

Diagnosis of Eosinophilic Enteritis With Video Capsule Endoscopy and Double Balloon Enteroscopy With Favorable Response to Corticosteroids

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ABSTRACT

Eosinophilic enteritis is a rare disease with nonspecific symptoms, often representing a diagnostic challenge. Video capsule endoscopy (VCE) has enabled examination of the full small bowel. However, capsule retention is an unfortunate complication. We present the case of a female patient admitted for abdominal pain. Appendectomy without resolution of symptoms was performed. A normal computed tomography and magnetic resonance imaging were obtained. The diagnosis was made by VCE and double balloon enteroscopy with biopsy. Asymptomatic capsule retention was resolved after corticosteroid therapy. The patient showed a favorable clinical and endoscopic response, confirmed through a second VCE after 3 months of treatment.

INTRODUCTION

Gastrointestinal eosinophilic disorders (GIEDs) are a group of entities that include eosinophilic esophagitis, eosinophilic gastroenteritis, eosinophilic colitis, and eosinophilic enteritis, all of them characterized by mucosal infiltration of eosinophils and associated with digestive symptoms, after exclusion of other secondary causes.¹ Recently, the prevalence of eosinophilic gastroenteritis and eosinophilic colitis in open US population was determined to be 5.1/100,000 and 2.1/100,000, respectively.²

Atopic comorbidities, such as asthma and allergic rhinitis, are found in up to 50% of cases. Peripheral eosinophilia occurs in 20%–80%.³ To establish the diagnosis of GIED, a high clinical suspicion, imaging, and endoscopic procedures that include mucosal biopsies are required.⁴ The histologic criteria for the diagnosis of GIED have been controversial for a long time because there is no evidence-based, widely accepted criteria.⁵ Regarding eosinophilic enteritis, Collins suggested the presence of >56 eosinophils per high power field (HPF) in a mucosal sample of ileum, eosinophilic cryptitis or crypt abscess, and altered eosinophil distribution.⁶ The treatment of GIED is based on diet modifications and oral corticosteroids.⁴

CASE REPORT

A 28-year-old woman, without medical history, allergies, or medication, was assessed for abdominal pain of 12 hours in the right lower quadrant. The patient denied any history of diarrhea, blood in the stool, fever, or recent travel. Laboratory results were normal, and abdominal computed tomography suggested a diagnosis of appendicitis; the histopathologic report was normal without any eosinophils. Due to persistent abdominal pain, further workup including stool ova and parasites, calprotectin, and magnetic resonance image enterography was performed, which did not report any abnormalities.

A video capsule endoscopy (VCE) showed a mucosal circumferential lesion in the ileum, associated with inflammation, ulceration, and partial stenosis (Figure 1). The capsule was retained in this site; therefore, a double balloon enteroscopy (DBE) was followed for the extraction of the capsule and for sampling of the mucosal lesion (Figure 2). However, capsule extraction was unsuccessful. Anatomopathologic examination of the biopsies showed mucosal infiltration of >52 eosinophils/HPF, eosinophilic cryptitis, increased epithelial mitotic activity, and altered eosinophil distribution with more than 4 eosinophils/HPF in the surface and crypt epithelium (Figure 3). Furthermore, a negative QuantiFERON-TB Gold test was obtained. Treatment with oral budesonide at a dose of 9 mg/d was initiated, observing prompt symptom improvement and spontaneous capsule elimination. After 6 months of treatment, a follow-up VCE was performed with previous use of patency capsule, to document mucosal response. It showed a significant improvement (90%) of the mucosal lesions (Figure 4). Currently, the patient remains asymptomatic with a steroid-reduced scheme.

DISCUSSION

Of the 3 conditions that compose GIED, eosinophilic enteritis is the most difficult to diagnose due to its location in the small bowel, thus representing a limitation for conventional endoscopic procedures. Furthermore, imaging tests have low sensitivity.⁷ Endoscopic features shown by VCE and DBE are mucosal edema, erythema, ulceration, and complete or partial stenosis, though not pathognomonic.⁸ There are only a few reports of eosinophilic enteritis diagnosed with VCE in the

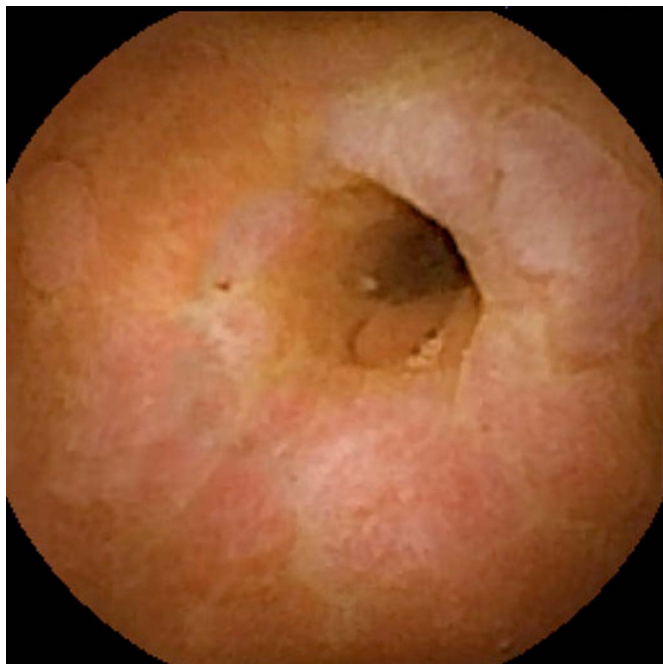


Figure 1. Video capsule endoscopy showing mucosal circumferential lesion in the ileum, associated with inflammation, ulceration, and partial stenosis.

