

# Eosinophilic Colitis Presenting with Haemorrhagic Diarrhea

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**Abstract** Eosinophilic colitis is a rare condition and very uncommonly it presents with acute surgical emergency such as haemorrhage and peritonitis. We describe a rare presentation of eosinophilic colitis with severe haemorrhage and abdominal pain with ischemic bowel.

**Keywords:** eosinophilic gastrointestinal disorders, eosinophilic colitis, haemorrhagic diarrhoea

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## 1. Introduction

Eosinophilic gastrointestinal disorders or eosinophilic digestive disorders (EGIDs) include a spectrum of rare gastrointestinal disorders that includes eosinophilic esophagitis, eosinophilic gastroenteritis and eosinophilic colitis [1]. Eosinophilic colitis (EC) is a rare clinical entity [2]. The clinical presentation is usually nonspecific. Severe cases may develop severe abdominal pain and distension, malabsorption, intestinal obstruction, an even gastrointestinal haemorrhage [3]. Due to the nonspecific nature of the symptoms and rarity of the condition, it is commonly diagnosed only late in presentation. We describe a 28-year old man with eosinophilic colitis presenting as haemorrhagic colitis requiring total colectomy.

## 2. Case Presentation

A 28 year old man presented to the hospital with complaints of a 10 day history of severe abdominal pain specially localised on right down side of abdomen and haemorrhagic diarrhea. During examination his heart rate

was 104 beats per minute, blood pressure 110/70 mmHg and temperature was 37,2°C. He was oriented to person, place and time. Cardiovascular, respiratory, musculoskeletal and neurological examination were normal. Abdominal examination revealed generalized tenderness and rebound sign on the right down side of abdomen. His white blood cell count was 18.500/ $\mu$ l, eosinophil count was 3700/ $\mu$ l (%19.8). His platelet count decreased to 79000/ $\mu$ l and CRP also increased to 92 mg/dl. An urgent ultrasonography of abdomen was ordered which showed terminal ileitis' signs. On the second day of his admission, he developed increasing abdominal pain and distension. A computed tomogram (CT) of the abdomen was planned, and CT showed a small amount of ascites and a long segment of circumferential mural thickening of descending colon, sigmoid colon and rectum. Patient was consulted with the department of general surgery and he was taken to an emergency operation. Intraoperatively, there was severe haemorrhagic colitis and infarction involving nearly total colon. Total colectomy and ileostomy were performed. On total colectomy material ; 93 cm colon, 5 cm ileum and 5 cm appendix was seen that haemorrhagic and fibrinoid view, and especially on sigmoid colon, bowel wall was thickened and haemorrhagic, other side of bowel was with edema, hyperemic and haemorrhagic (Figure 1).

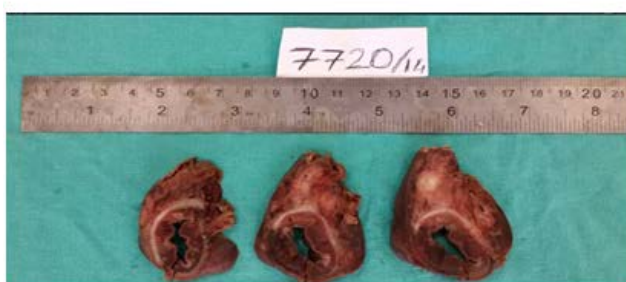
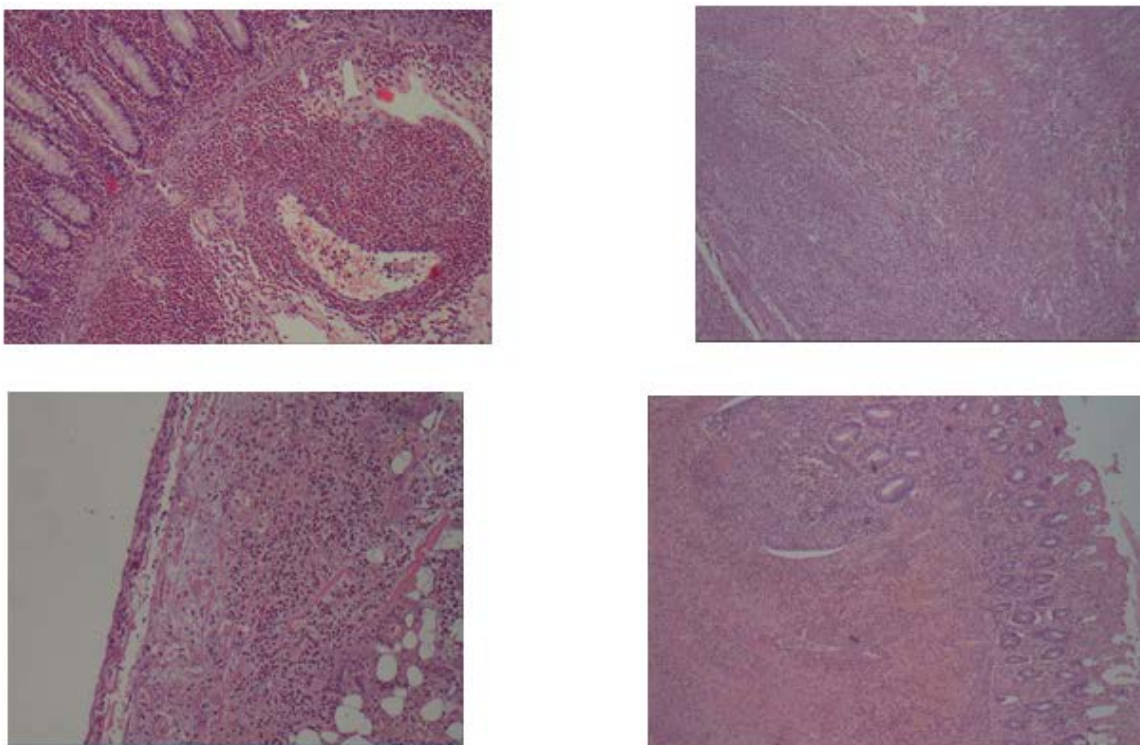


Figure 1. Colectomy material

Histology revealed ischemic-haemorrhagic bowel with eosinophilic pancolitis and eosinophilic vasculitis with

transmural haemorrhagic infarction and eosinophilic microabscesses (Figure 2).



