Case Report

Eosinophilic Gastroenteritis: An Unclear Etiology of Ascites and Dramatic Response to Steroids Can be a Diagnostic Key

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Abstract

Eosinophilic gastroenteritis disorder is an uncommon inflammatory disorder of the gastrointestinal tract, affecting predominantly, stomach and small intestine. Subserosal inflammation is a major source of minor-to-moderate ascites. We present the case of an 8-year-old girl child who was brought to the hospital with complaints of chronic abdomen pain and mild ascites. There was a remarkable finding of eosinophils in ascitic fluid. Other differential diagnosis was excluded. Treatment abdomen with deflazacort gave significant resolution of symptoms over the time.

Keywords: Ascites, eosinophilic gastroenteritis, gastrointestinal inflammatory disorder

Introduction

Eosinophilic gastroenteritis is a rare pathology, with a prevalence of 28/100,000 population.[1] It is characterized by eosinophilic infiltration of various layers of the gastrointestinal (GI) tract. The clinical presentation is vague and can mimic a variety of GI disorders. Eosinophilic gastroenteritis may affect any segment of gastrointestinal track. Activated eosinophils once recruited, induce significant inflammatory response by secreting cytotoxic granules leading to structural damage and infiltration to intestinal layers.[2]Ascites is a late manifestation of eosinophilic gastroenteritis and occur when the serosal layer of the bowel is affected.[3] Atopy and food allergies are noted in 50%–70% of the cases.[4] We are reporting a case of eosinophilic ascites, which responded dramatically to steroids, in a patient without any history of seasonal and food allergies or asthma. An informed consent for the same has been obtained.

Case Report

We report the case of an 8-year-old girl child with a history of on and off episodes of stomach pain which increased with defecation from the past 2 years. There was a positive history of intermittent on and off alternate episodes of constipation and free motion. Mother denied any positive history of nausea, vomiting, chest pain, shortness of breath, asthma, joint swelling and pores, skin rash, allergic reactions to meals or medications. There was no history of recent travel.

On physical examination, there was no abdominal distension. Bowel sounds were normal, and no diffuse or rebound tenderness was present. On palpation, there were no hepatomegaly/splenomegaly or stomach masses.

Figure 1: Ultrasonography shows mild ascites. Abdominal and pelvic magnetic resonance imaging confirmed mild ascites with a thickening of the gastric antrum and proximal small bowel with no mesenteric lymphadenopathy [Figure 2]. No endoparasites seen. An ultrasound-guided ascitic tap was done and fluid sent for routine, microscopy, and adenosine deaminase (ADA) test. The ADA was negative. Ascitic fluid analysis showed 5,600/μL of WBC count with 46% eosinophils. Liver function tests were within described normal range. Serum Immunoglobulin E (IgE) level was 440 IU/mL (accepted upper limit 150 IU/mL). Esophagogastroduodenoscopy, was suggestive of sessile

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polyp in pre-pyloric region. The rest of the study was normal [Figure 3].

Fecal sample was free of any occult blood, mucous, or endoparasites. The patient was treated with deflazacort (15 mg/day), along with probiotics which was gradually decreased over time and then stopped. Pain abdomen and ascites resolved, and there was decrease in an absolute eosinophil count (106/μL) in peripheral blood. Serum levels of IgE dropped to 76IU/mL; ultrasonography of the abdomen and pelvis confirmed resolving of ascites and small bowel thickening. The patient has been asymptomatic since the past 6 months and is off medications. No signs of stunted growth (based on age vs. weight and height) seen in patient (z score– 1standard deviation).

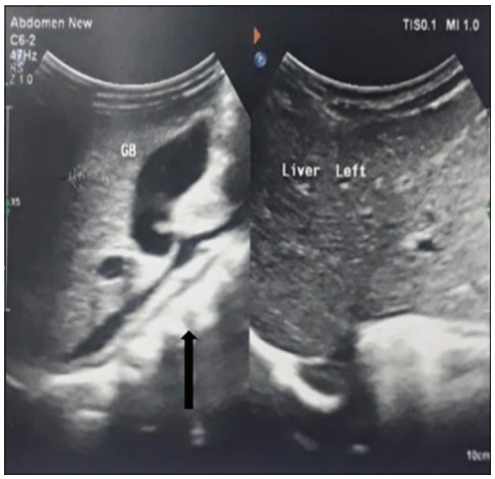

Figure 1: Ultrasonographic demonstration of free peritoneal fluid (arrow)

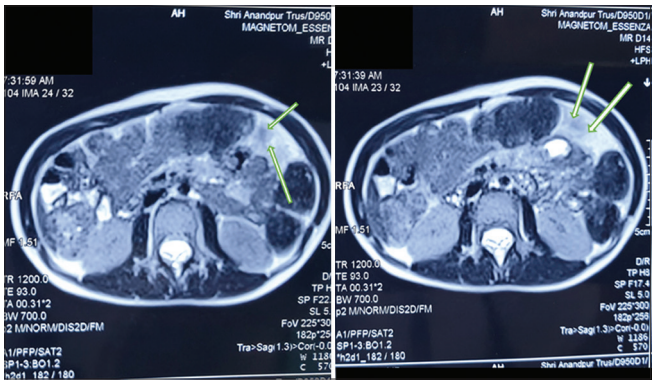

Figure 2: Confirmation of free peritoneal fluid on contrast-enhanced magnetic resonance imaging (arrow)

