

Eosinophilic Gastroenterocolitis: A Case Report

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Abstract Background: Eosinophilic gastroenteritis is a rare disease of the gastrointestinal tract that may involve some or all of its layers. It may have a varied presentation and is characterized by eosinophilic infiltration. The diagnosis is typically confirmed by biopsy, which should reveal 20-25 eosinophils per high-power field on microscopic examination. **Case Presentation:** We report a 25 years old man who presented with acute abdominal pain and diarrhea. He was found to have moderate ascites on abdominal US. The investigations revealed peripheral eosinophilia with markedly elevated eosinophils (96%) in the ascitic fluid. The imaging studies showed diffuse concentric bowel wall thickening involving the entire small bowel and Colon. The diagnosis was confirmed by biopsy from the duodenum, terminal ileum and colon. The patient was managed with steroids. **Conclusions:** This case report highlights a rare entity of Eosinophilic gastritis, which is eosinophilic gastroenterocolitis, diagnosis is confirmed via histopathology along with clinical presentation and exclusion of other causes of tissue eosinophilia.

Keywords: Eosinophilic gastroenteritis, biopsy, steroids, case report

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1. Introduction

Eosinophilic gastritis/gastroenteritis (EG/EGE) are inflammatory disorders characterized by eosinophilic infiltration of the stomach and/or duodenum most commonly. In some cases, inflammation of the esophagus, distal intestine, and colon may also be present. This inflammation occurs without any other known cause of tissue eosinophilia.

There are limited data on the prevalence of eosinophilic gastritis/gastroenteritis (EG/EGE) due to the rarity of these disorders. The prevalence of EGE in the United States is estimated to be 22 to 28 per 100,000 persons based on prior survey data [1]. Currently there is no available statistics about this condition done in the middle eastern region or UAE in specific.

2. Case Presentation

A 25-year-old male admitted with generalized abdominal pain, diarrhea, and nausea for 1 week. He reports weight loss, 20 kgs, over 4 months. There is no history of vomiting, gastrointestinal bleeding fever, joint pains, or skin rash. Past medical history was unremarkable, with no history of asthma, allergic rhinitis, atopic dermatitis, food or drug allergy. He denied the use of any medications. No recent history of travel or ethanol consumption. There is

no family history of atopy. Physical examination of the abdomen he had mild generalized tenderness, there was no organomegaly or masses palpable. The rest of his examinations were unremarkable.

Upon hospital admission the complete blood count revealed an elevated white blood cell (WBC) count of 17890/mL (normal 4500-12,400/mL), with marked eosinophilia of 45.3% and an absolute eosinophil count of 8100/ mL (normal 0-1% and <350/mL, respectively). The pattern of eosinophilia during the hospital stay is illustrated [Figure 1]. liver function test showed normal total protein of 66.2 g/l (normal 64-68 g/l) and low albumin 32.6 g/l (normal 35-52 g/L). Stool culture and microscopy for ova and parasites were negative. Fecal occult blood was negative.

Initial differential diagnosis was GE, inflammatory bowel disease (IBD), primary gastrointestinal malignancy, infectious disease, and to rule out vasculitis

Diagnostic abdominal paracentesis was performed, ascitic fluid was dark yellow in color; 300 ml was aspirated with a WBC count of 8093/mL, red blood cell count of 8000/mL, markedly elevated eosinophils (96%). Analysis of ascitic fluid revealed a lactate dehydrogenase level of 177 u/L, protein level of 46 g/L, albumin level of 24 g/L and glucose level of 4.47 mmol/L. Cytological examination of the fluid was negative for malignancy.

Vasculitic screening with P-ANCA and C-ANCA was negative, C4 level was 0.154 g/L (normal 0.174-0.522), C3 of 1.10 g/l (normal 0.90-2.07), ANA was negative, Tumor markers CEA, AFP, and CA 19.9 were also

negative. Hepatitis Screen was negative. He had a Total IgE 1637 IU/mL (normal 0-100) which is supportive with some form of systemic hypersensitivity reaction.

