Ascites and eosinophilic colitis in a young patient

Mohammed A. Yassin, *MD,* ***Fahmi Y. Khan,*** *MD,* ***Ahmed Al-Ani,*** *MRCP,* ***Zeinab Fawzy,*** *MD,* ***Issam A. Al-Bozom,*** *MD.*

ABSTRACT

A 32-year-old man presented with 3-weeks history of abdominal pain and distention. Physical examination showed ascites, with no stigmata of chronic liver disease. Cytological preparations from the ascitic fluid showed a heavy population of mature eosinophils. Histological examination of colonic biopsies revealed a heavy expansion of the mucosa by sheaths of eosinophils. On the following days, the peripheral eosinophilia, ascites and abdominal pain resolved spontaneously.

Saudi Med J 2005; Vol. 26 (12): 1983-1985

Eosinophilic gastroenteritis with ascites is an uncommon disorder of unknown etiology; characterized by recurrent episodes of infiltration of the gastrointestinal wall with eosinophils and peripheral eosinophilia. Eosinophilic colitis with ascites is extremely rare, in reviewing the literature (Pubmed and Medline), we learned that there is only one case reported about eosinophilic colitis with ascites.

Case Report. A 32-year-old man was admitted with 3-weeks history of abdominal pain, and distention. He described the abdominal pain as being generalized colicky in nature, associated with nausea, vomiting, and diarrhea 4-6 times per day resolved 2 days after admission. No obvious aggravating or relieving factors. The past medical history was unremarkable and he denied any history of smoking or alcohol consumption. Physical examination was unremarkable apart from ascites, no stigmata of chronic liver disease. Initial investigations showed hemoglobin level of 15 g/dl, total leucocyte count 15700/mm^3 (neutrophils 15.6%, lymphocytes 17.6%, monocyte 2.8%, eosinophils 63.8%, and basophil 0.1%), and adequate number of platelets; erythrocyte sedimentation rate (ESR) was 2 mm/hour; blood chemistry showed normal liver function test and serum electrolytes; prothrombin time (PT) and partial thromboplastin time (PTT) were normal. Immunoglobulin E level was 2271 ku/l. We carried out abdominal paracentesis under ultrasound guidance; cytological preparations from the ascitic fluid using both Papanicolaou and wright-Giemsa stains revealed a heavy population of mature eosinophils mixed with occasional lymphocytes, macrophages, and rare reactive mesothelial cells (**Figure 1**), while acid-fast bacilli, gram stain, and culture were negative. Bone marrow aspiration showed marked eosinophilia (**Figure 2**). Ultrasound showed moderate ascites, otherwise, the ultrasound was normal, CT scan of the chest abdomen, and pelvis with contrast for abdomen showed changes in the small bowel as well as the left cecal region and ascending colon and few small mesenteric lymph nodes and moderate ascites. Upper gastrointestinal endoscopy was normal, while the lower gastrointestinal endoscopy showed multiple lesions. Histological examination of colonic biopsies revealed heavy expansion of the mucosa by sheaths of eosinophils with occasional lymphocytes and plasma cells.

From the Department of Medicine (Yassin, Khan, Al-Ani, Fawzy), and the Department of Laboratory Medicine and Pathology (Al-Bozom), Hamad General Hospital, Doha, *Qatar*.

Received 27th March 2005. Accepted for publication in final form 28th August 2005.

Address correspondence and reprint request to: Dr. Mohammed A. Yassin, Department of Medicine, Hamad General Hospital, PO Box 3050, Doha, *Qatar*. Fax. +974 4392273. E-mail: yassin160@hotmail.com

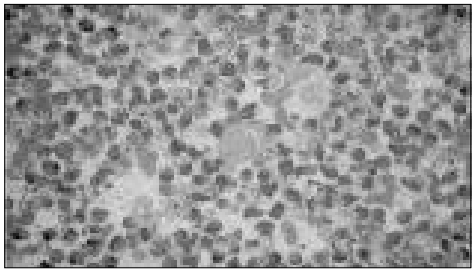

Figure 1 - Cytological preparation of ascitic fluid showing numerous eosinophils with rare mesothelial cells. (Wright and Giemsa stain x 400)

