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Available online at: http://www.iajps.com *A Case Report*

EOSINOPHILIC GASTROENTERITIS: A CASE REPORT

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Abstract:

Eosinophilic gastroenteritis [EGE] is a rare disease characterized by peripheral eosinophilia and eosinophilic infiltration of the gastrointestinal tract especially in stomach and proximal portion of small bowel. It has a nonspecific clinical symptom depending on the affected GI layer including abdominal pain, nausea, vomiting, diarrhea, weight loss, ascites, and malabsorption. The diagnosis is made, based on imaging, laboratory results, clinical findings and good response following treatment with steroids. We present a case of 51-year-old women complaining of abdominal pain, distention and loss of appetite for 2 weeks. After ruling out infection, liver pathology and malignancies by labs, colonoscopy, diagnostic paracentesisis and CT, EGE was suspected. Esophagogastroduodenoscopy was preformed, and duodenal biopsy showed infiltration of eosinophils 8 cell/HPF in the lamina propria. These findings confirmed a diagnosis of subserosal EGE. She was treated with prednisone [40 mg/d] with rapid improvement of her symptoms, normalization of the eosinophil count and disappearance of the abdominal fluid. Eosinophilic gastroenteritis is a rare disease and it should be kept in mind in patients of unexplained ascites. In such patients with negative workup, especially for parasitic infection and malignancy, EGE should be ruled out. Although peripheral blood or ascitic fluid eosinophilia is suggestive, its absence does not exclude the possibility of this diagnosis. Diagnosis and treatment is imperative to avoid possible complications of the disease such malabsorption and malnutrition. Patients with high index of suspicion of EGE should receive treatment with steroids; dramatic response to treatment will indirectly confirm the diagnosis of eosinophilic gastroenteritis and eosinophilic ascites.

Key-words: *Eosinophilic ascitis; ascitis; eosinophilia; gastroenteritis; Eosinophilic gastroenteritis.*

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INTRODUCTION:

Eosinophilic gastroenteritis [EGE] is a rare disease characterized by peripheral eosinophilia and eosinophilic infiltration of the gastrointestinal tract especially in the antrum of the stomach and proximal portion of small bowel without any known cause of eosinophilia. [1]. The prevalence of EGE in the United states is estimated to be 22-28 per 100,000 people [2]. EGE can affect patients of any age, but typically presents in the third through fifth decades and has a peak age of onset in the third decade. It has a nonspecific clinical symptom depending on the affected GI layer including abdominal pain, nausea, vomiting, diarrhea, weight loss, ascites, and malabsorption. the diagnosis of EGE is based on gastrointestinal symptoms, biopsies demonstrating eosinophilic infiltration of one or more areas of the gastrointestinal tract, No evidence of parasitic or extra-intestinal disease and good response following treatment with steroids [3]. The pathogenesis of EGE is not well understood but some studies indicate that there is an allergic component to the disease, in addition to the elevated serum Immunoglobulin E [IGE] levels [4 ,5]

CASE REPORT

A 51-year-old Saudi female presented to the clinic with complaints of diffuse abdominal pain, distention and loss of appetite for 2 weeks. She denied any history of recent travel, blood transfusion, alcohol consumption. no history of shortness of breath, chest pain or skin rash. On examination the patient was aware and showed no respiratory or pain distress, was afebrile and hemodynamically stable. There was no evidence of pallor, jaundice or peripheral edema. Abdominal examination showed moderate distention, diffusely tender. Liver span was within normal range. Laboratory data were as follows: Hgb 12.3 gm/dL, Htc 37.7, PLT 619 10^3/dL, WBC 11.1 10^3/dL, differential: neutrophils 6.57 10^3/dL, lymphocyte 2.58 10^3/dL , monocyte 0.772 10^3/dL , eosinophils 1.17 10^3/dL . Liver function tests were within normal limits. The IgE, C-reactive protein and Erythrocyte sedimentation rate levels were within normal limits. Tumor marker CA-125 was normal. Stool studies were negative for parasite and bacteria. On abdominal ultrasonography, the liver was seen normal in size and echotexture and all vessels were patent. Moderate amount of free peritoneal fluid was seen. Abdominal computer tomography [CT] revealed moderate ascitis **[figure 1]**. Esophagogastroduodenoscopy and colonoscopy were normal, duodenal biopsies revealed infiltration of eosinophils 8 cell/HPF in the lamina propria. Diagnostic paracentesis revealed hazy yellow fluid with no cytological signs of malignancy, white blood cell count of 156 cells/mm^3, 64% of which were eosinophils, lactate dehydrogenase 622.1 U/L, albumin 2.0 gm/dL [serum albumin 2.7 gm/dL]. Laboratory tests of the ascitic fluid were negative for bacterial culture and tuberculosis. The findings confirmed a diagnosis of sub-serosal EGE. She was treated with prednisone [40 mg/d] with rapid improvement of her symptoms, normalization of the eosinophil count and disappearance of the abdominal fluid.

