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Two Cases of Crohn's Disease Presenting as Granulomatous Gastritis

Hynd Hedda[1,2], Hasnae Ismaili[2,3], Laila Chbani[2,3], Sidi Adil Ibrahimi[1,2], Hakima Abid[1,2]

[1]Hepato-Gastro-Enterology Department, Hassan II University Hospital of Fez, Fez, Morocco
[2]Faculty of Medicine, Dentistry and Pharmacy of Fez, Sidi Mohamed Ben Abdellah University, Fez, Morocco
[3]Pathology Department, Hassan II University Hospital of Fez, Fez, Morocco
Email: hynd.hedda@usmba.ac.ma

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Abstract

Background: Granulomatous gastritis is an uncommon histological finding characterized by the presence of granulomas in the gastric mucosa. While granulomatous inflammation in the stomach can be attributed to a variety of causes, one rare but possible cause is Crohn's disease. Crohn's disease (CD) is a chronic inflammatory disorder primarily affecting the gastrointestinal tract, typically involving the terminal ileum and colon. However, isolated gastric involvement is rare and can create diagnostic difficulties. Patients with gastric Crohn's disease may present with symptoms like peptic ulcer disease, including epigastric pain, nausea, vomiting, and potential gastric outlet obstruction. Endoscopy may reveal mucosal irregularities, ulcers, and strictures and the histology of Biopsies showing non-caseating granulomas is suggestive, though not pathognomonic, of Crohn's disease. To confirm the diagnosis, other causes such as infection, sarcoidosis, and other potential causes of granulomas should be ruled out. **Aim:** The primary objective of this study is to elucidate the clinical presentation, diagnostic challenges, and management strategies associated with rare cases of granulomatous gastritis as the initial manifestation of Crohn's disease. **Case Presentation:** We report two cases of Crohn's disease initially manifesting as granulomatous gastritis, an uncommon presentation that underscores the need for a thorough differential diagnosis when encountering granulomatous inflammation in the stomach. The clinical presentation of the two patients was not specific (epigastric pain, nausea, and weight loss). The esophagogastroduodenoscopy revealed in the two cases an erythematous and nodular gastric mucosa of the antrum and the fundus. The histopathological analysis demonstrated non-caseating granulomas. The secondary etiologies of granulomatous gastritis were ruled out and an ileo-colonoscopy was performed for the two patients. The two patients were initially treated with corticosteroids, to which they exhibited a primary response, and were

subsequently placed on maintenance therapy. **Conclusion:** Gastric Crohn's disease, while rare, is an established clinical and pathological entity. Isolated granulomatous gastritis can serve as an initial indicator of Crohn's disease; however, it alone is insufficient for a definitive diagnosis. A presumptive clinical diagnosis becomes more reliable when typical lesions are identified in the ileum or colon, supported by radiologic and endoscopic evaluations. Importantly, as demonstrated in our patients, histological confirmation via endoscopic biopsy can solidify the diagnosis.

Subject Areas

Gastroenterology, Hepatology

Keywords

Crohn's Disease, Granulomatous Gastritis, Corticosteroids, Infliximab

1. Introduction

Crohn's disease (CD) is a diverse condition with a complex etiology that involves genetic influences, environmental factors, and gut microbiota. It is characterized by chronic, segmental, and transmural inflammation that can impact any part of the gastrointestinal tract, ranging from the oral cavity to the anus [1].

The advancements in digestive endoscopy over recent decades have significantly enhanced the ability to detect lesions in the esophagus, stomach, and duodenum. In the past, such evaluations relied primarily on radiological studies or surgical specimens. Despite substantial progress in understanding Crohn's disease (CD), experiences with upper gastrointestinal tract involvement remain limited, even though this involvement is a predictor of recurrence and the potential progression to complications [2].