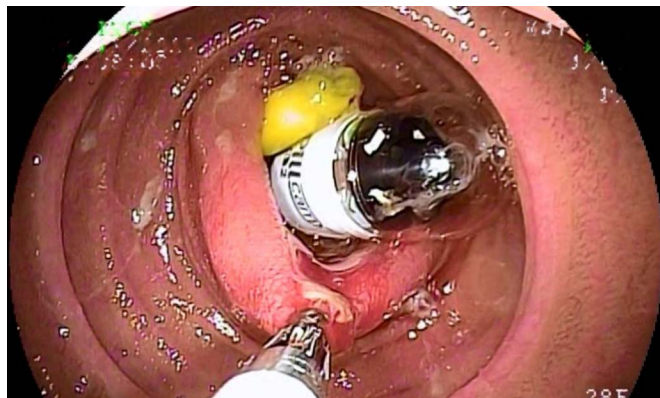


Figure 2. Double balloon enteroscopy performed for the extraction of the capsule and for sampling of the mucosal lesion.

literature; however, the diagnostic confirmation is achieved through histologic examination of the mucosal biopsies by means of DBE or surgical resection. Due to possible stenosis of the mucosal lesions, this condition may represent a high risk of capsule retention. In case of retention, it is recommended to begin treatment with corticosteroids to allow spontaneous elimination of the capsule. If patients remain without symptoms of small bowel obstruction, one could avoid more invasive procedures such as surgical extraction.⁹ The overall VCE retention rate in the cases of eosinophilic enteritis is unknown.

The natural history of eosinophilic enteritis has been described with different disease course patterns such as single flare, recurring course, and a chronic persistent course without a period of remission. Currently, there is no well-established, evidenced-based treatment. However, corticosteroids have proven to be highly effective in multiple case series, as in our patient.¹⁰ The optimal duration of maintenance treatment is yet to be defined, based on the safety and efficacy.

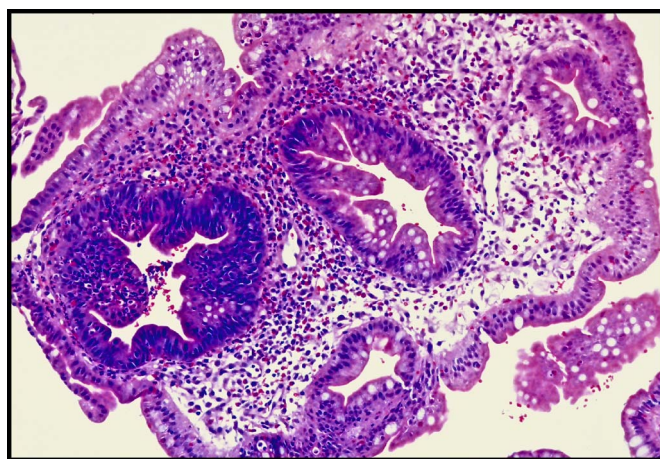


Figure 3. Anatomopathologic examination of the biopsies with mucosal infiltration of >52 eosinophils/high power field (HPF), eosinophilic cryptitis, increased epithelial mitotic activity, and more than 4 eosinophils/HPF in the surface and crypt epithelium.

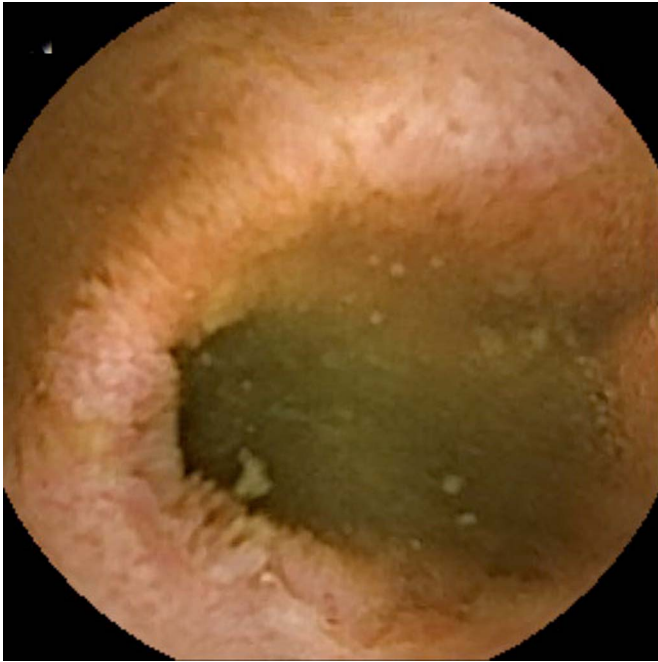


Figure 4. Video capsule endoscopy posttreatment showing a significant improvement (90%) of the mucosal lesions.

DISCLOSURES

Author contributions: G. Herrera-Quiñones drafted the manuscript. SI Scharrer, AR Jiménez-Rodríguez, OD Borjas-Almaguer, and JO Jáquez-Quintana performed the literature research. D. García-Compeán, JA Martínez-Segura, JA González-González, and HJ Maldonado-Garza revised the manuscript. D. García-Compeán is the article guarantor.

Financial disclosure: None to report.

Informed consent was obtained for this case report.

Received October 15, 2018; Accepted April 24, 2019

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