International Surgery Journal
Pakanati R et al. Int Surg J. 2025 May;12(5):832-834
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902
DOI: https://dx.doi.org/10.18203/2349-2902.isj20251187

Case Report

Eosinophilic colitis necessitating surgery: a rare case report

Rajababu Pakanati*, S. Uday Kiran, Y. Srikanth, Minhaaz, V. Sravya, K. Hema Sundar

Department of General Surgery, DR. PSIMS and RF, Chinnaoutapalli, Gannavaram, Andhra Pradesh, India

Received: 31 January 2025
Revised: 05 March 2025
Accepted: 19 March 2025

***Correspondence:**
Dr. Rajababu Pakanati,
E-mail: prajababu508@gmail.com

ABSTRACT

Eosinophilic colitis (EC) is a rare heterogenous inflammatory disorder with a wide range of symptoms that can mimic a variety of pathologies. We report a rare case of EC presenting as recurrent intestinal obstruction. A 45-year gentleman presented with recurrent episodes of colicky abdominal pain whose blood investigations revealed eosinophilia and high absolute eosinophilic count. Abdominal radiograph and USG abdomen and pelvis were suggestive of intestinal obstruction. Computerised tomography and colonoscopy revealed ascending colon stricture, and colonoscopy-guided biopsy suggested chronic nonspecific colitis. Laparotomy revealed an obstructive lesion of the ascending colon with no regional lymphadenopathy. A right radical hemicolectomy was performed, and the histopathological examination revealed EC. The patient had an uneventful postoperative recovery and was started on medical therapy with albendazole, levocetirizine, montelukast and diethylcarbamazine. The patient has been on regular follow-up and is doing well.

Keywords: Eosinophilic colitis, Eosinophilic gastrointestinal disorders, Intestinal obstruction, Right radical hemicolectomy

INTRODUCTION

Eosinophilic colitis (EC) is one of the variants of the broader entity of eosinophilic gastrointestinal disorders (EGD). It is an uncommon condition that is characterized by variable degrees of infiltration by eosinophils. EC is a rare entity with only a limited number of cases reported in world literature. The estimated prevalences of EC is 3.3/100,000.[1] The pathogenesis and etiology of the condition remain unclear and is believed to be Ig-A mediated.

Due to the absence of a defined histological criteria for specific eosinophil count in colonic mucosa, diagnosis of this entity remains challenging and unclear. Therapeutic approaches rely on case reports and case series.[3]

The mainstay of treatment is medical management, however in a few selected cases surgery is warranted in accordance with the specific situation.[2]

CASE REPORT

A 45-year-old gentleman presented to the emergency department with a history of diffuse abdominal pain and vomiting for 1 day. Abdominal pain was insidious in onset, gradually progressive, moderate in intensity, colicky, non-radiating associated with nausea, and 3 episodes of bilious, non-projectile, non-blood-stained vomiting. The patient had a similar history two weeks back, for which he was managed conservatively. He had no history of diabetes mellitus, hypertension, cardiovascular diseases, cerebrovascular diseases, drug allergies, asthma, or allergic rhinitis. Physical examination revealed normal vitals and distended abdomen with tenderness in the right hypochondrium and right iliac fossa, with exaggerated bowel sounds. Routine laboratory investigations revealed eosinophilia and high absolute eosinophilic count. Abdominal radiograph revealed multiple air-fluid levels in the small intestine and USG abdomen and pelvis were suggestive of sub-acute intestinal obstruction.

Computerised tomography demonstrated a short-segment concentric bowel wall thickening with persistent luminal narrowing in the ascending colon with pericolic infiltration and small bowel faecal sign suggestive of colonic obstruction with possibilities of infective or neoplastic pathology.