The prevalence of lesions in the upper gastrointestinal tract (UGT) among symptomatic patients ranges from 0.5% to 5%. However, more recent observational studies indicate a greater frequency of endoscopic and histological changes when upper gastrointestinal endoscopy (UDE) is conducted routinely as part of disease evaluation, regardless of the presence of gastrointestinal symptoms [3].

Although the upper gastrointestinal tract (UGT) is recognized as a disease modifier, there is currently no objective definition for the endoscopic and histological criteria required to properly characterize its involvement in Crohn's disease (CD) [3].

The ECCO guideline recommends that the diagnosis of CD of the UGI must be confirmed by integrating clinical, endoscopic, histological, radiological and/or biochemical findings [4].

2. Case Reports

2.1. Case 1

A 31-year-old woman presented with epigastric pain, nausea, and unintentional

weight loss over six months. Initial lab test doesn't show any anemia or iron deficiency; all the lab tests were normal. An abdominal tomography was performed initially and has shown symmetrical circumferential thickening of the antrum gastric wall with increased vascularization and lymphadenopathy in the lesser curvature and celiomesenteric region. An esophagogastroduodenoscopy (EGD) revealed erythematous, nodular gastric mucosa of the antrum and the fundus, and histopathological analysis demonstrated non-caseating granulomas of the fundus and antrum mucosa consistent with granulomatous gastritis (Figure 1 and Figure 2). Initial tests ruled out infectious causes such as tuberculosis and sarcoidosis (Table 1). Further evaluation, including colonoscopy, revealed skip lesions and cobblestone mucosa in the terminal ileum, confirming Crohn's disease. The patient was successfully treated with corticosteroids and azathioprine, leading to symptomatic relief and improved endoscopic findings. However, following the cessation of corticosteroid therapy, she returned with a recurrence of her initial symptoms; endoscopy revealed similar findings to those seen previously. In response to this relapse, and due to digestive intolerance to azathioprine, infliximab was initiated at a dose of 5 mg/kg Week 0, week 2 and Week 6 and every 8 weeks as a maintenance therapy. This treatment led to favorable clinical and biological outcomes, with significant improvement in her symptoms and endoscopic appearance.

Table 1. Differential diagnosis of gastric CD ruled out by diagnostic tests.

Differential Diagnosis	Key Features	Diagnostic Tests
Tuberculosis	History of exposure, systemic symptoms, weight loss	GeneXpert of the gastric biopsy
Sarcoidosis	Systemic granulomatous disease,	Serum angiotensin-converting enzyme (ACE) levels, chest X-ray
Foreign Body Reaction	Recent ingestion of foreign material	Imaging studies, endoscopic evaluation
Malignancy	Weight loss, persistent bleeding, unusual masses	Endoscopic biopsy, imaging studies

2.2. Case 2

A 21-year-old female presented with persistent dyspepsia, abdominal pain and vomiting. Her medical history was unremarkable, and she was not on any medications. Initial laboratory tests showed no evidence of anemia or electrolyte imbalances. Imaging studies revealed regular thickening of the gastric wall, measuring 14 mm in the antro-fundic region, but without features suggesting malignancy. EGD showed diffuse gastric inflammation with multiple ulcerations of the antrum. Biopsies revealed non-caseating granulomas of the antrum mucosa, raising suspicion for granulomatous gastritis. Extensive testing excluded infections, vasculitis, and malignancy. Colonoscopy demonstrated inflammatory changes in the ileum, confirming the diagnosis of Crohn's disease. The patient responded well to corticosteroids therapy and immunosuppressive therapy type azathioprine with a 2mg/Kg/day as a maintenance therapy and to cover the ileum disease. There

was a significant clinical and histological improvement in the short and long term. Now we are at the 4 years of the diagnosis, the patient is doing well clinically, laboratory tests are reassuring and endoscopic follow-up showed a regression of gastric lesions, and an SES-CD at the ileo-colonoscopy of 0.

