DOI: 10.34172/mejdd.2022.266

Concurrent Collagenous Gastritis and Collagenous Colitis: A Case Presentation and Review of the Literature

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Received: 10 Jun. 2021
Accepted: 19 Dec. 2021
Publieshed: 30 Jan. 2022

ABSTRACT

Collagenous gastritis is a rare gastrointestinal condition, and its presence with collagenous colitis may be an exception. We describe a 31-year-old man with simultaneous collagenous gastritis and collagenous colitis. The patient initially presented with dyspepsia, anemia, and weight loss. Endoscopy assessment revealed irregular gastric atrophy with the normal colon. Gastric biopsies illustrated increased thickness and subepithelial collagen band.

KEYWORDS:
Stomach; Colon; Collagenous gastritis; Collagenous colitis

Please cite this paper as:
Ziaei H, Boghratian AH, Sohrabi MR, Zare Mehrjardi A, Zamani F. Concurrent Collagenous Gastritis and Collagenous Colitis: A Case Presentation and Review of the Literature. *Middle East J Dig Dis* 2022;**14**:131-135. doi: 10.34172/mejdd.2022.266.

INTRODUCTION

Collagenous gastroenteritides is a complex of inflammatory gastrointestinal phenomena, including collagenous gastritis, collagenous colitis, and collagenous sprue. This issue is a rare condition, which is characterized by subepithelial collagen deposition concomitantly with mucosal inflammatory infiltration.[1] The pathogenesis and reasons for this condition remain unknown. Moreover, the severity of clinical manifestations is closely linked to involved gastrointestinal areas.[2] According to recent reports, the overall incidence of collagenous colitis ranged from 1.1 to 5.2 per 1000 population.[3] With respect to clinical manifestations, a variety of symptoms, from abdominal pain and gastrointestinal bleeding (related to gastritis) and chronic diarrhea (related to colitis), are prominent.[2,4] Moreover, because of the similarity of these symptoms with common gastrointestinal diseases, there is a possibility of diagnostic error in these patients, which can also lead to unpleasant consequences. However, it should be noted that pathologically, sub-epithelial collagen deposits and inflammatory infiltration are the two hallmark signs of these disorders.[5,6]

In spite of proper therapeutic approaches such as histamine H2-receptor antagonists or furazolidone, clinical improvement is not expected in many patients. Additionally, the simultaneous occurrence of both forms of the disease, including colitis and gastritis, is extremely rare.[2,7] Herein, we describe

a case suffering from simultaneous collagenous gastritis and collagenous colitis.

CASE REPORT

A 31-year-old man was referred with the general manifestations of thinness, weight loss, anorexia, and chronic dyspepsia. Because of dyspepsia, he was being treated with pump-proton inhibitors over the years without any evidence of recovery. The patient did not report any other medical history. The clinical examinations were unremarkable. Laboratory assessment included liver function tests (aspartate aminotransferase [AST], alanine transaminase [ALT], and alkaline phosphatase [ALP]), thyroid-stimulating hormone (TSH), erythrocyte sedimentation rate (ESR), C- reactive protein level (CRP), lactate dehydrogenase (LDH), blood urea nitrogen (BUN), and creatinine level. Complete blood count with differentiate (CBC-diff) showed mild anemia with a hemoglobin level of 11.2g/dL, but all other laboratories evaluations were normal. Celiac sprue serology, including anti-tissue Transglutaminase (TTG), and anti-Endomysial antibodies (AEA) were negative. Also, transabdominal ultrasonography and computed tomography (CT) showed no abnormalities.

Because of his dyspepsia and mild anemia, he underwent an upper endoscopy as well as a colonoscopy assessment.

Upper endoscopy revealed narrowing, some probably gastric atrophy zones, as well as gastritis and erosions with nodularity, particularly in the body and antrum (figure 1). Also, the colonoscopy revealed fragile mucosa (figure 2). Several gastric and colon biopsy samples were taken. Histologic evaluation of gastric mucosa revealed chronic gastritis with atrophy and low-grade dysplasia (figure 3), without Helicobacter pylori infection. Moreover, there was no evidence of celiac disease in the assessment of duodenal specimens. In addition, hematoxylin and eosin staining, as well as specific collagen trichrome staining, was performed on gastric and colonic specimens indicating the presence of collagenous gastritis characterized by sub-epithelial collagen deposition with active chronic inflammation (figure 4). In follow-up, the patient was treated with prednisolone (15mg), which led to a partial response after two months. He is followed up regularly.