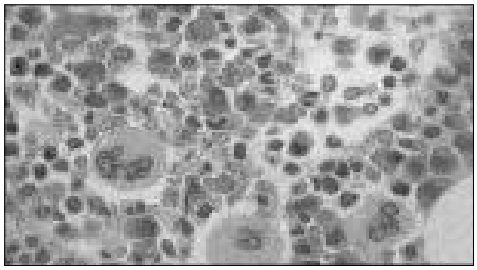

Figure 2 - Bone marrow biopsy showing marked eosinophilia. (Hematoxylin and Eosin x 1000)

A good number of those eosinophils are observed traversing the muscularis mucosa. There is no evidence of parasitic eggs, granulomas, inflammatory bowel disease, ischemia, viral inclusions, amyloid deposits or malignancy (**Figure 3**). On the following days, the peripheral eosinophilia, ascites and abdominal pain resolved spontaneously. Accordingly, the patient was discharged.

Discussion. Eosinophilic gastroenteritis (EGE) is a rare condition of unknown cause characterized by peripheral eosinophilia, eosinophilic infiltration of the gastrointestinal tract, and gastrointestinal symptomatology.[1] Eosinophilic colitis with ascites is extremely rare, in reviewing the literature (Pubmed and Medline), 49 cases of eosinophilic colitis were reported in adults, from March 1953 until December 2004, of these only one case of eosinophilic colitis with ascites was reported.[2] Nine cases of eosinophilic colitis with malabsorption were reported mostly related to intestinal warms.[3-11] Klein et al,[12] suggested a classification, based on the histology of the lesion: mucosal, muscularis, and subserosal disease. The signs and symptoms of eosinophilic gastroenteritis are related to the layer(s), and extent of bowel involved with eosinophilic infiltration: mucosa; muscle; and subserosa.[12] The prevalence of each subtype is unknown as reporting and referral biases. Surgical series report a predominance of muscular disease with obstruction,[12] while medical series primarily describe patients with mucosal involvement.[13-15]

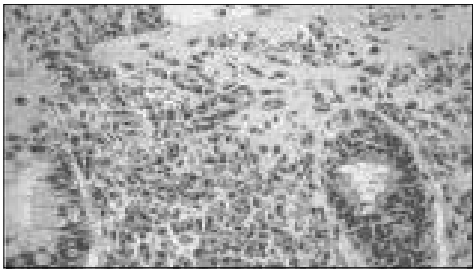

Figure 3 - Colonic biopsy showing expansion of the mucosa by numerous clusters of eosinophils. (Hematoxylin and Eosin x 1000).

Eosinophilic mucosal infiltration produces nonspecific symptoms, which depend upon the organ(s) involved. The entire gastrointestinal tract from the esophagus to the colon, including bile ducts, can be affected.[15,17] Serosal eosinophilic infiltration, the rare form of presentation, may result in development of eosinophilic ascites. Our patient had predominantly subserosal type of eosinophilic colitis. This layer involvement usually occurs as a part of a transmural infiltration of the gastrointestinal tract layer as in the case being described here. Erythrocyte sedimentation rate is normal or high in eosinophilic gastro enteritis with peripheral eosinophilia; in our patient ESR was 2 mm/l hour, and the peripheral eosinophilia was obviously elevated (10,000/uL). The evidence of elevations in IgE suggested that atopy might be involved in the pathogenesis of the disease. Immunoglobulin E level was high in our patient. The endoscopic appearance in eosinophilic gastroenteritis is non-specific, including erythematous, friable, nodular, and occasional ulcerative changes. Definitive diagnosis requires histological evidence of eosinophilic infiltration. Eosinophilic infiltrates are usually patchy in distribution and may be present in otherwise, normal, non-inflamed bowel wall.

