BJCR
Brazilian Journal of Case Reports

PCAA
Publicações Científicas de Acesso Aberto

Case Report

Crohn's Disease with Gastric Involvement: A Case Report

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Abstract: Inflammatory bowel disease (IBD) encompasses acute or chronic inflammatory processes affecting the gastrointestinal tract, primarily comprising Crohn's disease (CD) and ulcerative colitis (UC). CD is a transmural and recurrent condition that can affect any segment of the gastrointestinal tract, with gastric involvement being rare, occurring in less than 5% of cases. This report aims to describe a rare case of Crohn's disease with exclusive gastric manifestation, highlighting the diagnostic challenges and therapeutic strategies employed. A comprehensive clinical and laboratory investigation was conducted, including outpatient interview, laboratory tests, upper gastrointestinal endoscopy, and computed tomography. The findings were analyzed to rule out other diseases with similar symptoms. The diagnosis of Crohn's disease confined to the stomach was confirmed in a patient whose only complaint was nausea. The treatment was managed clinically and pharmacologically, with no indication for surgical intervention. During follow-up, up to the time of this report, the patient remained free of relapses or complications. Therefore, gastric Crohn's disease is a rare and diagnostically challenging condition that requires a multidisciplinary approach to exclude other pathologies. Appropriate clinical management allowed disease control and the avoidance of complications, underscoring the importance of early diagnosis and continuous follow-up.

Keywords: Crohn's Disease; Gastropathies; Inflammatory Bowel Diseases; Case Reports.

Citation: Melo AGAC, Loureiro AG, da Silva JLN, Marinho LB, Bastos DAO. Crohn's Disease with Gastric Involvement: A Case Report. Brazilian Journal of Case Reports. 2025 Jan-Dec;05(1):bjcr78.

https://doi.org/10.52600/2763-583X.bjcr.2025.5.1.bjcr78

Received: 13 February 2025
Accepted: 23 March 2025
Published: 2 April 2025

1. Introduction

Inflammatory bowel disease (IBD) is considered an acute or chronic inflammatory process that affects the gastrointestinal tract (GIT) [1], characterized by immune-mediated exacerbations impacting any region of the intestine, alternating with periods of remission [2]. Therefore, it is a condition of public health importance, given its strong propensity for the development of gastrointestinal neoplasms. IBD is characterized by Crohn's disease (CD) and ulcerative colitis (UC), which share risk factors, symptomatology, epidemiology, and possibly etiology [3]. The main difference between them lies in UC being restricted to the mucosa of the colon and rectum [4].

CD is a transmural, recurrent inflammatory condition that can affect the entire gastrointestinal tract, from the oral cavity to the anus, with a higher prevalence in the terminal portion of the small intestine (ileum) and the colon [5]. Gastric involvement, however, is considered rare, occurring in less than 5% of diagnosed cases [6]. Its epidemiology includes both adults and children, regardless of sex; however, there is a higher prevalence among women aged between 15 and 40 years. CD is described as a multifactorial disease involving genetic and immunological factors, contact with antigens (viruses, bacteria), smoking, lifestyle, and diet. Nonetheless, its etiology remains unknown and requires further investigation [7].

Patients with Crohn's disease typically present with the clinical triad of weight loss, diarrhea, and crampy abdominal pain with difficulty passing gas. These symptoms may or may not be accompanied by others such as fever, abdominal distension, and extraintestinal manifestations [8]. The inflammatory process accounts for the diarrheal episodes, with or without mucus and/or blood in the stool. Detailed anamnesis is essential to elucidate and rule out differential diagnoses, as several diseases present with similar symptoms, including spirochetosis, ulcerative colitis, colitis, post-infectious inflammatory bowel syndrome, among others. Moreover, diagnostic uncertainty increases when extraintestinal symptoms are observed, complicating the investigation [9]. These manifestations are directly related to the intensity of intestinal inflammation and may affect various body systems, including erythema nodosum, arthritis, ankylosing spondylitis, uveitis, conjunctivitis, sclerosing cholangitis, and sacroiliitis [10].

The need to control disease activity at early stages and identify effective therapies has led to the adoption of a treat-to-target strategy in the management of IBD. This approach consists of establishing a mutually agreed treatment goal between patient and physician, selecting initial therapies based on disease severity and risk profile, evaluating progress after a predefined period, and adjusting therapy to achieve the target [11]. Finally, the importance of continuous screening for gastrointestinal tract neoplasms in patients with Crohn's disease is emphasized, given the increased risk for developing such complications [12].