Patient later on underwent further imaging modalities for evaluation, he had a Computerized tomography (CT) imaging of the abdomen with contrast which demonstrated a moderate amount of ascites and diffuse concentric bowel wall thickening involving the entire small bowel and the large bowel. No obstruction was seen and no other abnormalities were found. There was no lymphadenopathy. The heart and lung imaging was normal. [Figure 2]

An OGD was performed, which showed diffuse

gastritis with no erosions or ulcerations. The biopsy revealed diffuse infiltration of eosinophils more than 20/high power in the duodenum and gastric mucosa [Figure 3 a,b], biopsy from the esophagus showed mild infiltration of about 10/high power field.

With such findings in the OGD it was warranted to do a lower GI endoscopy to evaluate for the presence of any further lesions. The Colonoscopy showed mild edema and blurring of the mucosal pattern. A biopsy of the colonic mucosa (right and left colon) showed diffuse eosinophilic infiltrate suggestive of acute eosinophilic colitis [Figure 4] and large infiltration within the terminal ileum.

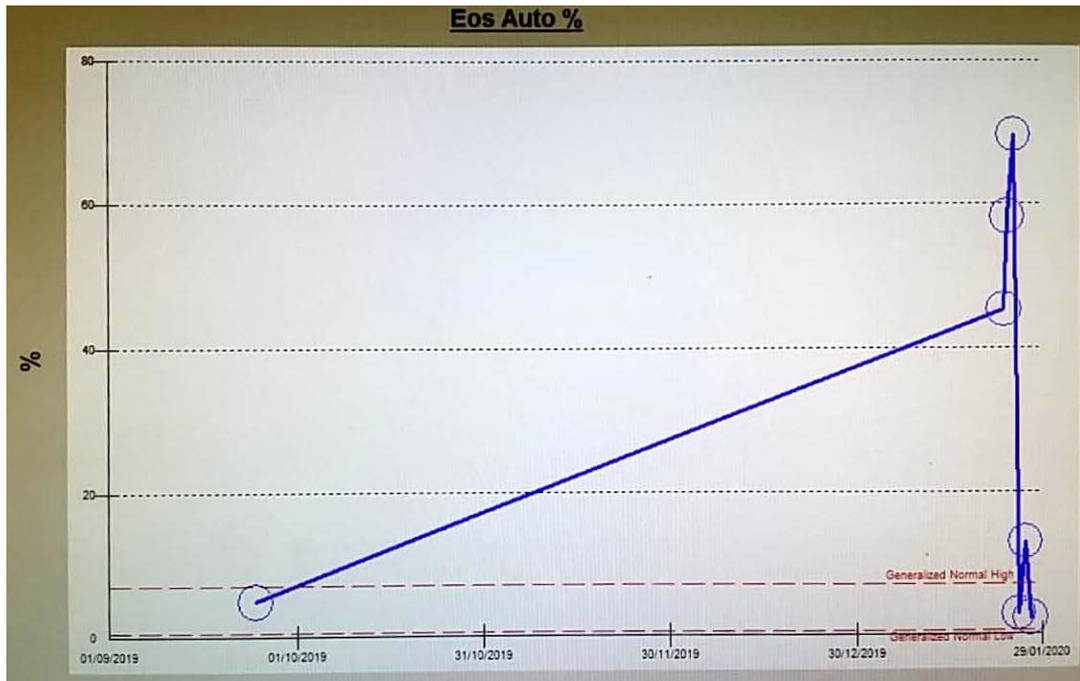


Figure 1. Showing trend in eosinophil % during patients hospital course and after initiation of steroids

