Case Report

Eosinophilic Gastroenteritis Presenting as Small Bowel Obstruction

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Abstract

Eosinophilic gastroenteritis is a rare disease of unknown etiology characterized by eosinophilic infiltration of bowel wall to a variable depth. A 38 year old female presented with loose stool and vomiting since 3 days. She gave history of pain abdomen and weight loss since six months. Barium study revealed ascending colon stricture just proximal to the hepatic flexure ? malignant. A colonic biopsy was done, which was reported as edematous colonic mucosa with mild increase in eosinophils. Intra-operatively, a dense long segment stricture was found in the ascending colon extending to the caecum which warranted a right hemicolectomy. Histopathology revealed dense infiltration of eosinophils in the entire thickness of ileal and caecal wall. The diagnosis of eosinophilic gastroenteritis was made. Patient responded well to steroids. The case is being reported to highlight its rarity due to caecal involvement, presentation as intestinal obstruction and missed diagnosis on endoscopic biopsy.

Keywords

eosinophilic gastroenteritis, intestinal obstruction, stricture

Introduction

Eosinophilic gastroenteritis is an uncommon inflammatory disease characterised by eosinophilic infiltrate of the gastrointestinal tract[1]. Clinical manifestations range from non-specific gastrointestinal complaints to more specific symptoms such as protein-losing enteropathy, malabsorption, luminal obstruction and eosinophilic ascites[2]. Kaijser first described the entity in 1937[3]. The disease can be idiopathic or allergic in etiology. The pathogenesis of this condition is still not well understood[4]. Diagnostic criteria include demonstration of eosinophilic infiltrate in the bowel wall, lack of evidence of extraintestinal disease and exclusion of various disorders that mimic a similar condition[5]. Diffuse Gastrointestinal tract and colonic involvement are uncommon. Gastrointestinal obstruction is unusual and is associated with the variant of muscular type[6]. The case is being reported to highlight its rarity due to caecal involvement, presentation as intestinal obstruction and missed diagnosis on endoscopic biopsy.

Case Report

A 38- year- old female presented with pain in abdomen since 6 months. She gave a history of vomiting and loose stools of 3 days duration. She also complained of significant weight loss. She had a past history of diagnosed abdominal tuberculosis for which she had not taken complete treatment. Clinical examination was unremarkable except for vague upper abdominal tenderness. A complete blood count revealed WBC count of 6400/ mm^3 with an differential eosinophil count of 4%. Stool examination was

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negative for ova, parasites and common pathogens. Barium study revealed ascending colon stricture just proximal to the hepatic flexure. ? malignant. Ultrasound of the abdomen showed few enlarged mesenteric lymph nodes in the right iliac fossa. Colonoscopy revealed a stricture in the ascending colon. A colonic biopsy was reported as edematous colonic mucosa with mild increase in eosinophils. There was no evidence of granuloma or malignancy. Intra –operatively, a dense long segment stricture was found in the ascending colon extending to the caecum which warranted a right hemicolectomy. The specimen was sent for histopathology.

Gross examination showed a right hemicolectomy specimen measuring 40 cms in length, including ileum 22 cms, caecum 7 cms and ascending colon 11 cms. An appendix was noted measuring 7 cms in length. The external surface appeared congested and a hard area was felt in the caecum, 24 cm from the proximal end. On opening the caecum in relation to this hard area, a firm constriction measuring 1 cm was noted situated 2 cms away from the ileoceacal junction (**Fig. 1**). The adjacent mucosa was congested. Eleven lymph nodes were identified, the largest measured 1 cm in diameter. Multiple sections were taken from firm constricted area, surgical margins, appendix and the lymph nodes.

On histopathology, sections from the stricture showed ulceration of the mucosa covered by granulation tissue and a dense mixed inflammatory infiltrate predominantly of eosinophils (**Fig. 2a**). The submucosa was markedly

Fig. 1
Gross specimen of ileocaecal junction showing a firm constriction (arrow)

