CASE REPORT

Obstructive eosinophilic gastroenteritis in a patient with rheumatoid arthritis

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SUMMARY

Eosinophilic gastroenteritis (EG) is a rare disease characterised by abnormal eosinophilic infiltration of the gastrointestinal tract. We describe a case of EG presenting as an intestinal obstruction in a patient with rheumatoid arthritis (RA). A 54-year-old man with RA presented to the emergency department with abdominal pain and vomiting. On examination, his abdomen was distended and tender. Laboratory data showed leucocytosis with raised inflammatory markers and without eosinophilia. CT revealed dilated small bowel loops, with a couple of loops forming a mass and abscess formation. Emergency laparotomy was performed with segmental resection of the ileum and side-to-side anastomosis. Histology confirmed the diagnosis of EG. The patient recovered well and was asymptomatic at the time of writing this report.

BACKGROUND

Eosinophilic gastroenteritis (EG) is a rare disease affecting the gastrointestinal (GI) tract. It has a wide range of clinical manifestations depending on the site and the specific layers of the GI tract involved.¹ We report a case of a patient with rheumatoid arthritis (RA) who underwent emergency laparotomy for acute intestinal obstruction due to EG of the ileum. We decided to report this case because of its rare occurrence and presentation. We also report the rare coexistence of RA and EG to highlight a possible link between the two conditions.

CASE PRESENTATION

A 54-year-old man with RA presented to the emergency department with a 5-day history of generalised abdominal pain, nausea and vomiting, which had worsened during the previous 2 days. He denied any change in bowel habits or recent weight loss. On examination, his abdomen was distended and rigid with tenderness in the lower abdomen. The hernia orifices were intact. His RA was clinically inactive with no swollen or tender joints.

His medical history indicated that his RA had been treated with 20 mg of methotrexate weekly for the last 2 years. He was also hypertensive. His surgical history included only an appendectomy. He had no personal or family history of food allergy or other allergic reactions. He was a non-smoker and non-drinker.

INVESTIGATIONS

A full blood count revealed a white cell count of $19\,300/\text{mm}^3$ with normal eosinophilic count. The C reactive protein level was 89 mg/L. Other bloods were within normal limits.

An X-ray of the patient's abdomen showed dilated small bowel loops. CT revealed dilation of a number of loops of small bowel and an inflammatory process within the ileum. A couple of loops of bowel were gathered together. There was also a diverticulum lying inferiorly. Anterior to this there was a small abscess measuring 29×25 mm just behind the anterior abdominal wall. The terminal ileum was normal (figure 1).

TREATMENT

At this stage, a diagnosis of intestinal obstruction with perforation was made. The patient underwent an emergency laparotomy for small bowel obstruction. During laparotomy, we found a mass involving loops of the ileum adherent to the anterior abdominal wall with small pockets of pus and dilated proximal small bowel loops. A Meckel's

Figure 1 CT of the abdomen and pelvis (coronal view) showing dilation of small bowel loops and an inflammatory mass.

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diverticulum of normal appearance was identified proximal to the mass.

Resection of the mass with entangled loops of the ileum and side-to-side anastomosis was performed, with resection of the adherent part of the right rectus sheath. The Meckel's diverticulum was resected separately.

The histology report revealed marked submucosal oedema, muscular hypertrophy and an intense eosinophilic infiltrate involving the submucosa and serosa of the specimen (figure 2). There was focal abscess formation. The overlying mucosa was relatively normal and there was no evidence of inflammatory bowel disease or granulomatous lesions. No dysplasia or malignancy was present. An acute inflammatory exudate rich in eosinophils was seen in the attached mesenteric fat and on the serosal surface, consistent with a previous perforation. Some reactive lymph nodes were present. The excised anterior abdominal wall mass showed extensive abscess formation.

OUTCOME AND FOLLOW-UP

The patient had an uneventful recovery and was discharged home on the ninth postoperative day. A postoperative stool analysis was negative for ova, cysts and parasites. He was followed up for 6 months, but had no symptoms and was free from GI symptoms at the time of reporting this case.