2. Case Report

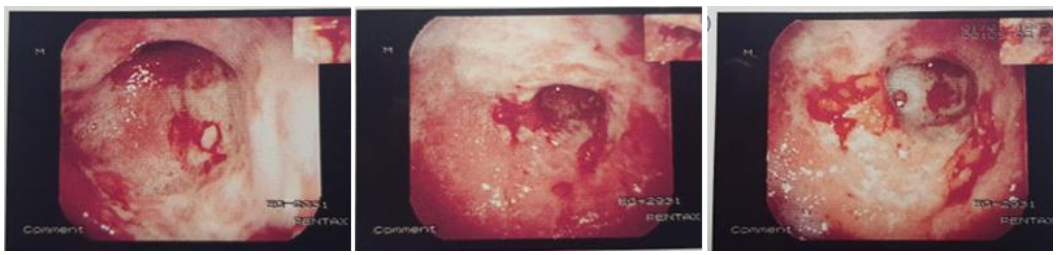
2.1 Medical History

A 59-year-old female patient from Tucuruí, Pará, presented to a private gastroenterology outpatient clinic in Belém, Pará, on May 31, 2021, complaining of nausea since February of the same year. She denied the abdominal pain. The patient reported having undergone imaging tests and completed an initial treatment regimen for Helicobacter pylori. Physical examination revealed no significant findings.

2.2 Complementary Examinations

The patient underwent an upper gastrointestinal endoscopy (EGD) on March 15, 2021, which revealed elevated gastric areas. Histopathological analysis showed absence of Helicobacter pylori and the presence of a lymphoproliferative lesion. Subsequently, a second EGD performed on May 20, 2021, revealed a diffuse infiltrative gastric lesion involving the distal body, angular incisura, and antrum (Figure 1).

Figure 1. Diffuse ulcerative-infiltrative lesion in the gastric body observed before treatment, visualized by upper gastrointestinal endoscopy on May 20, 2021. The lesion was completely resolved after three months of pharmacological therapy, as shown in Figure 2.



Several biopsies were performed, and the findings were suggestive of advanced gastric neoplasia. However, histopathological examination showed *H. pylori* negativity, fragments of gastric mucosa with extensive mixed ulcerative inflammatory infiltrate with epithelial activity, as well as frequent areas of incomplete intestinal metaplasia, but no evi-

dence of carcinoma in the sample. Immunohistochemical analysis revealed extensive ulcerative inflammatory gastropathy, with a predominance of inflammatory infiltrate composed of plasma cells and eosinophils, without diagnostic criteria for carcinoma, gastrointestinal stromal tumor (GIST), or sarcoma in this sample (Table 1).

Table 1. Immunohistochemistry report performed on June 9, 2021, with the panel of antibodies present in the gastric biopsy. It reveals extensive ulcerative inflammatory gastropathy, with a predominance of inflammatory infiltrate with plasma cells and eosinophils, and no diagnostic criteria for carcinoma, GIST, or sarcoma.

Antibody	Clone	Interpretation
CD3	2CV6	Positive in T cells (predominant population)
CD4	SP35	Positive in T cells (predominant population)
CD2	AB75	Positive in T cells (predominant population)
CD8	C8/144B	Loss of expression in T cells
CD7	CBC.37	Loss of expression in T cells
CD20	L26	Positive in B cells (aggregates)
CD23	SP23	Positive in follicular dendritic cells

Abdominal computed tomography (CT) performed on April 8, 2021, showed a liver with normal patterns, a left adrenal nodule measuring 1.9 cm, and a left renal cyst measuring 1.4 cm. Chest CT, performed on the same day, revealed a nodule in the left parathyroid gland measuring 2.1 cm and a small pulmonary nodule of 4 mm. PET-CT, performed on April 22, 2021, revealed thickening of the gastric wall in the body and antrum regions, with significant uptake (SUV 15.4).