DISCUSSION:

Eosinophilic gastroenteritis [EGE] is a rare disease characterized by peripheral eosinophilia with eosinophilic infiltration of the GI tract presenting with nonspecific GI symptoms in association. the disease is common among the pediatric patients, with afflicted adults typically between the 3rd and 5th decade of life [6] According to Klien classified EGE into mucosal, muscular and serosal depending on eosinophilic. Most commonly affect the mucosal layer. Mucosal and sub-serosal EGE are characterized by higher eosinophil counts as compared with EGE that involves the muscular layer. [7]. Reports of subsequent cases have showed a variable clinical manifestation depending on the affected GI layer, abdominal pain is the predominant presenting symptom among all 3 of the disease types.

Mucosal layer eosinophilic infiltration leads to nonspecific symptoms that depended on the area of which the GI tract was involved. The most common symptoms associated with mucosal layer infiltration were diarrhea, vomiting, early satiety and malabsorption associated with the mucosal layer.[8, 9]. Muscular layer involvement results incomplete or complete intestinal obstruction due to the GI tract wall thickening and impaired mobility, therefore the patient may present with symptoms of obstruction, including nausea vomiting and abdominal distention. [8, 9]. Sub-serosal layer infiltration may cause peritoneal irritation, which can lead to ascites [6].

Pathogenesis of the disease is not clear but one-half of patients with EGE have a history of an allergic disease including asthma, defined food sensitivities, eczema, or rhinitis. The exact immunological role of the eosinophils in this disease is not understood, the evidence suggests that eosinophil play a major effector cell in both allergic and non-allergic inflammations. 10

To diagnose EGE Talley et al have identified three diagnostic criteria:

1] The presence of gastrointestinal symptoms,

2] Biopsies demonstrating eosinophilic infiltration of one or more areas of the gastrointestinal tract.

3] No evidence of parasitic or extra-intestinal disease.

There are some other diseases associated with unexplained eosinophilia must be excluded such as intra-intestinal parasites, abdominal tuberculosis, malignancy, hyper-eosinophilic syndrome and vasculitis

The disease course of EGE is not well defined as studies are limited to case reports and small series. There have been some reports of patients who have gone untreated and have rare remission of disease. On the other hand, some untreated patients have progressed to marked malabsorption and malnutrition. In contrast, most patients treated with prednisone have periodic flare ups months to years after treatment.

Patients who are symptomatic or have evidence of malabsorption with confirmed diagnosis of EGE, an initial trial elimination diet, a six-food elimination diet, or an elemental diet should be attempted. Based on studies in eosinophilic esophagitis, such diets should be undertaken for a minimum of four to six weeks [11.] Whether this approach will yield similar results in EGE is yet to be determined.

Patients on an elemental diet are placed on an elemental formula, which eliminates all potential food allergens. The empiric elimination diet consists of avoidance of foods that most commonly cause immediate hypersensitivity in a population. The six-food elimination diet is the most commonly used empiric elimination diet. Specific foods that are avoided in the six-food elimination diet include soy, wheat, egg, milk, peanut/tree nuts, and fish/shellfish [12]

The main limitation of dietary therapy is patient compliance. For that reason, we decided to start our patient with EGE on glucocorticoid therapy as initial treatment.

Chen *et al* stated that a study of 15 patients with EGE, 13 were treated with 10 to 40 mg/day prednisolone and symptoms were resolved with in 2 weeks. One third of patients relapsing with in 12 months. Furthermore, 13% required long-term treatment with prednisolone 5 to 10 mg/day [13]. Other studies have stated that cases that fail to respond to corticosteroids, treatment with azathioprine or 6-mercaptopurine should be considered [14].