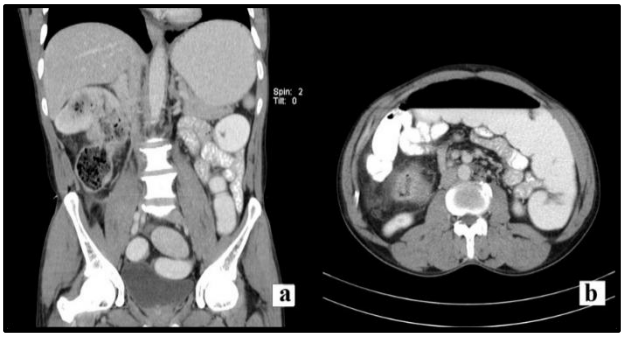

Figure 1: Pre-operative CECT pictures (a) coronal section (b) axial section showing short segment concentric ascending colon thickening with luminal narrowing and pericolic infiltration.

Colonoscopy revealed ascending colon stricture with ulceration causing obstruction, and the biopsy was suggestive of chronic nonspecific colitis. It was hence planned for a definitive procedure to relieve the patient of obstruction and to have a final pathological diagnosis.

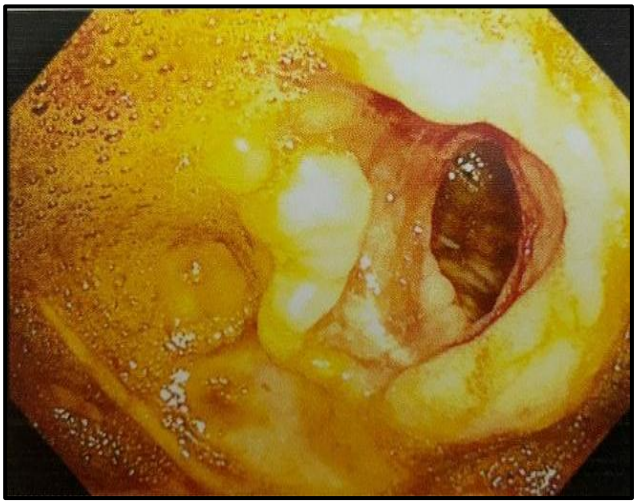

Figure 2: Colonoscopic picture showing ascending colon stricture with ulceration.

Laparotomy revealed an obstructive lesion of the proximal ascending colon with no regional lymphadenopathy. A right radical hemicolectomy was done as the colonoscopic biopsy was not definitive, and reconstruction was achieved with ileo-colic anastomosis and the patient had an uneventful postoperative recovery.

The histopathology of the ascending colon revealed mucosal ulceration with inflammatory cell collections extending upto the serosa suggestive of EC. The patient was initiated on medical therapy with albendazole, levocetirizine, montelukast, and diethylcarbamazine. The patient is on regular follow-up for 6 months following the surgery and is doing well.

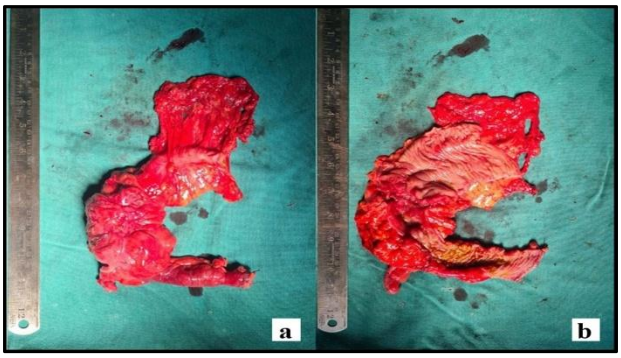

Figure 3: Resected specimen (a) Serosal surface and (b) mucosal surface.

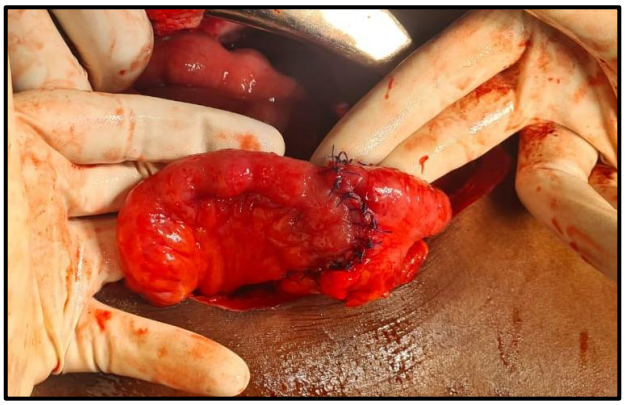

Figure 4: Intraoperative picture showing ileo-colic anastomosis following right radical hemicolectomy.