DISCUSSION

First described by Kaijser² in 1937, EG is a rare disease of the GI tract. Approximately 300 cases have been published in the literature, generally as case reports or case series.^{1 3–5} EG can affect all races and ages, with peak incidence in the third and fifth decades. The incidence is higher in males, with a ratio of 3:2.^{4 5} Any part of the GI tract can be involved, however, the stomach is the most common site, followed by the small intestine.¹ Eosinophilic proctocolitis is almost exclusively seen in children.^{4 5}

The clinical picture varies according to the anatomical site and the depth of eosinophilic infiltration of the GI involved. In children and adolescents, EG can present as growth retardation, failure to thrive or delayed puberty.¹

On the basis of the depth of eosinophilic infiltration, three types of EG can be identified. Mucosal EG (the most common) manifests with vomiting, abdominal pain, diarrhoea, protein-losing enteropathy and malabsorption. Muscular EG is associated with gut wall thickening and obstructive GI symptoms. Serosal EG (the least common) is characterised by exudative ascites and is associated with higher peripheral eosinophilia than the other two variants.⁶ However, in our patient, there was no evidence of peripheral eosinophilia, despite the dense serosal eosinophilic infiltration in the specimen.

Figure 2 Microscopy (H&E) of the resected ileum revealing intense eosinophilic infiltration from the submucosa to the subserosal. (A) Low-power magnification $\times 10$ and (B) high-power magnification $\times 40$.

The aetiology of EG is still unclear. However, a personal or family history of food allergies or atopic disorders has been found in more than 50% of cases.^{1 5} Eotaxin, a specific eosinophil chemoattractant, plays an important role in the pathogenesis of EG.^{4 5}

In 1990, Talley *et al*⁷ suggested three diagnostic requirements: (1) the presence of GI symptoms, (2) the identification of eosinophilic infiltration in the bowel wall and (3) no evidence of parasitic or extraintestinal disease.

The diagnosis is further supported by the presence of peripheral eosinophilia, which is present in 75% of cases. Intestinal obstruction is an unusual presentation and, as in our case, is associated with the muscular variant of EG.^{4 8}

Radiological findings are variable and non-specific, and may be absent in about 40% of cases.¹ CT scans may show nodular and irregular fold thickening in the distal stomach and proximal small bowel. Endoscopically, the findings may be normal or non-specific.⁴ Laparotomy or laparoscopic full thickness biopsy may be required to make a diagnosis in cases of subserosal disease.⁶

Unlike the well-established association between RA and peripheral blood eosinophilia, the link between RA and tissue eosinophilia is still unclear.^{9–11}

Rheumatoid vasculitis is a relatively uncommon complication of RA and rarely involves the GI tract. Even in such cases, no eosinophilic cells have been identified on histological examination.⁹ However, in our case, there was intense eosinophilic infiltration of the submucosal and serosal layers.

Eosinophilic pneumonia, eosinophilic fasciitis, hypereosinophilic syndrome and cutaneous eosinophilic vasculitis have been reported in patients with RA. To the best of our knowledge, only three cases of the coexistence of RA and EG have been reported in the literature, with no clear explanation provided.^{9 10} The common feature in all cases was non-specific abdominal pain for a long period prior to presentation.^{9–11} However, our reported case had no history of abdominal pain or other GI symptoms. In our patient, there was no evidence of other systemic tissue eosinophilic infiltration outside the GI tract.

Steroids remain the main line of treatment for EG, with good symptomatic response. As in the case of our patient, surgery is indicated only in the case of obstruction or perforation.⁸

In conclusion, we report this case of EG for two reasons: first, because of its rare incidence and unusual presentation as an intestinal obstruction and second, in view of the rare and unexplained association between EG and RA. We decided to report this case as a contribution to the literature, suggesting that the coexistence may be more than a coincidence.

Learning points

- ▶ Eosinophilic gastroenteritis (EG) is a rare disease with a wide range of clinical features depending on the site and layer of the bowel wall involvement.
- ▶ The most reliable diagnostic finding is the evidence of eosinophilic infiltration on the biopsied tissue.
- ▶ EG should be considered in patients with rheumatoid arthritis with unexplained abdominal symptoms.
- ▶ Surgery is indicated only in cases of obstruction or perforation. Corticosteroids remain the mainstay of therapy for EG.

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