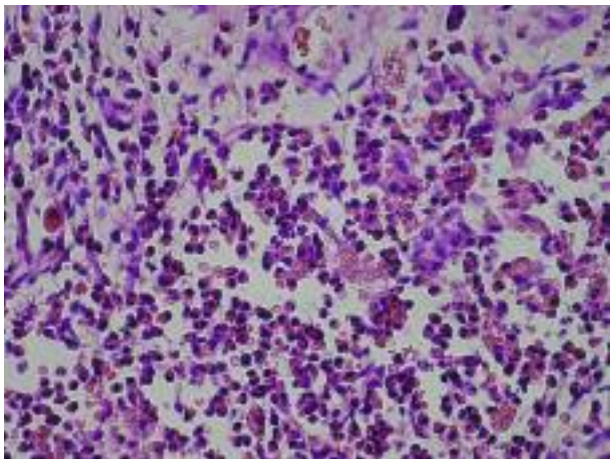

Fig. 2. — Peritoneal biopsy showing dense eosinophilic infiltration (Hematoxylin/eosin, ×40).

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examination of duodenal aspirate and stool samples yielded Giardia lamblia trophozoites and cysts, respectively. The patient was treated with metronidazole (1500 mg/d orally) for 15 days, and the patients' symptoms resolved. The eosinophil count decreased to 6% about three weeks after the initiation of metronidazole treatment. He was discharged uneventfully. One month later, ascites was no longer apparent at sonographic evaluation and the eosinophil count was 1%. In the light of all these findings, the final diagnosis was eosinophilic ascites and enterocolitis due to Giardia lamblia infection.

Gastrointestinal tract diseases like eosinophilic gastroenteritis, inflammatory bowel diseases, allergic disorders, and helminthic or protozoan infections are usually associated with eosinophilic infiltration. However, the links between Giardia lamblia infection and this phenomenon have not been elucidated. It can be associated with dense eosinophilic infiltration of the jejunum but without peripheral eosinophilia (1). It has recently been demonstrated that oral administration of excretory and secretory antigens from Giardia lamblia can induce increase of eosinophilic cell numbers in mouse intestine (2). Eosinophilic ascites due to parasitic infestations such as Toxocara canis (3), and Strongyloides stercoralis (4) has been reported. To the best of our knowledge, this represents the first patient with eosinophilic ascites and enterocolitis due to Giardia lamblia infection in English-written literature. Treatment with metronidazole resulted in a rapid resolution of symptoms and disappearance of the eosinophilia, which strongly suggested a causative role of this protozoan in the clinical syndrome of the patient.

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