The complete blood count (CBC) from May 19, 2021, showed hemoglobin of 13 g/dL, leukocytes at 8,320/mm^3, platelets at 340,000/mm^3, and liver function tests within normal limits. Tumor markers such as CEA, AFP, and CA 19-9 were negative. Continuing the investigation, laboratory tests were ordered to assess for possible food allergies, fecal calprotectin, and lactose intolerance. The patient returned to the clinic on June 28, 2021, with the following results: CBC from June 9, 2021, with hemoglobin at 13 g/dL, leukocytes at 8,320/mm^3, platelets at 340,000/mm^3, normal liver function tests, urea and creatinine within standard levels, elevated fecal calprotectin (350 mg/kg), gliadin IgA 1U, total IgE 168U, IgA 168U, IgG 1,114U, lactose intolerance test with values of 89/100/92 mg/dL, and normal ANCA and ASCA.

Based on these findings, the diagnosis of lactose intolerance was established. To complement the investigation, colonoscopy with histopathological and immunohistochemical studies was requested. On August 24, 2021, the patient returned to the clinic with the colonoscopy report performed on July 6, 2021, which described anal plicoma, internal hemorrhoids, a rectal polyp, rectal polypectomy, and erosion in the cecum. Biopsy revealed a hyperplastic inflammatory polyp and mild colitis with no criteria for Crohn's disease. Immunohistochemistry showed mild, nonspecific chronic colitis with an eosinophilic component, presence of lymphoid aggregates in the lamina propria, no histological signs of inflammatory activity, and absence of epithelioid granulomas, cryptitis, or crypt abscesses.

2.3 Diagnosis

Because gastric Crohn's disease presents with nonspecific clinical findings, procedures such as endoscopy, histopathology, and immunohistochemistry are essential to differentiate it from other possible diagnoses such as gastric lymphoma, GIST, eosinophilic gastroenteritis, among others. As the EGD did not reveal classic signs of Crohn's disease—such as aphthous ulcers, cobblestone mucosa, or fissures—the diagnosis of infiltrative gastric Crohn's disease was established based on the immunohistochemistry results from May 2021, along with the presence of ileal erosion (without Crohn's disease criteria) and intestinal constipation.

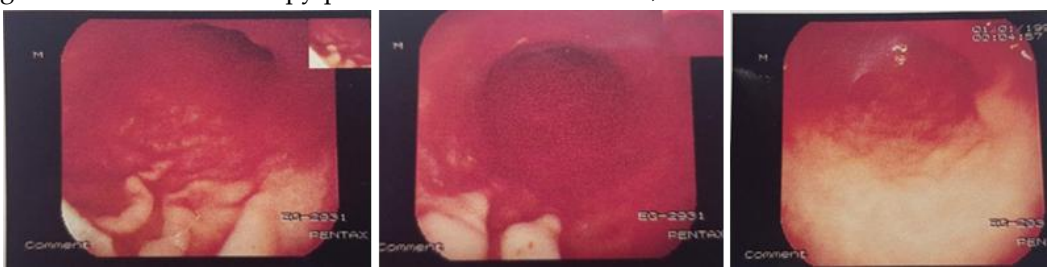
2.4 Management

Treatment was initiated with mesalazine 1 g, four times a day; prednisone 40 mg, two tablets in the morning on an empty stomach for 10 days, followed by 1.5 tablets for 10 days, then 1 tablet for 10 days, and continuing with 2 tablets of 5 mg until follow-up; lactulose syrup for 30 days; lactase 10,000 IU; and pantoprazole 40 mg, one capsule on an empty stomach for 30 days.

2.5 Outcome

After approximately three months of treatment, the patient returned to the clinic asymptomatic and underwent an updated EGD on November 23, 2021. The procedure demonstrated normal gastric findings, with no signs of the diffuse infiltrative gastric lesion observed in May of the same year (Figure 2). Histopathological analysis showed moderate chronic erosive gastritis of the antrum with extensive complete intestinal metaplasia, negative for *H. pylori*, presence of focal microabscesses, and no evidence of neoplasia in the sample.

Figure 2. Gastric body region, after three months of pharmacological therapy, showing no evidence of the previous diffuse ulcerative inflammatory lesion, as visualized in upper gastrointestinal endoscopy performed on November 23, 2021.



