

## Abstract

- Eosinophilic enteritis (EE) is a rare subtype of eosinophilic gastrointestinal disease characterized by eosinophilic infiltration of the small intestinal wall in the absence of secondary cause.
- The disease is further classified by depth of involvement: mucosal, muscular and subserosal, each with unique phenotype.
- Of these, subserosal is the rarest and eosinophilic ascites is regarded as the idiosyncratic feature of this pattern.
- We report a patient presenting with gastrointestinal symptoms and eosinophil rich ascitic fluid.
- Prior similar flare and robust steroid response supported a diagnosis of EE.

## Case Report

- A 23-year-old Asian male presented with 1-week history of nausea, vomiting and abdominal distension.
- 5 years ago, he had similar symptoms. Imaging was notable for ascites and thickening of esophagus and jejunum.
- Abdominal fluid analysis revealed eosinophilic ascites. After exclusion of other causes of eosinophilia, he underwent bi-directional endoscopy. Mucosa was normal in appearance and only esophageal biopsies were notable for eosinophilic infiltration.
- A presumptive diagnosis of EE was made, and symptoms resolved rapidly with prednisone.

Component	Value
WBC	13.2 k/uL ▲
Hemoglobin	17.5 g/dL
Hematocrit	51.1%
Platelets	314 k/uL
Eosinophil (%)	32% ▲
Eosinophil (#)	4.22 k/uL ▲
AST	25 U/L
ALT	18 U/L
ALP	103 U/L
Bilirubin, total	0.6 mg/dl

**Table 1 – Admission serology**

Component	Value
Albumin	3 g/dl
Protein	4.4 g/dl
Total nucleated cell count	11,751/uL
Neutrophils (%)	0%
Lymphocytes (%)	9%
Monocytes (%)	6%
Eosinophils (%)	76% ▲

**Table 2 – Ascitic fluid analysis**



**Figure 1- Coronal section abdominal computerized tomography showing abdominal and pelvic ascites in addition to small intestinal wall thickening**

## Case Outcome

- CT abdomen pelvis showed small bowel thickening and ascites (figure 1)
- Diagnostic paracentesis performed (table 2)
- Alternate causes of eosinophilia excluded via medication review and stool studies for parasitic infection.
- Symptoms resolved after a course of IV methylprednisolone
- Discharged on prednisone with outpatient follow-up

## Klein Classification of Eosinophilic Enteritis

Involved Layer	Overview	Clinical Features
Serosal	Symptoms related to mucosal inflammation	Diarrhea, abdominal pain, gastrointestinal bleeding, malabsorption
Muscular	Obstructive signs and symptoms	Small bowel obstruction, Gastric outlet obstruction
Subserosal	Least Common	Eosinophilic Ascites

**Table 3 – Klein Classification of Eosinophilic Enteritis**

## Discussion

- EoE is classified according to the layer of the gut wall involved (table 3).
- The sub-serosal variant is the rarest<sup>1</sup>.
- Other causes of eosinophilia must be ruled out.
- Remoteness of serosa from the lumen often causes non-diagnostic endoscopic biopsy<sup>2</sup>.
- Glucocorticoids are the mainstay of therapy.
- A combination of peripheral and ascitic eosinophilia should prompt consideration of EE.

## References

- Shifflet, Allison, et al. "Eosinophilic Digestive Diseases: Eosinophilic Esophagitis, Gastroenteritis, and Colitis." *Journal of the Formosan Medical Association*, vol. 108, no. 11, Elsevier BV, Nov. 2009, pp. 834–843. Crossref, doi:10.1016/s0929-6646(09)60414-9.
- Agrawal, Shefali, et al. "Eosinophilic Ascites: A Diagnostic and Therapeutic Challenge." *World Journal of Gastrointestinal Surgery*, vol. 8, no. 9, Baishideng Publishing Group Inc., 2016, p. 656. Crossref, doi:10.4240/wjgs.v8.i9.656.