Gastroenterite Eosinofílica: Uma Doença Incomum do Trato Gastrointestinal

Eosinophilic Gastroenteritis: An Unusual Disease of Gastrointestinal Tract

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RESUMO

A gastroenterite eosinofílica é uma doença gastrointestinal rara, caracterizada pela presença de dor abdominal, náuseas, vómitos, diarreia, hemorragia gastrointestinal e perda ponderal. A etiologia e patogenia permanecem desconhecidas, baseando-se nos casos clínicos reportados. A apresentação clínica varia de acordo com o local e profundidade de invasão do trato gastrointestinal. O diagnóstico é geralmente confirmado pela histologia, mostrando infiltração eosinofílica, na ausência de outras causas que o justifiquem.

Os autores apresentam o caso de uma mulher, de 47 anos, com diagnóstico de dislipidemia, obesidade e rinite alérgica, com ausência de história familiar relevante. Foi admitida no serviço de Medicina Interna com uma história de dor abdominal, náuseas, vómitos, diarreia e perda ponderal (> 10%) com 2 semanas de evolução. Os estudos complementares revelaram uma elevada contagem periférica de eosinófilos, anemia normocítica, elevação da velocidade de sedimentação e níveis normais de IgE. Foi realizado estudo endoscópico, com biópsias a mostrar infiltração eosinofílica moderada na mucosa gástrica e duodenal. A doente iniciou terapêutica com prednisolona, com melhoria clínica. Nos últimos 20 anos de *follow-up*, a doente tem-se mantido clinicamente e analiticamente estável.

A gastroenterite eosinofílica é caracterizada por três critérios - presença de sintomas gastrointestinais, evidência histológica de infiltração eosinofílica e exclusão de outras causas de eosinofilia O tratamento é realizado de acordo com a severidade dos sintomas. A corticoterapia é a terapêutica padrão com uma dose habitual de 20-40 mg por dia durante 2 semanas, com desmame progressivo. Na literatura, o uso de montelucaste e agentes biológicos tem sido reportado.

PALAVRAS-CHAVE: Enterite/diagnóstico; Enterite/tratamento farmacológico; Eosinofilia/diagnóstico; Eosinofilia/tratamento farmacológico; Gastrite/diagnóstico; Gastrite/tratamento farmacológico

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ABSTRACT

Eosinophilic gastroenteritis (EGE) is a rare gastrointestinal disease characterized by generalized abdominal pain, nausea, vomiting, diarrhea, gastrointestinal bleeding and weight loss. The etiology and pathogenesis are not well understood and mostly based on case reports. Clinical presentation may vary depending on sites and depth of involvement of the gastrointestinal tract. The diagnosis is usually confirmed by histology that shows eosinophilic infiltration and the absence of secondary cause of eosinophilia.

The authors present a case report of a 47-year-old woman that was diagnosed with dyslipidemia, obesity and allergic rhinitis. She had no significant family history. She was admitted in internal medicine department with 2 weeks of abdominal pain, nausea, vomiting, diarrhea and weight loss (> 10%). Further study revealed increased eosinophil count, normocytic anemia, elevated erythrocyte sedimentation rate and normal Ig E levels. Digestive endoscopic study was performed, and multiple biopsy specimens showed moderate eosinophilic infiltration in stomach and duodenal mucosa. The patient was started on prednisolone, with clinical improvement. Follow-up go the patient twenty years after the beginning of this treatment showed stabilization of clinical symptoms and laboratory tests.

So, eosinophilic gastroenteritis is characterized by three criteria - presence of gastrointestinal symptoms, histologic evidence of eosinophilic infiltration and exclusion of other causes of tissue eosinophilia. The treatment is based on the severity of symptoms. Corticosteroids are the mainstay of therapy, so the usual dose of prednisolone/prednisone is 20-40 mg daily for two weeks with tapering thereafter. In the literature, the use of montelukast and biologic agents have been reported.

KEYWORDS: Enteritis/diagnosis; Enteritis/drug therapy; Eosinophilia/diagnosis; Eosinophilia/drug therapy; Gastritis/diagnosis; Gastritis/drug therapy

INTRODUCTION

Eosinophilic gastroenteritis (EGE) is a rare gastrointestinal disease characterized by cramps or generalized abdominal pain, nausea, vomiting, diarrhea, gastrointestinal bleeding and weight loss or various combinations of the above symptoms.[1]

The etiology of the disease remains unknown, but it is usually encountered in patients with history of atopy.[1]

The disease may involve any part of the gastrointestinal tract, although the stomach and small intestine are the most common sites involved.[1] Isolated eosinophilic esophagitis or colitis may occur.[1]

EGE is associated with eosinophilic infiltrates in the different layers of stomach and intestine.[1] Peripheral eosinophilia could be observed, although it is not specific.[1]

Imaging has a limited role in supporting the diagnosis, and therefore a high degree of clinical suspicion is required.[1] Exams such as ultrasound or computed tomography can be used for the differential diagnosis, especially in presence of obstructive symptoms.[1] The diagnosis is usually confirmed by histology that shows more than 20 eosinophils per high-power field and the absence of secondary cause of eosinophilia.[1]

The authors describe a case of EGE with 20 years of evolution successfully treated with glucocorticoids.