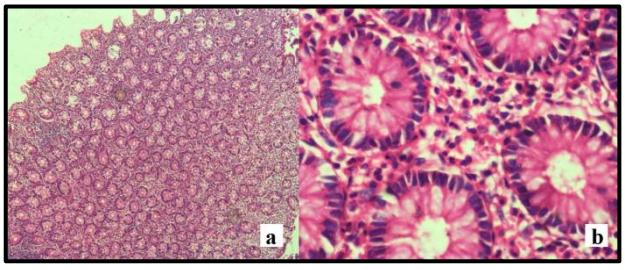

Figure 5: HPE pictures of (a) low power field and (b) high power field, showing lymphocyte and eosinophilic aggregates in colonic mucosa and submucosa.

DISCUSSION

EGD encompass a range of clinical conditions characterised by varying degrees of eosinophil infiltration of the gastrointestinal tract, in the absence of other established causes of tissue eosinophilia. Precise incidence is unknown, due its rarity. Estimated incidence is about 1-

30/100,000 population. It includes eosinophilic esophagitis (EE), gastroenteritis (EGE), and EC.[4]

Involvement of different layers of gastrointestinal wall in EGD presents with variable symptoms: a) Mucosal form-abdominal pain, vomiting, diarrhoea, blood in stools and protein losing enteropathy, b) Muscular form- Thickening of the intestinal wall causing obstructive symptoms and c) Serosal form-high eosinophilic count with exudative ascites.[5]

Clinical symptoms and laboratory findings are usually non-specific and may or may not be accompanied by peripheral blood eosinophilia. Therefore, diagnosis requires demonstration of gastrointestinal eosinophilia by biopsy and exclusion of other known causes of tissue eosinophilia. Numerous studies have identified eosinophils as the primary culprit, yet it is still unknown what precise functional role the eosinophil plays in the aetiology of eosinophilic intestinal disorders. The involvement of mediators like eotaxin-1 and interleukin-5, as well as T-helper-2 cytokines, have become increasingly important in the pathogenesis of eosinophilic gastrointestinal diseases.[4] Multiple factors, such as allergens, bacterial, parasitic, and TNF infections, can activate eosinophils. These cells are regulated by a range of cytokines, including IL-5, IL-13, IL-4, and TNF, which are mostly produced by activated Th2 T lymphocytes and mast cells.15, 16. Activated eosinophils influence the immune system by stimulating dendritic cells, causing immunoglobulin (Ig) A-class switching in B cells, and encouraging their survival.

Since EC is a rare disease, there is no strong evidence for available treatments. The current understanding of treatment is based on case reports and a few case series, as there is a lack of large prospective studies. Albendazole and Diethylcarbamazine were found effective in eosinophilia.[6,7] Corticosteroid therapy represents the main therapy for EGE and is effective in 80% of patients; however, research is also being done on the potential roles of other medications, including anti-immunoglobulin E, leukotriene inhibitors, mast cell stabilisers, and interleukin-5 inhibitors.[4,8,9] Surgical intervention may be necessary if there is an obstruction/perforation or if a definitive diagnosis cannot be made.[10] It is customised according to the mode of presentation, general condition, the site and extent of disease and the preoperative histological diagnosis of the disease. Long-term follow-up is necessary since the natural history of eosinophilic gastroenteritis has not been thoroughly described.

CONCLUSION

EC is a rare chronic pathology of the digestive system with an immuno-mediated pathogenesis. Dietetic and pharmacological approach is the mainstay of management and surgery is reserved for specific situations like, obstruction, perforation or when the diagnosis is in doubt. In our case of muscular form of EC, surgery was warranted as the patient had recurrent colonic obstruction and the diagnosis was doubtful. A right radical hemicolectomy was performed as there was no specific preoperative histological diagnosis, and a malignant pathology was not ruled out.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Pakanati R, Kiran SU, Srikanth Y, Minhaaz, Sravya V, Sundar KH. Eosinophilic colitis necessitating surgery: a rare case report. Int Surg J 2025;12:832-4.