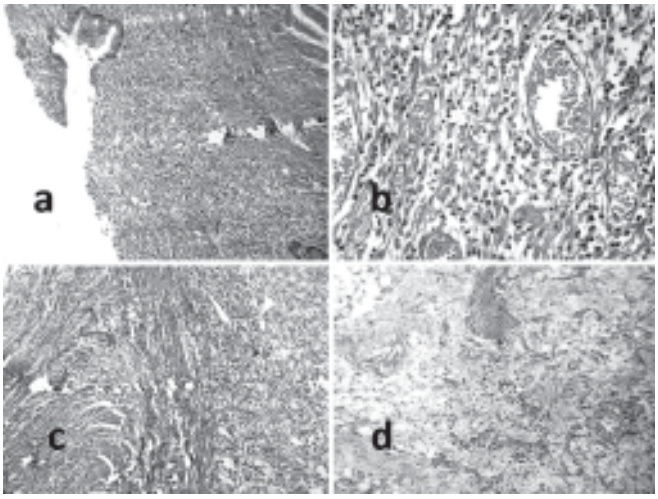

Fig. 2
Photomicrographs showing (a) Ulceration of the mucosa and a dense mixed inflammatory infiltrate predominantly of eosinophils (H and E, 100x). (b) Edematous submucosa with eosinophils (H and E, 400x). (c) Transmural eosinophilic infiltrate with mild fibrosis (H and E, 100x). (d) Eosinophilic infiltrate in the serosa. (H and E, 100x)

edematous and showed dense inflammatory infiltrate predominantly of eosinophils, mixed with plasma cells, lymphocytes and neutrophils (**Fig. 2b**). A transmural eosinophilic infiltrate with mild fibrosis were noted (**Fig. 2c**). The serosa showed eosinophilic infiltrate (**Fig. 2d**). The appendix revealed evidence of eosinophilic appendicitis. All the lymphnodes revealed reactive lymphoid hyperplasia. There was no evidence of granuloma or malignancy in the multiple sections examined. A final histopathological diagnosis of eosinophilic gastroenteritis was made.

The patient was started on steroid treatment which was gradually tapered off. The patient has been asymptomatic till date with a follow-up of two years.

Discussion

Primary eosinophilic gastroenteritis is defined as a disorder that primarily affects the gastrointestinal tract with eosinophil rich inflammation in the absence of known causes for eosinophilia. This includes drug reaction, parasitic infections and malignancy[7]. All age groups are affected, but 75% of patients are under the age of 50 years. About 25 to 50 % of patients have a medical history of allergy, particularly asthma, and 75% have peripheral blood

eosinophilia. The peripheral eosinophilic count may be normal in patients with eosinophilic gastroenteritis, suggesting that this is not a reliable criteria for diagnosis[3]. Erythrocyte sedimentation rate may also be abnormal.

The stomach is the most frequently involved organ, followed by small bowel. The small bowel involvement may present with abdominal pain, diarrhoea, frank malabsorption and rarely bowel obstruction. Colonic involvement is less frequent and presents as abdominal pain and diarrhoea[6]. Klein classified the disease according to the predominance of eosinophilic infiltration in different layers of the intestinal wall. Involvement of different layers of the intestinal wall usually gives rise to different clinical manifestations. The mucosal form of eosinophilic gastroenteritis is characterised by vomiting, abdominal pain, diarrhoea, blood loss in stool, iron deficiency anaemia, malabsorption and protein losing enteropathy. The muscularis form is characterised by infiltration of the eosinophils predominantly in the muscle layer, leading to thickening of the bowel wall, producing obstructive symptoms. The present case was of this type which showed eosinophilic infiltrate in all the three layers of the intestinal wall causing thickening of the muscle layer and narrowing of the lumina producing obstructive symptoms. The serosal form occurs in a minority of the patients and is characterised by exudative ascites with higher peripheral eosinophil counts compared with the other forms[4]. The mucosal and muscle layer disease may cause symptoms that could be confused with functional bowel disease, hence eosinophilic gastrointestinal disease should be suspected in the presence of unexplained chronic or relapsing gastrointestinal symptoms[3].

The pathogenesis of eosinophilic gastroenteritis is not known. Accumulation of eosinophil causes destruction of the intestinal epithelium by release of eosinophilic major basic protein, eotaxin and interleukin-5. A report on familial eosinophilic gastroenteritis in two siblings with mucosal layer disease had activated degranulating eosinophils which correlated with the history of histological damage[8].

Steroids remain the mainstay of therapy for eosinophilic gastroenteritis with good symptomatic responses[3]. Surgery is required only in case of obstruction. Our patient was operated due to obstruction and was later treated with steroids.

Conclusion

The case is presented to highlight the fact that eosinophilic gastroenteritis should be kept in mind while treating the case of generalised abdominal pain, vomiting and diarrhoea so that early steroid therapy can be given for a better outcome.

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