3. Discussion

The clinical presentation of Crohn's disease (CD) can be categorized as inflammatory, fistulizing, or fibrostenotic [6]. Gastric Crohn's disease is known for its plural and complex clinical manifestations, making its diagnosis primarily one of exclusion—distinguishing it from other inflammatory and/or neoplastic processes that present with similar signs, symptoms, and endoscopic findings. In this context, it is essential to complement the clinical examination with laboratory and imaging tests to better characterize the disease and compare it with other pathologies (Table 2). Recommended tests include complete blood count (with focus on hematocrit), C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), stool parasitological examination, anti-Saccharomyces cerevisiae antibodies (ASCA), and anti-neutrophil cytoplasmic antibodies (ANCA). These antibody tests help distinguish Crohn's disease from a possible diagnosis of ulcerative colitis [13], while stool parasitology serves to differentiate infectious and parasitic diseases.

Table 2. Comparative analysis between gastric Crohn's disease and its possible differential diagnoses.

	Crohn's Disease	**Gastric Lymphoma**	**GIST (Gastrointestinal Stromal Tumor)**	**Eosinophilic Gastroenteritis**
Clinical Presentation	Abdominal pain, weight loss, malabsorption syndrome	Abdominal pain, diarrhea, night sweats, weight loss	Abdominal pain and mass, weight loss, dysphagia	Abdominal pain, bloody diarrhea, weight loss, fatigue
Endoscopy	Inflamed and infiltrated lesions, ulcers, stenosis, granulomas	Erythematous lesions, polyps, erosions, ulcerations	Rounded, firm lesion covered by normal-appearing mucosa	Bleeding areas, pseudopolyps, stenosis, infiltrative lesions
Histopathology	Transmural, segmental infiltration with lymphocytes, plasma cells, and non-caseating granulomas	Lymphocytic infiltration, lymphoepithelial lesions, marginal zone growth	Spindle cell, epithelioid, or mixed lesion with eosinophilic cells	Eosinophilic infiltration, crypt hyperplasia, abscesses, villous atrophy
Immunohistochemistry	CD68, CD3, CD4, CD8, CD20, TNF-α	CD20, CD79a, CD5, CD10, Ki67, BCL2	CD117 (c-kit), CD34, DOG1, ANO1	MPO, ECP, CD3, CD4, CD8, IgE
Treatment	Corticosteroids, NSAIDs, immunosuppressants	H. pylori eradication, chemotherapy, surgical resection	Surgical resection, chemotherapy	Restricted diet, corticosteroids, immunosuppressants

To obtain a diagnosis through imaging evaluation, several tests can be used due to the extensive involvement characteristic of the disease. In general, endoscopic and histopathological visualization are essential tools in the investigation, in addition to the possibility of using radiological studies targeting specific anatomical portions of the gastrointestinal tract. Regarding radiographic tests, barium studies, computed tomography (CT), and magnetic resonance imaging (MRI) are utilized. In barium studies, it is possible to observe the separation of intestinal loops due to inflammation, as well as strictures and fistulas, making this type of test valuable in the diagnostic process [14].

CT can identify transmural inflammation in the intestines, in addition to abscesses and retroperitoneal disease. Modern imaging modalities such as computed tomography enterography (CTE) and magnetic resonance enterography (MRE) are also employed in the imaging diagnosis of Crohn's disease [14]. Endoscopy allows visualization of the esophagus, stomach, and duodenum (enteroscopy can reach the distal duodenum and jejunum), enabling diagnosis of rarer presentations of the disease. In contrast, colonoscopy provides important visualization of the intestines, with the terminal ileum being the most commonly affected segment due to the disease's inflammatory nature [15].

Crohn's disease generally presents histopathological features similar to those of ulcerative colitis. However, granulomas are considered a likely and pathognomonic finding in CD, even though they are present in only 50% of cases, and their absence does not exclude the diagnosis. Additionally, CD typically preserves goblet cells and mucin, which pathologically distinguishes it from ulcerative colitis [6]. Fecal calprotectin is a biomarker used to detect intestinal inflammation and is widely used in the diagnosis and monitoring of inflammatory bowel diseases such as CD and ulcerative colitis. It is a calcium-binding

protein with antiproliferative, antimicrobial, and pro-inflammatory properties. Its concentration in stool directly reflects the presence of neutrophils in the intestinal lumen, making it a relevant biomarker for the detection of inflammation in IBD in clinical practice [16].

