Ileitis due to *Yersinia* as a Differential Diagnosis of Crohn's Disease.

Case report

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ABSTRACT

This report describes a case of ileitis caused by *Yersinia sp.* in a hospitalized patient who presented with severe abdominal pain in the right flank and iliac fossa, and chronic diarrhea. The initial hypothesis was Crohn's disease. Diseases that affect the intestine can be grouped under Inflammatory Bowel Disease (IBD), which refers to an inflammatory process that affects the gastrointestinal tract (with autoimmune characteristics). Crohn's disease (CD) and Ulcerative colitis (UC) account for about 80-90% of the causes. Other types of pathology, such as Behçet's disease, eosinophilic enterocolitis, and microscopic colitis (lymphocytic or collagenous), can also be causes, but they are much rarer than CD and UC. This case report is about a 23-year-old patient, admitted to a hospital in the city of Anápolis, GO, who presented with active ileitis, diarrhea, and enterorrhagia, asthenia, and weight loss. After extensive investigation—laboratory tests, echocardiogram, abdominal CT scan, and colonoscopy with lymph node biopsy—the patient was diagnosed with *Yersinia sp.* infection. He was treated with antibiotics and discharged (after outpatient treatment) with an excellent response to treatment.

Keywords: Ileitis; Crohn's disease; Yersinia sp.

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RESUMO

Descreve-se um caso de ileíte por *Yersinia sp.* em um paciente hospitalizado devido a intensa dor abdominal em flanco e fossa iliaca direita associado a diarreia crônica. A hipótese diagnóstica inicial era de doença de Crohn. As afecções que acometem o intestino são agrupadas como Doença Inflamatória Intestinal (DII), a qual refere-se a processo inflamatório que acomete o trato gastrointestinal (com características de autoimunidade), sendo que a doença de Crohn (DC) e a Retocolite ulcerativa (RCU) representam cerca de 80-90% das causas. Outros tipos de patologia como a doença de Behçet, enterocolite eosinofílica e colite microscópica (linfocítica ou colágena) podem também ser causas, mas são bem mais raras que a DC e a RCU. Este relato de caso é sobre um paciente de 23 anos, internado em um Hospital da cidade de Anápolis-GO, com quadro clínico de ileíte em atividade, com diarreia e enterorrhagia, astenia e perda ponderal. O paciente, depois de ampla investigação (exames laboratoriais, ecocardiograma, tomografia de abdome e colonoscopia com biopsia de linfonodo) foi diagnosticado com infecção por *Yersinia sp.*, sendo tratado com antibioticoterapia e recebendo alta (após tratamento ambulatorial) com excelente resposta ao tratamento.

**Palavras-chave:** Ileíte; Doença de Crohn; Yersinia sp.
INTRODUCTION

The term ileitis, used to refer to inflammation predominantly in the distal ileum but also in areas of the small and large intestines and other areas of the digestive tract, was first identified as a disease in 1932 by Dr. Burrill B. Crohn. Besides ileitis, another condition related to the case presented here is lymphadenitis, a term that denotes inflammation of the lymph nodes, usually due to a viral or bacterial infectious condition. Among the conditions that affect the intestine grouped under IBD, the most well-known is Crohn's disease (CD), overshadowing other causes of ileitis and lymphadenitis. One of the differential diagnoses for CD should be infectious ileitis, which must be promptly recognized and treated, as it is a curable and more manageable cause. In this context, young people between the ages of 20 and 40 are more prone to develop ileitis, and it is more common in men. It usually occurs in inhabitants of large cities and is half as common in the rural population. Investigations in the field of Gastroenterology have found that right iliac fossa pain, in 70% of cases, is a sign of ileitis, being an important differential diagnosis from acute appendicitis.

A correct diagnosis is important for promoting appropriate therapeutic management. Salmonella, Staphylococcus, Escherichia coli, and acute viral ileitis can be causes of the disease, as well as rotavirus, enterovirus, and giardiasis. There may also be acute forms (mainly infectious) and chronic forms (such as Crohn's disease). Some common factors that can contribute to both acute and chronic ileitis are allergic reactions, smoking, alcohol, a diet rich in oily foods, and intoxications.