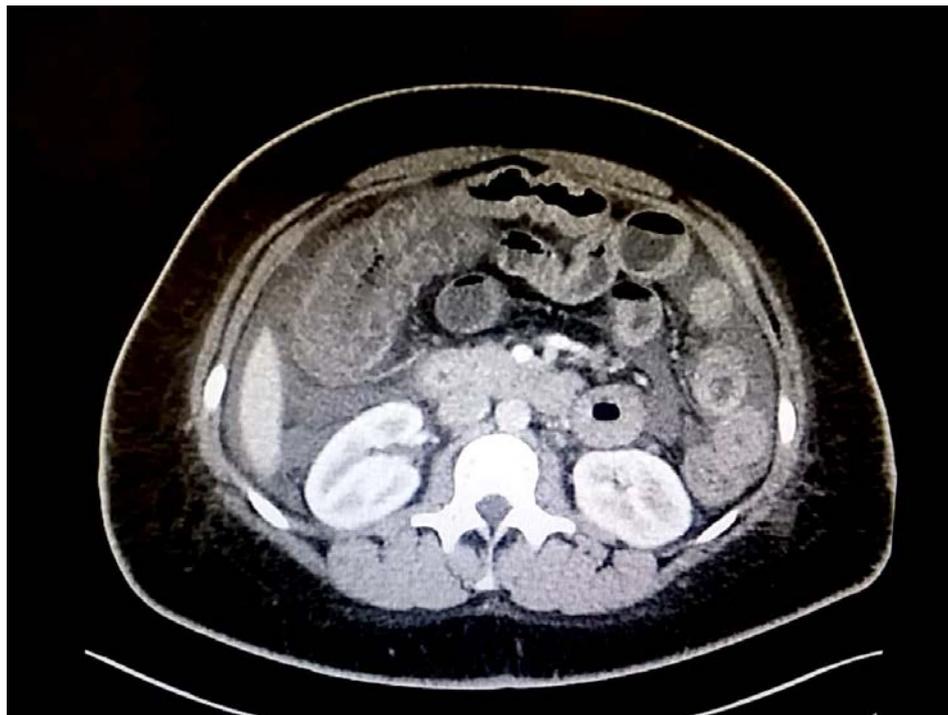


Figure 2. Computerized tomography (CT) imaging of the abdomen with contrast showing a moderate amount of ascites and diffuse concentric bowel wall thickening involving the entire small bowel and the large bowel

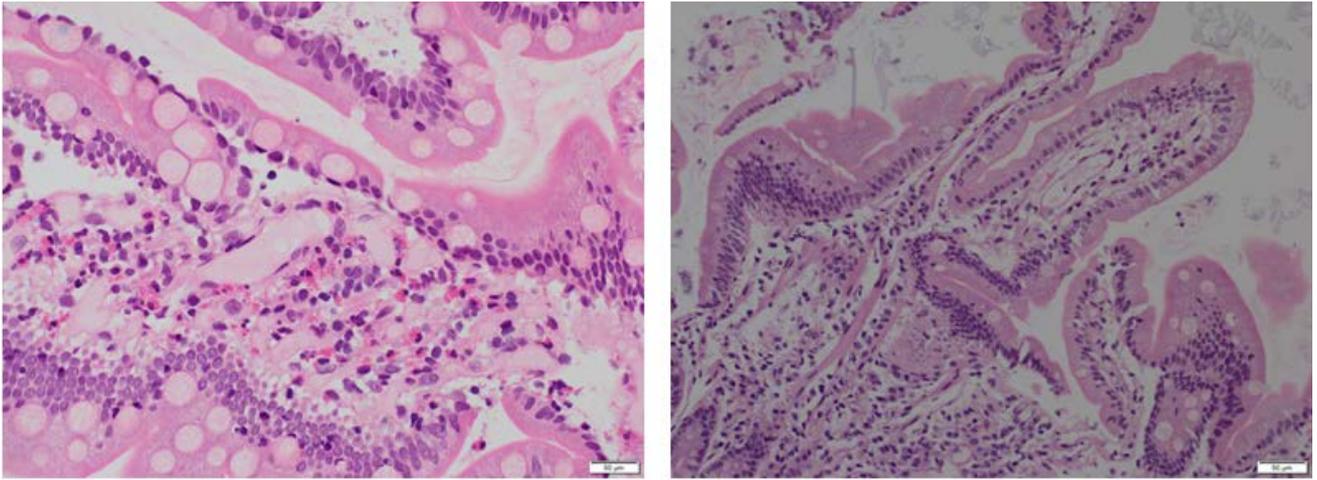


Figure 3 a. To the left side Photomicrograph of duodenal mucosa biopsy showing diffuse infiltration of eosinophils more than 20/high power field prior to initiation of steroids, on the right side photomicrograph of duodenal mucosa after one month of treatment of steroid , there is no eosinophilic infiltrate