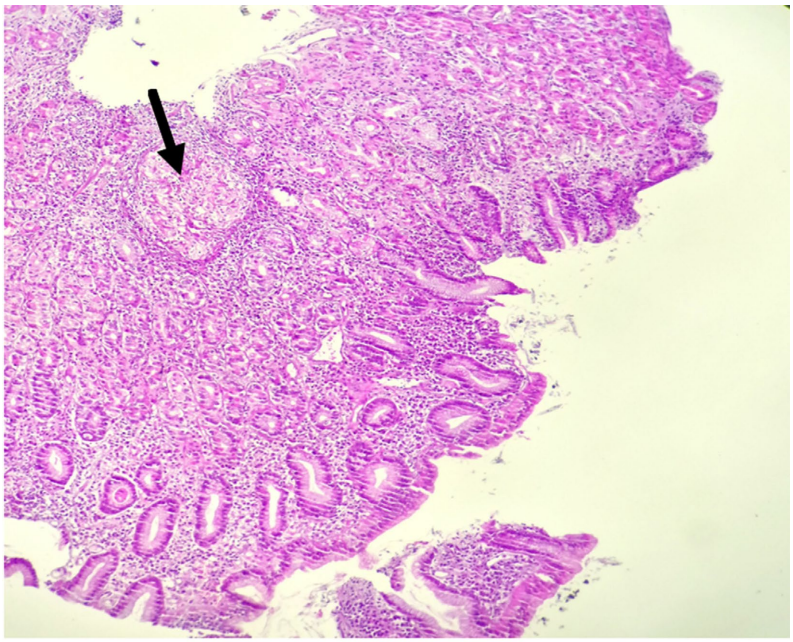

Figure 1. Mild chronic gastritis of the fundus with epithelioid granulomas (black arrow) (HES ×100).

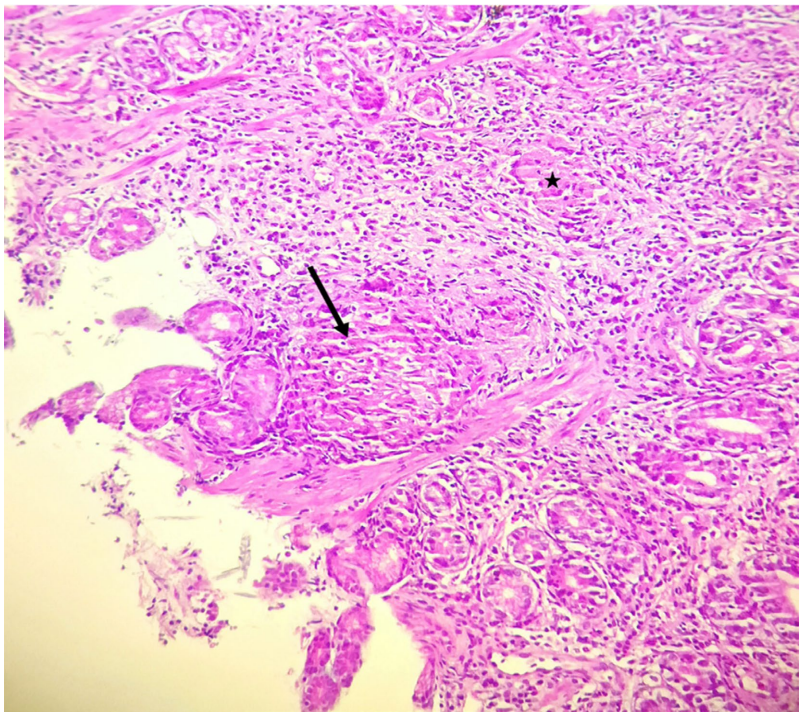

Figure 2. Mild chronic gastritis of the antrum with epithelioid granulomas (black arrow) and giant cells (black star) (HES ×200).