Ileitis can appear gradually, with symptoms of mild to moderate severity, or even in a more acute and severe form. Patients usually start complaining of moderate pain in the right iliac fossa and flank region. Symptoms such as local swelling, watery exudative diarrhea, and lack of relief after defecation are common at the onset of the disease. Defecation not only does not bring relief but can increase the pain. Due to poor absorption of nutrients, vitamins, and minerals, there may be gradual weight loss, vitamin deficiency, osteoporosis, and other complications caused by malabsorption. Regarding the treatment of infectious ileitis, it should be based on the use of antibiotics, while chronic infection like CD requires more detailed treatment and follow-up with a specialist, as it may require the use of corticosteroid therapy, immunomodulators, and even immunobiologics (anti-TNF, anti-integrin, anti-interleukin, etc.). Therefore, this study aims to report the case of a young patient with Yersinia sp. ileitis, demonstrating the importance of the differential diagnosis of infectious ileitis with Crohn's disease.

Case Report

Patient W. S. R., male, 23 years old, white, married, a supermarket packer, was admitted to the Emergency Department reporting daily episodes of severe colicky abdominal pain in the right iliac fossa and flank, enterorrhagia, more than eight bowel movements per day associated with asthenia, general malaise, with no improvement after defecation. He reported the onset of diarrhea twenty days prior, accompanied by a five-kilogram weight loss. He reported progressive worsening of the abdominal pain associated with bloody diarrhea, sought hospital care, where he was medicated in the Emergency Department and discharged after one day of hospitalization. He was advised to follow up with a gastroenterologist. He denied fever, vomiting, cough, and allergies. The patient was lucid, oriented, acyanotic, and anicteric, with normal lung auscultation and cardiovascular examination. On abdominal examination, he had pain on deep palpation in the right iliac fossa, without signs of peritoneal irritation. Blood was observed on the
glove finger during rectal examination (RE), without evidence of a mass on the posterior and anterior walls. Laboratory tests, echocardiogram, total abdominal computed tomography (CT) scan with intravenous contrast, and hospitalization in the institution's ward were requested. The examinations revealed thickening of the ileal wall with local inflammatory signs, as well as lymphadenitis with clusters of lymph nodes showing necrotic signs, according to Figure 1.

FIGURE 1: Abdominal computed tomography scan with contrast showing ileal thickening

Source: Personal archive (2023).

After hospitalization, a gastroenterology consultation was requested with the hypothesis of CD, affecting the ileocecal region. Infectious ileitis was considered as a differential diagnosis since the disease was limited to the ileocecal region, with no involvement of any other part of the small intestine and no signs of involvement in the large intestine. For diagnostic clarification, a colonoscopy with biopsy was requested, which showed intense hyperemia and vascular congestion in the cecum with the presence of an ulcer near the ileal orifice, which was substenosed, preventing proper visualization of its mucosa. A biopsy of the ulcerated lesion in the cecum was performed. At macroscopic examination, the material received for examination consisted of two lymph nodes measuring 1.0x0.8x0.5 cm, whitish in color and elastic. All material was sent for processing (2b/4f). According to the histopathological findings, lymph nodes in the ileocecal region were observed. The microscopic examination report showed chronic granulomatous lymphadenitis with confluent epithelioid granulomas, showing central necrosis with a suppurative pattern, suggestive of Yersinia sp lymphadenitis. AFB testing was negative.

Simultaneously, treatment with the antibiotics Ciprofloxacin and Metronidazole was initiated without improvement of the patient. The antibiotic was changed to Tazocin due to worsening abdominal pain and lack of clinical improvement. As the patient continued without improvement, the medication was escalated to Meropenem, which was effective for abdominal pain and diarrhea. After 10 days of antibiotic therapy, the patient was discharged for follow-up with a gastroenterologist. After discharge, the patient returned with pain and diarrhea, and a control imaging test showed that the lymph nodes did not show radiological improvement. The colon biopsy result showed diffuse granulomatous disease with signs of local inflammatory infiltrate. The hypothesis of tuberculosis was
considered. Due to worsening pain, the patient had to be re-hospitalized, and laparoscopy was performed to remove a lymph node near the ileocecal region. The diagnosis of *Yersinia sp.* was considered. Following this diagnostic hypothesis, the patient underwent a Polymerase Chain Reaction (PCR) test for *Yersinia*, which was positive. He was treated with antibiotics and showed good clinical improvement. There is an indication that the patient's occupation (supermarket packer) may have facilitated contact with the bacterium, as it is found in rats.