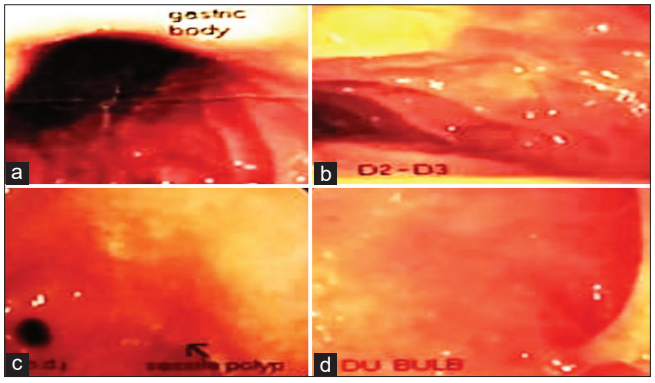

Figure 3: Esophagogastroduodenoscopy, (a) normal studies till gastroesophageal junction (b) normal duodenum, (c) sessile polyp in prepyloric region, and (d) normal duodenal bulb

Discussion

Eosinophilic gastrointestinal disorder (EGID) is a rare disorder, which can present with various GI manifestations depending on the involvement of specific site (esophagus to the rectum) and the layer of the GI tract. Nonspecific GI signs can be present with or without association of peripheral eosinophilia.[3,4] Grouping of Klein's classification for EGID is primarily based on the GI layer involved., It describes three subtypes of EGID (mucosal, muscular, and subserosal), with an overlap in a few patients.[5,6]

EGID can occur in a wide age range, from infancy through the seventh decade of life. Although cases have been reported worldwide, the data for the exact incidence of eosinophilic gastroenteritis are inadequate, especially with reference to the genuine occurrence, diagnostic standards, and its subtypes. A total of 10 cases have been reported over a 10-year period in India.[7]

GI signs, laboratory, and pathological findings remain the most common and the most handy diagnostic tool.[7-9] An increased peripheral count of eosinophils, abundance of eosinophils in the ascitic tap, and the dramatic response to steroids clinches towards the diagnosis and hypersensitivity-mediated pathology of disease.[10] A study by Mayo Clinics reported that more than 50% patients of eosinophilic gastroenteritis had positive history of allergies such as rhinitis, drug allergy, eczema, and asthma, but this case had no such history.[10]

Subserosal inflammation is a source of ascites in EGID.[5,6] Furthermore, this subgroup of patients are clinically distinct, with stomach bloating (does not get relief with proton-pump inhibitor), better eosinophil counts, and dramatic response to steroid therapy.[4] Untreated patients can remit spontaneously or have extreme malabsorption, ascites and intestinal obstruction. In majority of cases, the disorder is basically benign and pharmacological treatments are not usually indicated.[2] Many patients were reported to get better spontaneously within a couple of days. Dietary control is quite effective in preventing remission of symptoms in about 87.2% of kids and 88% of adults. Corticosteroids are the first line of treatment in most of the patients. A 2-week high-dose steroid therapy was found to provide a dramatic symptomatic relief, no matter what the histological subtype of EGID was. Tapering dose every other 2 weeks is enough to prevent the remission. Relapse might occur only in few cases after months or years of steroid therapy, but repeat therapy promises relief from symptoms. Only a minority of patients require long-term therapy with low dose of deflazacort (6 mg/day). Inpatients who are resistant to

corticosteroids, therapy with azathioprine or 6-mercaptopurine must be considered. Humanized anti-interleukin-5 antibodies are a promising and proven therapy; however, unacceptable adverse effects and exorbitant price limits its clinical utility.[5,10] Nonspecific clinical signs and doubtful etiology of ascites makes this situation ambiguous and liable to misdiagnosis. Only an excellent clinical correlation with laboratory and histopathological findings can unveil the prognosis of this rare, effortlessly treatable disorder. Therapy with low-dose deflazacort may lessen the length and severity of clinical signs and symptoms. Infections with parasites and malignancy must be ruled out before initiating steroid therapy as they can mask the clinical signs for long.

Conclusion

EGID is a rare but curable disorder which mimics many other GI disorders, the diagnosis of which is based on a combination of clinical signs and symptoms along with laboratory, radiological and histopathological findings. Eosinophilic ascites is a rare presentation of EGID, particularly involving the serosal GI tract. The present case was characterized by an obscure etiology of ascites, inflammation of the GI tract, atypical symptoms of on and off episode of constipation, and loose motion and noticeable response to steroid therapy. The present case report might not fill the gap of knowledge on eosinophilic gastroenteritis but will certainly add value to the limited literature available.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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