In the specific case of isolated gastric CD, there is limited information available in the medical literature. To date, no robust studies have demonstrated a clear relationship between fecal calprotectin levels and inflammatory activity in this form of the disease. Nevertheless, when elevated fecal calprotectin levels are observed in patients with isolated gastric CD, it is important to consider that the alteration may be associated with inflammation in other parts of the gastrointestinal tract or due to other causes contributing to the biomarker's elevation. In this case, the diagnosis was confirmed through exams that ruled out differential diagnoses, along with findings compatible with Crohn's disease, including endoscopy, histological, and immunohistochemical evaluations.

In regard to the immunohistochemical findings, the loss of CD7 and CD8 expression in T cells suggests little association with tumor cells or cytotoxic proteins, supporting a diagnosis of CD rather than neoplasia or celiac disease [17]. The positive expressions of CD3, CD4, and CD2 in T cells, CD20 in B cells, and CD23 in follicular dendritic cells are findings that correlate with Crohn's disease, given that immunologically the condition is characterized by increased dendritic cells and macrophages. These macrophages, present in affected tissues, are phenotypically heterogeneous differentiating them from healthy tissue. Furthermore, dendritic cells, which are responsible for innate immunity, regulate and trigger the mucosal inflammatory response and induce the production of inflammatory cytokines. The findings in T and B cells are consistent with the literature, which identifies both humoral and cellular immune responses in CD, with a predominance of Th1-patterned immune cells [18].

Treatment is complex and involves both clinical and surgical approaches. Clinical treatment includes the use of aminosalicylates, corticosteroids, immunosuppressants, and antibiotics aimed at inducing and maintaining remission. It is also important to avoid the use of NSAIDs and to cease smoking due to the associated risk of exacerbation. Surgical intervention is indicated in the presence of strictures, complications, or medication-refractory disease. Additionally, implementing psychological therapies is essential to improve the patient's quality of life [7].

In refractory cases or when conventional therapy fails, the use of biological agents has proven to be an effective alternative. Medications such as TNF-α inhibitors (Infliximab, Adalimumab) [19, 20], integrin inhibitors (Vedolizumab) [21], and IL-12/23 pathway inhibitors (Ustekinumab) [22] are recommended options for patients who do not respond adequately to initial treatments. The choice of biological therapy should consider the patient's profile, recurrence history, and potential comorbidities, aiming to optimize remission and minimize long-term complications.

In this case, since the patient was not present with obstructive or fistulizing complications, surgical treatment was not necessary. Moreover, the prescribed medications were well-tolerated and effective, as confirmed in the follow-up endoscopy. When evaluated using the Simple Endoscopic Score for Crohn's Disease (SES-CD), which includes four variables—ulcer size, ulcerated surface, affected surface, and stenosis—the score was 0 (zero), indicating clinical remission, which was consistent with the patient's overall condition.

Despite the resolution of the active lesion, maintenance therapy must be considered to prevent recurrence. The use of immunomodulators or biological agents is recommended for patients who achieve clinical remission [23, 24]. In the reported case, it was decided to continue Mesalazine. Continuous follow-up with clinical and laboratory evaluation will be essential to ensure long-term disease stability.

4. Conclusion

Crohn's disease is a frequently studied pathology, with its many nuances and individualities. In the case reported, the patient showed unusual symptoms of the disease,

due to exclusively gastric involvement. To elucidate the patient's diagnosis, appropriately requested imaging and laboratory tests, in addition to a holistic clinical analysis, were crucial for the initiation and follow-up of the patient's treatment. Finally, early diagnosis and individualization of the patient's case provided the demonstrated follow-up, with the outcome of gastric normality and a better quality of life, which may contribute to other similar cases a posteriori.

Funding: None.

Research Ethics Committee Approval: We declare that the patient approved the study by signing an informed consent form and the study followed the ethical guidelines established by the Declaration of Helsinki.

Acknowledgments: We thank everyone who contributed to the development of this case report on gastric Crohn's disease. In particular, we express our gratitude to the patient for the generosity in sharing their case, and to the healthcare team for their commitment to the diagnosis and treatment. We also thank our advisor, Dr. Dauana Arruda de Oliveira Bastos, for her technical and intellectual support, which was essential to this study. Finally, we are grateful to the academic institution and those responsible for providing the resources that made this research possible.

Conflicts of Interest: The authors declare no conflicts of interest.

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