CASE REPORT

A 47-year-old Caucasian woman was diagnosed with dyslipidemia, obesity and allergic rhinitis. She had no significant family history.

She was admitted in internal medicine department with 2 weeks of abdominal pain, nausea, vomiting, diarrhea and weight loss (> 10%).

Further study revealed increased eosinophil count to 10 000 cells/uL, normocytic anemia with Hb of 11 g/dL, albumin 23 g/dL, elevated erythrocyte sedimentation rate (100 mm/h), normal liver and renal function tests, but also, normal Ig E levels.

She underwent abdominal ultrasound and computed tomography, which revealed only the presence of moderate peritoneal effusion.

An ultrasound-guided diagnostic paracentesis was performed, with an output of 150 cm^3 of seri-hematic fluid, whose study revealed the presence of 2000 cells/uL, with predominance of eosinophils and negative cytology and microbiology studies.

Digestive endoscopic study was performed, which showed mild diffuse gastritis and moderate duodenitis with erythematous mucosa.

Multiple biopsy specimens showed moderate eosinophilic infiltration in stomach and duodenal mucosa with ~ 25 eosinophils per field. Although, there is no serous

biopsy, the presence of peritoneal effusion is highly suggestive of its involvement.

During the work-up for hypereosinophilia, intestinal parasitic infections, primary hypereosinophilic syndrome, malignancies and vasculitis/autoimmunity were excluded.

The patient was started on prednisolone 40 mg daily. After this initial dose of steroids, she clinically improved significantly. Her absolute eosinophil count dropped to < 1000 and she was discharged on prednisolone for 2 weeks with subsequent tapering.

Follow up go the patient twenty years after the beginning of this treatment showed stabilization of clinical symptoms and laboratory tests. However, during this period, the patient presented some episodes of diarrhea with mild elevation of her absolute eosinophilic count, which justifies the maintenance of steroids (currently 5 mg/day).

DISCUSSION

EGE is a rare disease of the gastrointestinal tract that is characterized by abdominal pain, nauseas, vomiting, diarrhea and weight loss associated with eosinophilic infiltration of gastrointestinal wall.[1]

Its incidence is difficult to estimate owing to the rarity of the disease.[2] Since the very first description of this disease by Kaiser in 1937, more than 280 cases have been reported in the medical literature.[2] Studies from the United States have found a prevalence ranging between 8.4 and 28 per 100 000, with a slightly increasing incidence over the past 50 years.[3] Higher socioeconomic status, Caucasian race and excess weight may be risk factors.[3]

The etiology and pathogenesis are not well understood and mostly based on case reports.[4,5] Many patients have a history of allergy, atopy, food allergies, asthma and elevated serum Ig E levels that may strongly suggest the role of hypersensitivity reactions in the pathogenesis.[4,5] As we can see, this patient had a history of atopy, namely allergic rhinitis.

Clinical presentation may vary depending on sites and depth of involvement of the gastrointestinal tract.[1] The mucosal form is seen in about 25%-100% of cases and usually presents as abdominal pain, nausea, vomiting, dyspepsia, diarrhea, malabsorption, gastrointestinal hemorrhage, protein-losing enteropathy and weight loss.[6,7] The muscular form is seen in 10%-60% of cases and follows the clinical picture of obstructive symptoms.[6,7] The subserosal form is less common and may cause peritoneal irritation, which can lead to ascites, peritonitis and perforation in more severe cases.[6,7]

An additional manifestation of the disease, peripapillary duodenal disease might result in pancreatitis and biliary obstruction.[8]

Laboratory findings that support the diagnosis include peripheral eosinophilia, hypoalbuminemia, increased fecal fat, iron deficiency anemia and elevated serum Ig E levels.[8] The erythrocyte sedimentation rate is rarely elevated, however, in this case was presented.[8] So, these laboratory findings are sufficient to raise suspicion, although they are not adequate for a diagnosis.[8]

The role of imaging in the diagnosis of this condition is very limited because radiological findings are nonspecific and absent in half of the patients.[8] However, they are essential for the differential diagnosis.[8]

Endoscopic findings suggestive of EGE include normal aspect, erythematous friable mucosa, ulcers, pseudo-polyps and polyps, none of which are sensitive or specific for diagnosis of this disease.[9] Histologic examination remains the cornerstone of diagnosis.[9] So, an eosinophil count of at least 20 eosinophils per high-power field has been set in most reports as the threshold for fulfilling these diagnostic criteria.[9]

