ORIGINAL ARTICLE

Bali Medical Journal (*Bali Med J*) 2018, Volume 7, Number 3: 598-600
P-ISSN.2089-1180, E-ISSN.2302-2914

Published by DiscoverSys

A case report of eosinophilic colitis in an elder

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ABSTRACT

Primary eosinophilic gastrointestinal disease (EGID) is a spectrum of disease characterized by eosinophilic infiltration along gastrointestinal tract without other causes of eosinophilia, with Eosinophilic colitis (EC) as the rarest form.

Case: We reported a rare case of Eosinophilic colitis, where a 69-year-old gentleman presented to us with chronic diarrhea associated with mild abdominal pain for 6 months. He had significant eosinophilia 9.0%, with the colonic biopsy reported as mildly distorted glands with markedly increased eosinophils (> 40/high-power field) in the lamina propria. Otherwise, his allergic skin testing was normal. His diarrhea was resolved with a course of steroid, with repeated blood test showing improving eosinophilia of 4.5%.

Conclusion: EC is rarely reported. However, this could be underdiagnosed. All chronic diarrhea cases should be offered colonoscopy with biopsy to rule out Eosinophilic Colitis.

Keywords: Diarrhea, Colonoscopy, Eosinophilia
Cite This Article: Yu, C.J., Khan, A.H., Rom, L.B. 2018. A case report of eosinophilic colitis in an elder. *Bali Medical Journal* 7(3): 598-600. DOI:10.15562/bmj.v7i3.1139

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Received: 2018-04-16
Accepted: 2018-6-8
Published: 2018-8-1

INTRODUCTION

Primary eosinophilic gastrointestinal disease (EGID) was characterized by eosinophilic infiltration along gastrointestinal tract without other causes of eosinophilia e.g. drug reaction, parasitic infection or malignancy.[1] The family of EGID includes eosinophilic esophagitis, eosinophilic gastroenteritis, and eosinophilic colitis, with EC as the rarest form.

The actual prevalence of primary EGID is largely unknown in view presence of other secondary eosinophilic inflammation e.g. IgE-mediated allergy reaction, gastroesophageal refluxes disease and inflammatory bowel disease.[2] EC remains an enigma and a diagnosis of exclusion in view of the absence of defined histological criteria for a specific eosinophilic count in the colonic mucosa.[3] Rothenberg ME studied that EC appears to have a biphasic distribution that affects young patients with no sexual preference.[1]

The etiology of EC remains unclear, although genetic and allergic component may play a role as few studies reported that 16% of patients with EGID have positive family history and 80% of patients have a coexistent atopic disease.[2] Cow's milk and soy protein has been implicated to infantile form of EC but potential food association with adult form is still largely unknown.[4] The pathophysiology of food hypersensitivity in EC may be attributed to the pathogenic role of IgE as mentioned by Inamura et al. where the accumulation of mast cells was seen in the colonic biopsy.[5] However, in adults, EC is more non-IgE associated but rather acts through CD4 (+) Th2 lymphocyte mediated mechanism.[6] Upregulation of thymic stromal lymphopoietin (TSLP) has been observed in adult patients.

In EC, the endoscopic changes are nonspecific, and currently, there is no consensus on the histological criteria for diagnosis. Diagnosis depends on detecting dense eosinophilic infiltration in the colon where most experts in the field used diagnostic threshold of twenty eosinophils per high-power field.[4] Other supportive evidence can be obtained for example from allergic skin testing via skin prick test (SPTs) and radioallergosorbent test (RASTs) where a negative test is required to exclude IgE mediated food allergy.[3] Clinical presentations in EC vary according to which colonic layers that are predominantly affected; but generally will present with abdominal pain, diarrhea and weight loss.[4]

There are scanty of case reports about EC in Southeast Asia. Here, we reported a case of EC in a 69-year-old gentleman, which treated successfully with a course of prednisolone therapy.

This report aims to raise the awareness among the clinicians about EC which can present as chronic diarrhea, and the need for steroid therapy.

CASE REPORT

A 69-year-old gentleman was referred to our Gastroenterology clinic with chronic diarrhea for six months. He was passing loose stool for three to four times in a day associated with abdominal pain. He denied associated fever, weight loss or skin rash.

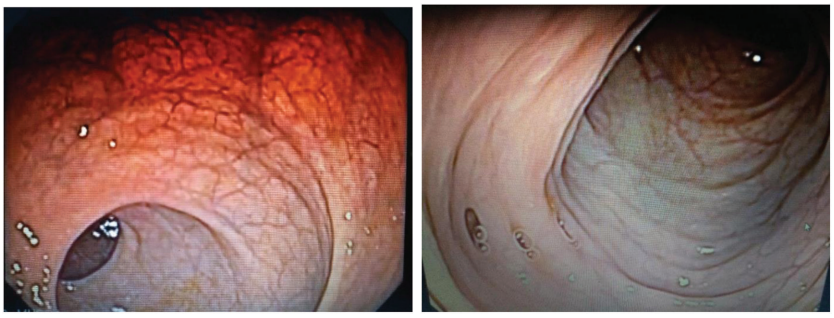

Figure 1 Colonoscopy: multiple uncomplicated diverticula from descending colon to cecum, with otherwise normal mucosa