**Discussion**

Habr-Gama et al. (2011) define severe CD when there is significant impairment of general health associated with one or more symptoms such as weight loss, fever, severe and frequent abdominal pain (3-4 times or more per day), daily diarrhea, symptoms that were presented by the patient, as described in this report. Vidal et al. (2001) define rectocolitis as inflammatory processes of the colon and rectum, with the main causes of acute colitis being: ulcerative colitis, CD, ischemic colitis, infectious colitis, and drug-induced colitis. Among the specific inflammatory processes are those caused by bacteria, fungi, viruses, protozoa, and helminths. In this study, the cause is related to bacterial infection, as suggested by the biopsy and confirmed by PCR. The treatment of CD can be clinical (such as the administration of anti-inflammatory corticosteroids) or surgical (resection of the affected segment). On the other hand, the treatment of infectious ileitis involves the use of broad-spectrum antibiotics or specific antibiotics, as in the case of tuberculosis.

Yersiniosis is a gastroenteritis transmitted through food and other means. It can be caused by species of the genus *Yersinia* (*Y. enterocolitica*, *Y. pseudotuberculosis*, and *Y. pestis*). The disease is characterized by symptoms of acute diarrhea and fever (especially in children), abdominal pain, and acute mesenteric lymphadenitis, as presented by the patient in the described case. Yersiniosis is more prevalent in Northern Europe, Scandinavia, and Japan. In the United States, there are about 17,000 cases annually. In Brazil, studies are scarce; however, in cases where inflammation is limited to the ileum, an infectious cause should be considered as CD presents areas of lesions interspersed with areas without inflammation. It is worth noting that the patient cited here had the disease only in the ileum and many granulomas in the biopsy and was later diagnosed with yersiniosis. The transmission route is fecal-oral, through water and contaminated food, as well as contact with infected people and animals. Regarding *Y. enterocolitica*, pork products are the main contaminated inputs. Additionally, this species can grow even in refrigeration systems and microaerophilic conditions, so undercooked meats should not be consumed. Despite the apparent preference for pork, *Y. enterocolitica* can be found in milk, oysters, beef, and lamb. Contamination seems to be associated mainly with poor sanitary conditions, inadequate food preparation, and incorrect sterilization and storage techniques.

The diagnosis is made by culturing feces, blood, or vomit with isolated microorganisms, as was done by the biopsy requested by the gastroenterologist and evidenced in the case report. Serological diagnosis is possible through agglutination or ELISA tests. Moreover, Yersiniosis cases have been misdiagnosed as CD or appendicitis, leading to unnecessary appendectomy surgeries, which highlights the importance of the report presented here. The microorganisms in question respond to several antibiotics but are generally resistant to penicillin and other drugs in the same class. Hydration is necessary in most cases due to the symptoms of gastroenteritis. Frequently, aminoglycosides are
chosen in cases of septicemia, as well as the combination of sulfamethoxazole/trimethoprim. Ciprofloxacin and tetracyclines are also effective. Therefore, in the addressed case, the patient presented the characteristic symptoms of lymphadenitis caused by *Yersinia sp*.; however, due to its low occurrence in Brazil, scarcity of studies, and symptoms like CD, the diagnosis was initially confused by the medical team. Nevertheless, the differential diagnosis was confirmed through the biopsy of a lymph node with a lesion and PCR for *Yersinia sp*., leaving no doubt about the individual's pathology. The patient was appropriately treated and showed good progress.

**CONCLUSION**

This case study shows that ileitis is not always caused by inflammatory bowel disease, such as CD or ulcerative colitis. Therefore, it is up to the attending physician to consider differential diagnoses, especially infectious ones (tuberculosis, paracoccidioidomycosis, and yersiniosis). This case report is significant in the medical field, given the scarcity of studies in Brazil, the complexity of the diagnosis, and its rare occurrence.

**REFERENCES**