1. Figures

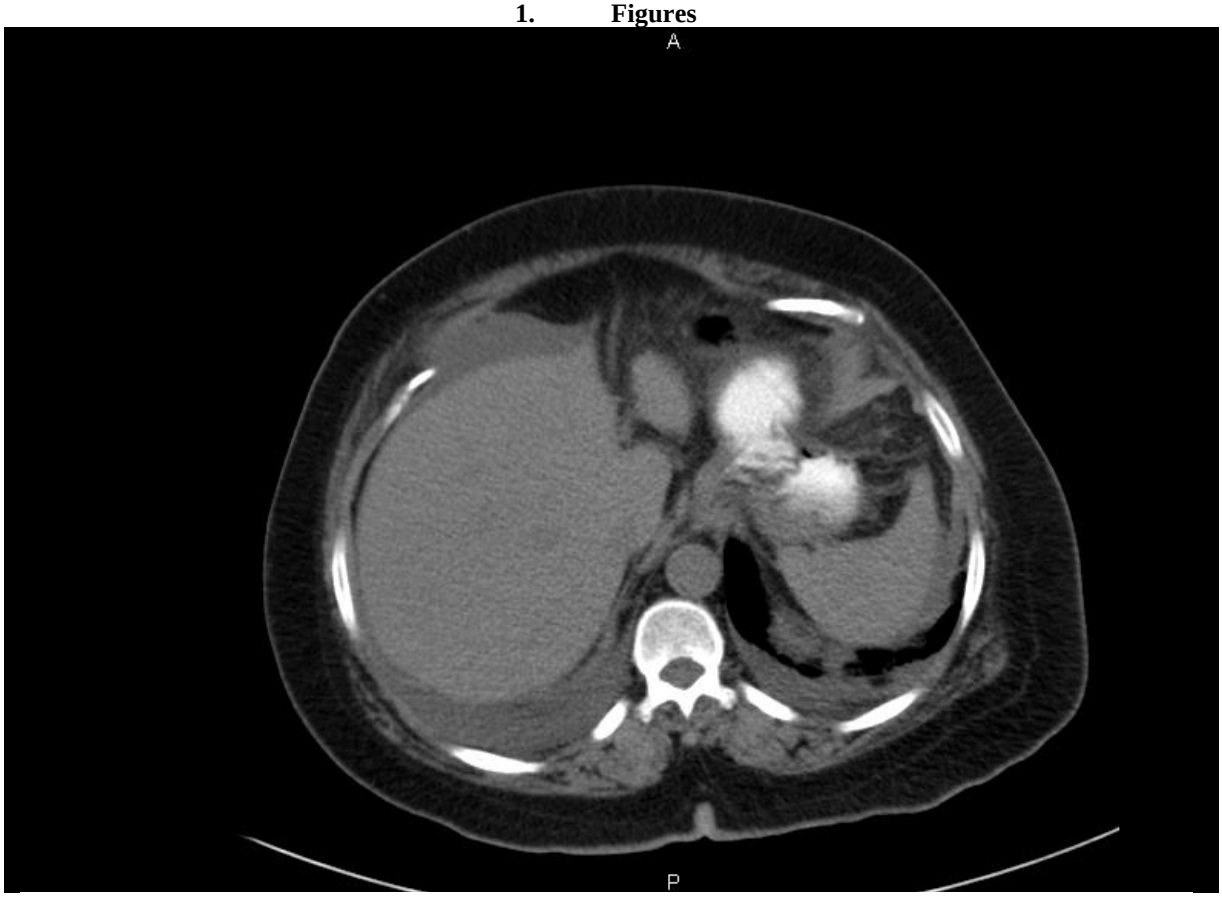

Figure 1: Abdominal and pelvis Computed Tomography [CT] showing mild to moderate ascites with pleural effusion.

CONCLUSION:

Eosinophilic gastroenteritis is a rare disease and it should be kept in mind in patients of unexplained ascites. In such patients with negative workup, especially for parasitic infection and malignancy, EGE should be ruled out. Although peripheral blood or ascitic fluid eosinophilia is suggestive, its absence does not exclude the possibility of this diagnosis. Diagnosis and treatment is imperative to avoid possible complications of the disease such malabsorption and malnutrition. Patients with high index of suspicion of EGE should receive treatment with steroids; rapid response following treatment will indirectly confirm the diagnosis of eosinophilic gastroenteritis and eosinophilic ascites.

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