The differential diagnoses include intestinal parasitic infections (i.e. *Strongyloides*, *Ascaris*, *Ancylostoma*, *Anisakis*, *Capillaria*, *Toxicara*, *Trichiura* and *Trichinella* spp), drugs, malignancies, vasculitis as eosinophilic granulomatosis with polyangiitis or polyarteritis nodosa, connective tissue diseases, inflammatory bowel diseases, celiac disease.[8,9] Furthermore, ruling out of the hypereosinophilic syndrome is of special value as it is a myeloproliferative disorder, characterized by idiopathic high peripheral eosinophilic count > 1500 eosinophils per field persisting for more than 6 months and having severe systemic implications due to its multisystem involvement, including heart, central nervous system, skin, lungs and kidney, rarely the gastrointestinal tract.[9]

Although spontaneous remission reportedly occurs in around 30% to 40% of cases, most patients require ongoing treatment.[9] The treatment is based on the severity of symptoms.[8,9] Corticosteroids are the mainstay of therapy, so the usual dose of prednisolone/prednisone is 20-40 mg daily for two weeks with tapering thereafter.[8] A vast majority of patients improve with this therapy and do not require further treatment.[8] However, relapse can occur and is treated with long-term, low-dose steroids (prednisone 5-10 mg daily), as we can observe in this case.[8]

The majority of reports in the literature concerning the use of montelukast, a selective leukotriene inhibitor, have shown significant clinical response in patients, either when the drug is used alone or in combination

with steroids for induction and maintenance of remission or refractory disease.[9] The authors would like to add that this patient was still undergoing therapy with montelukast, but without any success.

Biologic agents have also been reported in some case studies of EGE.[9] Mepolizumab (anti-IL5) was reported to have improved tissue and peripheral eosinophilia, but without relieving symptoms and rebound hypereosinophilia.[9] Omalizumab (anti-Ig E) was reported to similarly results in a significant histologic response but to be unlikely to efficiently treat EGE patient with serum Ig E level > 700 kIU/L.[9] Infliximab (anti-TNF) was reported as highly effective for inducing remission in refractory EGE, but its use is limited by the development of resistance and secondary loss of response.[9]

The authors presented this case of eosinophilic gastroenteritis with 20 years of follow-up and successfully treated with low-dose of corticosteroids (5 mg per day). We intend to alert the physicians to consider this diagnosis, but also, emphasize that the diagnosis requires three criteria - presence of gastrointestinal symptoms, histologic evidence of eosinophilic infiltration and exclusion of other causes of tissue eosinophilia.

CONTRIBUIÇÃO AUTORAL/ AUTHORS CONTRIBUTION

MG: 1º autor - recolha de dados, escrita e revisão
TM: Co-autor - revisão

MG: Main author - data collection, writing and reviewing
TM: Reviewing

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REFERENCES

1. Mori A, Enweluzo C, Grier D, Badireddy M. Eosinophilic gastroenteritis: review of a rare and treatable disease of the gastrointestinal tract. Case Rep Gastroenterol. 2013;7:293-8. doi: 10.1159/000354147.
2. Whitaker I, Gulati A, McDaid JO, Bugajska-Carr U, Arends MJ. Eosinophilic gastroenteritis presenting as obstructive jaudince. Eur J Gastroenterol Hepatol. 2004;16:407-9. doi: 10.1097/00042737-200404000-00007.
3. Spergel JM, Book WM, Mays E, Song L, Shah SS, Talley NJ, Bonis PA. Variation in prevalence, diagnostic criteria and initial management options for eosinophilic gastrointestinal diseases in the United States. J Pediatr Gastroenterol Nutr. 2011;52:300-6. doi: 10.1097/MPG.0b013e3181eb5a9f.
4. Jimenez-Saenz M, Villar-Rodriguez JL, Torres Y, Carmona I, Salas-Herrero E, Gonzalez-Vilches J, Herrerias-Gutierrez JM. Biliary tract disease: a rare manifestation of eosinophilic gastroenteritis. Dig Dis Sci. 2003;48:624-7. doi: 10.1023/a:1022521707420.
5. Oyaizu N, Uemura Y, Izumi H, Morii S, Nishi M, Hioki K. Eosinophilic gastroenteritis. Immunohistochemical evidence for Ig E mast cell-mediated allergy. Acta Pathol Jpn. 1985;35:759-66.
6. Baig MA, Qadir A, Rasheed J. A review of eosinophilic gastroenteritis. J Natl Med Assoc. 2006;98:1616-9.
7. Cello JP. Eosinophilic gastroenteritis - a complex disease entity. Am J Med. 1979;67:1097-104. doi: 10.1016/0002-9343(79)90652-1.
8. Maeshima A, Murakami H, Sadakata H, Saitoh T, Matsushima T, Tamura J, Karasawa M, Naruse T. Eosinophilic gastroenteritis presenting with acute pancreatitis. J Med. 1997;28:265-72.
9. Abou Rached A, El Hajj W. Eosinophilic gastroenteritis: approach to diagnosis and management. World J Gastrointest Pharmacol Ther. 2016;7:513-23. doi: 10.4292/wjgpt.v7.i4.513.