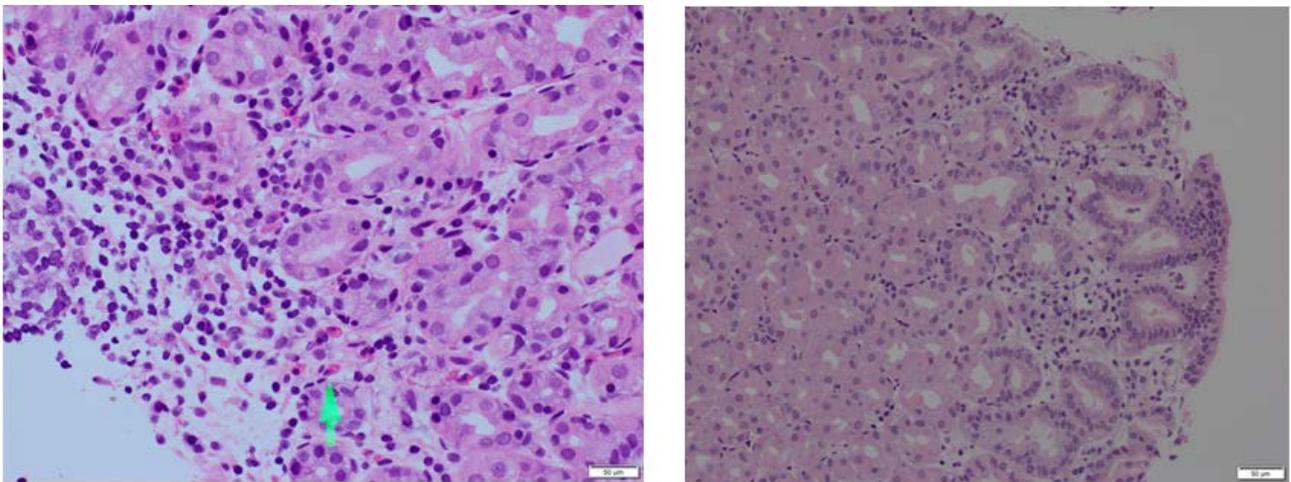


Figure 3 b. To the left side Photomicrograph of gastric mucosa biopsy showing diffuse infiltration of eosinophils more than 20/high power field prior to initiation of steroids, on the right side photomicrograph of gastric mucosa after one month of treatment of steroid , there is no eosinophilic infiltrate