DISCUSSION

Collagenous gastritis is a very rare condition, and concurrent collagenous gastritis with collagenous colitis is extremely rare. Patients with collagenous gastritis are generally found among children and young subjects. The main complaints are anemia and abdominal pain. So far, there are limited patients described with collagenous gastritis, most of them occurring are in the pediatric population.[2]

Based on the previous case reports, two separate clinicopathologic patterns were defined, including; children and young adults in whom the disease is limited to the gastric mucosa and the main presentation is anemia. And the second group is adult patients who almost present

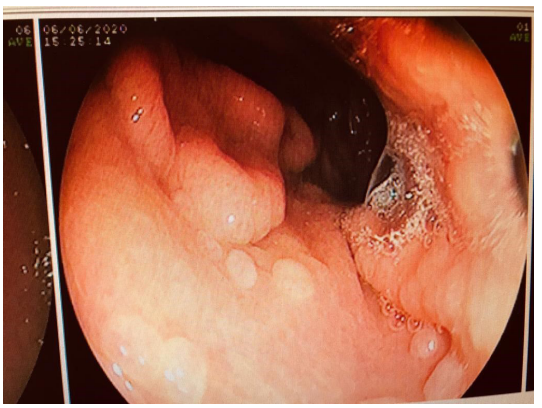

Fig. 1: The findings in endoscopy (narrowing along with polyp-shaped lesions and scattered mucosal atrophy).

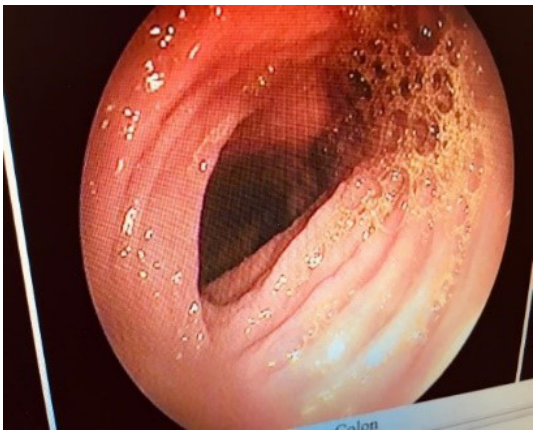

Fig. 2: The findings in colonoscopy (fragile mucosa).

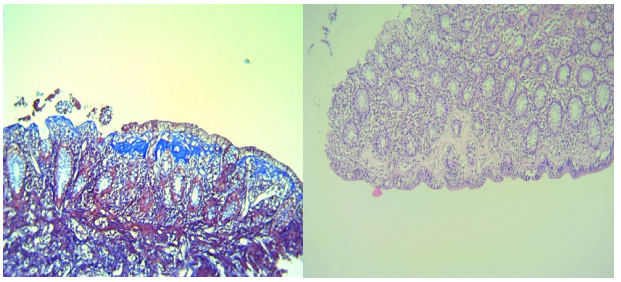

Fig. 3: The histological features of the colon related to collagenous colitis.

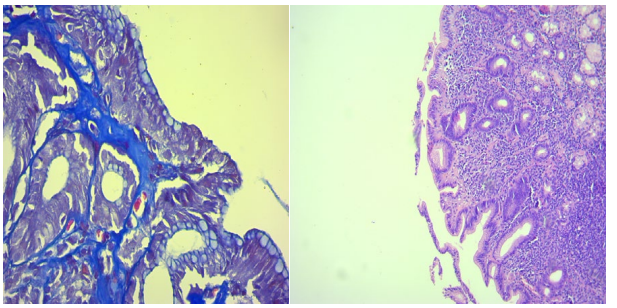

Fig. 4: The histological features of the stomach related to collagenous gastritis.

with chronic diarrhea. In this group of patients, various areas are involved, including the gastric and colonic mucosa; hence patient's presentation depends on the area of the involved gastrointestinal tract.[6,8] Our case is an adult patient complaining of upper and lower gastrointestinal problems whose endoscopic findings are compatible with previous reports.[12,10]