3. Discussion

Between 0.5% and 4% of patients with Crohn's disease exhibit clinical signs of gastritis or gastropathy [5]-[7]. However, when gastric biopsies are performed systematically, at least half of Crohn's disease patients (ranging from 24% to 83%, depending on the study) present with microscopic inflammatory lesions, with these lesions being even more common in the pediatric population.

Clinical signs of gastric involvement in inflammatory bowel disease (IBD) are nonspecific. Patients may be asymptomatic or may present with clinical manifestations such as epigastric pain, abdominal discomfort, gastric heaviness, nausea, vomiting, bloating, occult bleeding, or iron deficiency anemia [7] [8].

The endoscopic appearance is often nonspecific, showing edematous and erythematous gastric mucosa, sometimes with hypertrophic folds, erosions, or ulcerations. Complications are rare but may include strictures, while fistulas and perforations are exceptional and are more commonly caused by adhesions from inflamed ileocolic segments [6] [7] [9]. Endoscopic lesions are most frequently seen in the antrum in gastric CD [10].

Histological findings of gastric Crohn's disease resemble those of distal Crohn's disease. The most used histological marker for diagnosis is the presence of noncaseating granulomas, observed in only 9% of cases. Acute inflammation is generally detected, with an incidence rate of 56% [10] [11]. Nonspecific, noncaseating granulomatous inflammation of the stomach has been classified into three main clinical types by Fahimi *et al.*, based on the presence or absence of identifiable granulomatous disease in other organs. This condition can be associated with Crohn's disease or disseminated sarcoidosis, or it may occur as an entirely isolated finding. In the latter cases, granulomatous gastritis could represent the initial manifestation of Crohn's disease. However, a definitive diagnosis requires the demonstration of the classic form of the disease in either the large or small intestine.

The literature lacks controlled studies evaluating the effects of drugs available for the treatment of CD in the UGT, so treatment is based on the concomitant activity of the distal disease and clinical experience [6]. Excellent responses to steroid therapy are well-documented. Immunomodulators such as 6-mercaptopurine and azathioprine are utilized to maintain corticosteroid remission in patients who are dependent on corticosteroids or symptomatic, despite ongoing corticosteroid treatment [12] [13]. The literature has documented the use of infliximab for treating gastroduodenal Crohn's disease, particularly in complicated cases such as refractory duodenal ulcers, duodenal strictures, and pancreaticoduodenal fistulas, demonstrating favorable outcomes [14] [15]. The ACCENT I study included 43 subjects with gastroduodenal Crohn's disease out of a total of 573 participants (8%), with 2 patients (56%) showing a response to treatment by week 2 [16]. Additionally, adalimumab is another treatment option that has shown satisfactory responses in severe cases with complications, as reported in several case studies [17] [18].

Based on the results, it is concluded that in cases of atypical presentation of isolated gastric Crohn's disease, where clinical, endoscopic, and laboratory findings are inconclusive (including negative ASCA and negative urease breath test), diagnosis becomes a significant challenge. The efforts should be diverted to confirm the diagnosis by excluding other causes and based on histologic findings and clinical response to steroids.

4. Conclusion

Gastric Crohn's disease is a rare but well-recognized clinical and pathological condition. Although isolated granulomatous gastritis has been reported as an initial manifestation of Crohn's disease, it is not sufficient to diagnose the condition solely on this basis. In gastric involvement, the antrum is most frequently affected, with radiologic features typically showing narrowing, rigidity, mucosal pattern alterations, ulceration, and pronounced hypomotility. Duodenal involvement often occurs simultaneously. When typical ileal or colonic lesions are present, a presumptive clinical diagnosis can be confidently made based on radiologic and endoscopic findings. In some cases, as observed in our patients, the diagnosis can be confirmed histologically through endoscopic biopsy. Short-term follow-up suggests that gastric involvement does not necessarily indicate a worse prognosis.

Conflicts of Interest

The authors declare no conflicts of interest.

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