In our patient, we carried out different examinations, such as gastroduodenoscopy and colonoscopy; the biopsies taken from upper gastrointestinal were normal, while the lower gastrointestinal biopsies showed eosinophilic colitis. Eosinophilic gastroenteritis either will remit spontaneously[2] as our patient remitted spontaneously and did not require any treatment, or it probably progress to malabsorption[3-11] in a form of iron deficiency anemia, which we can treated easily with iron supplements, or diarrhea that can managed with antidiarrheal agents. In severe cases of eosinophilic gastroenteritis, we can used steroids in a dose of 20-40 mg/day. Flare-up after tapering the steroids could happen, which requires another dose of steroids. Eosinophilic ascites have a wide differential diagnosis including hyper-eosinophilic syndrome, lymphoma, strongyloids stercoralis infection, ruptured hydatid cyst, and EGE. Thus, we should always considered EGE in the differential diagnosis of eosinophilic ascites.

References

1. Kuri K, Lee M. Eosinophilic gastroenteritis manifesting with ascites. ***South Med J*** 1994; 87: 956-957.
2. Ong GY, Hsu CC, Changchein CS, Lu SN, Huang SC. Eosinophilic gastroenteritis involving the distal small intestine and proximal colon. ***Chang Gung Med J*** 2002; 25: 56-61.
3. de Jong MD, Baan J, Lommmerse E, Van Gool T. Severe diarrhea and eosinophilic colitis attributed to pinworms (Enterobius vermicularis). ***Ned Tijdschr Geneeskd*** 2003; 147: 813-815.
4. Corsetti M, Basilisco G, Pometta R, Allocca M, Conte D. Mistaken diagnosis of eosinophilic colitis. ***Ital J Gastroenterol Hepatol*** 1999; 31: 607-609.
5. Al-Samman M, Haque S, Long JD. Strongyloidiasis colitis: a case report and review of the literature. ***J Clin Gastroenterol*** 1999; 28: 77-80.
6. Takeyama Y, Kamimura S, Suzumiya J, Oh K, Okumura M, Akahane H, et al. Case report: eosinophilic colitis with high antibody titre against Ascaris suum. ***J Gastroenterol Hepatol*** 1997; 12: 204-206.
7. Cacopardo B, Onorante A, Nigro L, Patamia I, Tosto S, Romano F, et al. Eosinophilic ileocolitis by Enterobius vermicularis: a description of two rare cases. ***Ital J Gastroenterol Hepatol*** 1997; 29: 51-53.
8. Gutierrez Y, Bhatia P, Garbadawala ST, Dobson JR, Wallace TM, Carey TE. Strongyloides stercoralis eosinophilic granulomatous enterocolitis. ***Am J Surg Pathol*** 1996; 20: 603-612.
9. Liu LX, Chi J, Upton MP, Ash LR. Eosinophilic colitis associated with larvae of the pinworm Enterobius vermicularis. ***Lancet*** 1995; 346: 410-412.
10. Macedo T, MacCarty RL. Eosinophilic ileocolitis secondary to Enterobius vermicularis: case report. ***Abdom Imaging*** 2000; 25: 530-532.
11. Moore D, Lichtman S, Lentz J, Stringer D, Sherman P. Eosinophilic gastroenteritis presenting in an adolescent with isolated colonic involvement. ***Gut*** 1986; 27: 1219-1222.
12. Klein NC, Hargrove RL, Sleisenger MH, Jeffries GH. Eosinophilic gastroenteritis. ***Medicine*** 1970; 49: 299-319.
13. Ureles AL, Alschibaja T, Lodico D. Idiopathic eosinophilic infiltration of the gastrointestinal tract, diffuse and circumscribed. ***Am J Med*** 1961; 30: 899.
14. Talley NJ, Shorter RG, Phillips S, Lichtman S, Lentz J, Stringer D, et al. Eosinophilic gastroenteritis: A clinicopathological study of patients with disease of the mucosa, muscle layer, and subserosal tissues. ***Gut*** 1990; 31: 54-58.
15. Cello JP. Eosinophilic gastroenteritis a complex disease entity. ***Am J Med*** 1979; 67: 1097-1104.
16. Schoonbroodt D, Horsmans Y, Laka A, Geubel AP, Hoang P. Eosinophilic gastroenteritis presenting with colitis and cholangitis. ***Dig Dis Sci*** 1995; 40: 308-314.
17. Matsushita M, Hajiro K, Morita Y, Takakuwa H, Suzaki T. Eosinophilic gastroenteritis involving the entire digestive tract. ***Am J Gastroenterol*** 1995; 90: 1868-1870.