Pulimood and others in 1999 described the first case of concurrent collagenous gastritis with collagenous colitis.[9] The patient presented with gastric and rectal mucosa-involving characteristics with a subepithelial band composed of haphazardly arranged collagen fibers, prominent degranulating eosinophils, and activated pericryptal fibroblasts. The exact pathogenesis of collagenous gastritis is not clear but it can be the same as other types of collagenous disease in the alimentary system.[10,11] Its pathogenesis may be related to chronic inflammation or immune responses to toxic or infectious agents with a proliferation of pericryptal fibroblasts and collagenization that consequently cause deposition of collagen types I and III.[12] In this regard, it is reported that adult collagenous gastritis may be associated with other autoimmune diseases such as lymphocytic gastritis, celiac disease, and Sjogren syndrome.[8,13] Our patient had none of them in our evaluation. Moreover, collagenous gastritis has a female preponderance, affecting all age subgroups.[14]

Although its etiology remains unclear, three prominent pathogenic mechanisms have been identified responsible for collagen deposition, including chronic inflammation, leakage of plasma proteins and fibrinogen, and fibroblast sheath abnormality.[5] Diagnosis of collagenous gastritis is based on histologic evaluation. Although colonoscopy was intact, endoscopy showed mucosal nodularity that is one of the main findings of collagenous gastritis seen in young adults. However, upper endoscopy in adult cases usually shows mucosal erythema, erosions to normal mucosa, and very infrequently nodular mucosa. This presentation may make a misdiagnosis with what can be observed in superficial-type malignant lymphoma of the stomach.[12,15] Mucosal nodularity in collagenous gastritis is almost irregular in size and can be found in the gastric body and antrum.[15] Our findings follow these facts. Collagen deposition, as well as inflammation, are playing a role in gastric nodularity development.

Almost all reported cases with collagenous gastritis with and without collagenous colitis are usually manifested by chronic and resistance anemia (with no response to H2 receptor blockers, antihelminthic treatment, and iron supplements) that might be misdiagnosed with gastrointestinal bleeding and also by weight loss, suggesting probable gastrointestinal malignancies.[12] However, confirming the presence of the histological evidence of subepithelial collagen bands in the gastric and colorectal mucosa along with prominent mucosal eosinophilia and mast cell degranulation can be hallmarks for such definitive diagnosis. Mast cells induce migration and proliferation of fibroblasts and stimulate collagen synthesis.[6]

Regarding Helicobacter pylori infection, we did not observe such infection in gastric biopsies. Our finding is compatible with previous reports. This may emphasize the lack of such a role for this bacterium in the disease.[16]

Besides, collagenous colitis has a multi-factorial feature as the result of an aberrant immune reaction to luminal antigens along with epithelial barrier dysfunction in the mucosa in the background of chronic inflammation.[17] Additionally, reduced $Na^+$and Cl^- absorption and adversely Cl^- secretion justify the occurrence of

chronic diarrhea.[18] In this condition, Helicobacter pylori eradication has led to the resolution of symptoms in some cases.[19] Pathologically, collagen metabolism disturbances mainly due to the change in the expression of some genes such as matrix metalloproteinase groups have been revealed as the main reason for thickened collagen band formation.[20]

In both conditions described, endoscopic assessment followed by biopsy taking and specific staining is the main diagnostic approach, while no reliable diagnostic markers or radiological findings have been found.

There are no specific and approved treatments for the disease, especially in cases with collagenous colitis. In most reports, collagenous gastroenteritides may transform to a chronic persistent pattern with continued inflammation. However, in some cases, complete resolutions have been seen.[21] In this regard, a variety of medications along with dietary regimens have been examined, leading to different therapeutic responses. It seems that the response to such therapeutic approaches may be personalized, requiring further investigation. In our case, the patient was under treatment with steroids that led to a total resolution of symptoms after two months. The dose and duration may need to be personalized according to clinical and histological responses.

ETHICAL APPROVAL

There is nothing to be declared.

CONFLICT OF INTEREST

The authors declare no conflict of interest related to this work.

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