**Figure 2.** Eosinophilic colitis histology

### 3. Discussion

Eosinophilic gastrointestinal disorders (EGID) are one of rare causes of chronic diarrhea. The disorders are characterized by inflammation rich in eosinophilic infiltration in the gastrointestinal (GI) tract without evidence of known causes for eosinophilia such as parasitic infection, drug reaction, or malignancy [1,4,5]. It was originally described by Kaijser [6] in 1937; since then, hundreds of cases have been described from all over the world including North America, Europe, Australia and Asia [7]. EGID can involve one or multiple segments of the GI tract from the esophagus to the rectum (mainly in the antrum of the stomach and small intestine) [6] and can also occupy various sites through the depth of the wall. Such inconsistency from case to case promotes unpredictable symptoms from pain to dysmotility, bleeding, obstruction, or ascites [8]. In 1990, Talley et al. [9] defined EGID by three criterias: 1) the presence of gastrointestinal symptoms, 2) biopsies showing eosinophilic infiltration of one or more areas of the gastrointestinal tract from the esophagus to the colon, or characteristic radiological findings with peripheral eosinophilia, and 3) no evidence of parasitic or extraintestinal disease. Presently, this concept is most commonly used in defining EGID. In published reports, stomach (%26-%81) and small intestine (%28-%100) are the predominantly affected sites but esophagus, large intestine, and rectum may be affected as well [7].

Significant progress has been made in elucidating that eosinophils are integral members of the gastrointestinal mucosal immune system and that eosinophilic gastrointestinal disorders are primarily polygenic allergic disorders that

involve mechanisms that fall between pure IgE-mediated and delayed T(H)2-type responses. EGID affect all ages, from infancy through adulthood, peaking during the second and sixth decades of life [10]. Contrary to other subtypes, eosinophilic colitis has a bimodal age distribution, usually affecting infants (mean age, 60 days) and adolescents [11]. Although there are some differences among the reports, the incidence is higher in males, with a ratio of 3:2 [10].

The etiology of EGID remains largely unknown. Several studies have suggested a relationship with specific food allergies, and approximately 70% of patients may have a personal or family history of allergic disorders such as asthma, fever, hypersensitivity to drugs, or eczema [10]. In contrast to other EGID, eosinophilic colitis is usually a non-IgE-associated disease. Thus, skin prick test or antigen-specific IgE (RAST) is negative [12]. Some studies point to a T cell-mediated process, but the exact immunologic mechanisms for this have not been identified [13]. Similarly our case have normal total IgE and lacked immunologic evidence for allergy. Causes of EC may be divided into 2 main groups, that is, those with primary and secondary causes. Primary eosinophilic colitis is the rarest manifestation of EGID, the other more common presentations being eosinophilic esophagitis and eosinophilic gastroenteritis [14]. The disease mainly affects the pediatric population, although it has been reported in the adult population as well. The hallmarks of EC are peripheral eosinophilia, segmental eosinophilic colonic infiltration, and functional abnormalities [13]. Secondary causes of EC include parasitic infection, inflammatory bowel disease, carcinoma, connective tissue disease, drug-related causes such as Rifampicin, Clozapine, and Carbamazepine, and vasculitic causes. Clinical presentation of the primary EC depends on the

layer of intestinal wall that is infiltrated by eosinophils and correlates well with the physical symptoms and clinical findings. Mucosal predominant disease presents with diarrhea, protein wasting, and malabsorption [15]. Transmural disease is associated with thickened bowel, obstruction, perforation, volvulus, intussusception [16], and perforation [17]. Serosal involvement is characterized by presence of eosinophilic ascites [18]. The diagnosis of EC is made via the presence of symptoms, peripheral eosinophilia, endoscopic or histological findings, and eosinophilic ascites, with exclusion of all other causes of secondary eosinophilia. Histological findings show eosinophilic infiltrates throughout the lamina propria, with extension through the muscularis mucosa into the submucosa. Crypt abscesses and lymphonodular hyperplasia may also be evident [19].

Treatment of EGID can be divided into dietary modifications and pharmacotherapy. Food allergy testings and elimination and elemental diets should be considered and often are performed before a trial of corticosteroids. Corticosteroids are the mainstay of therapy and most patients have symptomatic response [1,16,20]. Treatment of EC has not been well established because of the low numbers of reported cases. In neonates, there has been some beneficial effect of withdrawing specific food triggers for cases with food allergies; however, in adults, the response of dietary modification is less clearer. In patients who present with abdominal symptoms, firstly, indications for surgical exploration must be ruled out, such as free intraabdominal air, volvulus, obstruction, or peritonitis. In all other patients with no such indications, corticosteroids have been found to be effective for symptom control in EC [21]. The majority of cases respond within 2 weeks of treatment; however, relapse is frequent and may require recurrent courses which may lead to steroid dependence. Budesonide has been shown to be effective in cases of EC, particularly in the right colon [21].

Eosinophilic colitis is seen very rarely. It may present acutely and may lead to surgical exploration because of the severe and fatal complications like haemorrhage and perforation. Early diagnosis and appropriate treatment is very important in such patients.

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