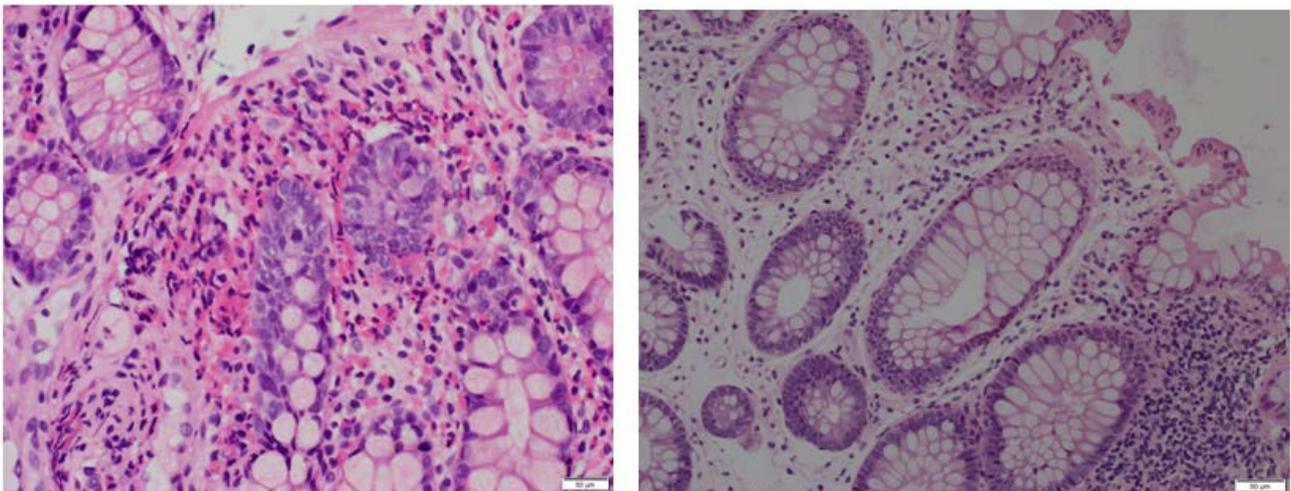


Figure 4. To the left side Photomicrograph of Colonic mucosa biopsy showing diffuse infiltration of eosinophils more than 20/high power field prior to initiation of steroids, on the right side photomicrograph of Colonic mucosa after one month of treatment of steroid , there is no eosinophilic infiltrate

In conclusion those findings were suggestive of eosinophilic gastroenterocolitis.

The patient showed dramatic improvement with steroids once the diagnosis was established and treatment was initiated, his absolute eosinophil count dropped from 14,230 to 230 within the first day of

treatment. His symptoms improved, WBC count was back to normal within 2 days and the ascites completely resolved.

Upon follow up in one month, patient was doing well and his symptoms had completely resolved, he was discharged on tapering dose of steroids.

A follow up OGD and sigmoidoscopy showed improvement in his gastritis and Biopsy revealed a regression in the eosinophilic infiltrate which indicates dramatic response to treatment.

US showed resolution of the ascities.

3. Discussion

The diagnosis of eosinophilic gastroenteritis requires the presence of three main features that include gastrointestinal symptoms, eosinophilic infiltration of one or more areas of the gastrointestinal tract on histology, and the exclusion of other causes of tissue eosinophilia, such as intestinal tuberculosis, parasitosis, and malignancy. [2]

Our patient presented with symptoms of abdominal pain, nausea, and diarrhea mimicking acute gastroenteritis, the presence of ascites in an apparently healthy young man within the setting of this acute history was unusual. The endoscopic biopsies from the stomach, duodenum, and colon showed diffuse infiltration of eosinophils. The CT scan revealed diffuse concentric bowel wall thickening involving the entire small bowel and the colon, which makes it a rare entity. The ascetic fluid showed markedly elevated eosinophils suggestive of EG. Infectious, malignant and autoimmune diseases were excluded as discussed earlier.

Treatment with steroids is the mainstay in the management of EG, which will usually lead to dramatic clinical improvement. The duration of treatment is controversial. [3]

In addition, diet modification such as elimination of certain food items plays a role also known as the 6-food elimination diet, such items are milk, soy, eggs, wheat, nuts, seafood, and rice. Its role regressing the eosinophilia remains unclear, but its thought that food allergens are considered to be a triggering and aggravating factor for delayed Th2-type allergic reaction in the GI tract of affected patients hence by eliminating such food allergens there will be a lower chance of such allergic reactions. [4]

More over, this case highlights a rare entity in the spectrum of eosinophilic gastrointestinal disorders, one where almost the whole of the GI tract was affected, ranging from mild infiltration of the esophagus to large infiltration of the gastric, duodenal, ileum and colonic mucosa. Hence the diagnosis of eosinophilic gastroenterocolitis was established, most case studies done were reporting eosinophilic gastritis or gastroenteritis which spares the colon, this fact possibly makes it the first case to be reported in the United Arab Emirates, currently there isn't much statistics addressing this topic in the region.

4. Conclusions

This case report highlights a rare entity of Eosinophilic gastritis, which is eosinophilic gastroenterocolitis, diagnosis is confirmed via histopathology along with clinical presentation and exclusion of other causes of tissue eosinophilia.

List of Abbreviations

EG-Eosinophilic Gastritis
 EGE- Eosinophilic gastroenteritis
 P-ANCA- Perinuclear anti-neutrophil cytoplasmic antibodies
 C-ANCA- Cytoplasmic antineutrophil cytoplasmic antibodies
 OGD- Oesophago-gastroduodenoscopy

Availability of Data and Materials

All data are within the article.

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Authors Contribution

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Ethics Approval and Consent to Participate

Not applicable.

Consent for Publication

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing Interests

The authors declare that they have no competing interests.

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