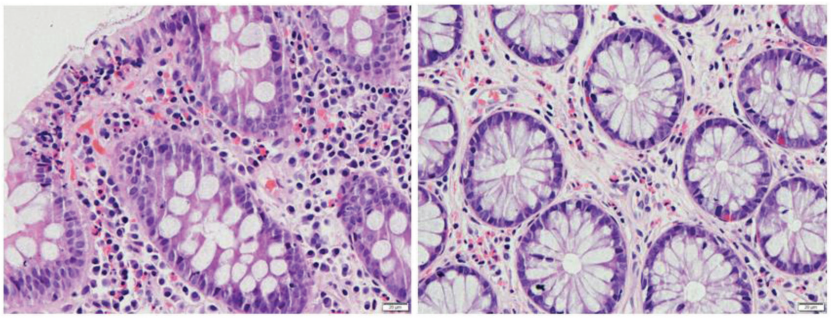

Figure 2 [HEx400, hematoxylin and eosin stained] Microscopic appearance of the biopsy of the colon showed mildly distorted glands with markedly increased eosinophils (>20/1 HPF) in the lamina propria, and eosinophilic cryptitis

And the diarrhea episode was not related to food as well.

Further questioning, He had underlying chronic plaque psoriasis which was well controlled with tablet Methotrexate 12.5mg/week and topical therapy for the past three years. The patient had no known food or drug allergies in the past. He denied recent new drugs. He was a non-smoker and a teetotaler. There was no family history of EGID. His physical examinations were unremarkable.

Full blood counts as follows; Hemoglobin 16.2g/dL with hematocrit of 47.4%; Leucocytes 9500/mm^3 (neutrophils: 64%; eosinophils 9% with absolute count: 0.8 × 109/L, Lymphocytes 18%) and platelet 253,000/mm^3. Parasitological examination and bacterial culture of stool were normal. Liver and renal functions test were within normal limit. Thyroid assessment and autoimmune screen (antinuclear antibody) were also unremarkable. There was no significant abnormality on ultrasound abdomen apart from findings of fatty liver and cholelithiasis. A colonoscopy was performed with the finding of multiple uncomplicated diverticula from descending colon to the cecum, with otherwise normal mucosa (Figure 1). Multiple colonic biopsies were taken from every segment of the colon and reported as mildly distorted glands with markedly increased eosinophils (> 40/1 HPF) in the lamina propria, and there is no parasite seen (Figure 2). His allergic skin testing was normal.

The patient was started on oral prednisolone (0.5mg/kg/day for four weeks, and then tapered over eight weeks). Upon follow up review, the patient noted complete resolution of its bowel movement with formed stool. His repeated blood test showed improving eosinophilia (4.5%). Otherwise, he did not experience any adverse effect of steroid. Currently, the patient had not had any diarrhea episode since he completed the prednisolone therapy half a year ago.

DISCUSSION

The pathophysiological mechanism for EC remains understudied. EC is believed to be Th2 lymphocyte-mediated immune response in adult cases. IL-3, IL-5 and IL-13, and granulocyte–macrophage colony stimulating factor (GM-CSF) may play an important role in the introduction of eosinophils to the colon tissues.[3] EC is mainly diagnosis of exclusion after secondary causes have been thoroughly investigated, with three hallmarks i.e. presence of peripheral eosinophilia, eosinophilic infiltration of gastrointestinal tract and functional abnormalities.[7,8] Our patient had fulfilled the diagnostic criteria with the presentation of chronic diarrhea, peripheral eosinophilia, together with histological findings of dense eosinophilic infiltration in colon (> 40 eosinophils/HPF).

He had underlying well-controlled psoriasis and he was on Methotrexate for the past three years. Even tough eosinophilia can be found among people with psoriasis, and it is reported as side effect among people who take Methotrexate, this could not explain the dense eosinophilic infiltration in our patient's colon. Moreover, there is no literature suggests any association of EC with Methotrexate or psoriasis. And the negative allergic skin testing had also excluded the atopic syndrome. This patient's diarrhea symptom, together with the eosinophil count was resolved with steroid. And he was in clinical remission despite not on steroid for almost half a year.

Currently, treatments for EC are mainly based on case reports and experts opinion. There was no guideline on the management of EC. Young children with proctitis may achieve the symptom relief on elimination, oligoantigenic and amino acid-based diet[3] but less effective in adolescent and adults. In adults, its natural history tends to become chronic with relapse and remission pattern, and prone medication during attack. Corticosteroids are generally recommended, where majority of the patients will respond within two weeks of

treatment,[4] and this was proven in our patient who responded well to a course of prednisolone therapy as well. The steroids are believed to inhibit the eosinophil growth.[3] Budesonide had been reported to achieve maintenance of remission up to 2 years, especially disease of the right colon and ileum.[9] An immunomodulatory agent such as Azathioprine is also proven to have a role especially in steroid dependence disease.[1] Surgery is only indicated if intestinal obstruction or perforation happens. Currently, there's a trend of increasing usage of biologic agents in the clinical development for the treatment of EGID.

CONCLUSION

Primary EC is becoming more defined for the past decade. However, EC is still rarely reported in Southeast Asia. This could be underdiagnosed due to lacking of awareness among the gastroenterologists or surgeons to perform the colonoscopy with biopsy in chronic diarrhea case. EC should be considered in any patient with a history of chronic abdominal pain, diarrhea, or anemia in combination with the presence of eosinophils in the gastrointestinal tract. All chronic diarrhea cases should be offered colonoscopy with biopsy to rule out EC. Steroid should be considered in adult patient with EC. More effort should be emphasized on randomized controlled trials to assess the effectiveness and safety of pharmacological therapies.

ACKNOWLEDGMENTS

All authors would like to thank the Director of General of Health, Ministry of Health of Malaysia for approving the use of patient data, and image in this publication.

DISCLOSURE

The author reports no conflicts of interest in this work.

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