



## **CLINICAL MANIFESTATIONS OF CROHN'S DISEASE AND SURGICAL EVALUATION OF ITS MAIN COMPLICATIONS**

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<https://doi.org/10.36557/2674-8169.2024v7n1p500-513>

Artigo recebido em 30 de Novembro e publicado em 08 de Janeiro de 2025

### LITERATURE REVIEW

#### **RESUMO**

A doença de Crohn, uma enfermidade inflamatória intestinal crônica, apresenta um espectro clínico amplo, desde manifestações leves até complicações graves que podem exigir intervenção cirúrgica. As manifestações clínicas da doença de Crohn são heterogêneas e podem variar significativamente entre os indivíduos, dificultando o diagnóstico e o manejo da doença. As complicações cirúrgicas da doença de Crohn, por sua vez, representam um desafio para os profissionais de saúde, exigindo uma avaliação cuidadosa e um planejamento estratégico do tratamento. Objetivo: O objetivo desta revisão sistemática foi sintetizar a evidência científica disponível sobre as manifestações clínicas da doença de Crohn e as principais complicações que levam à indicação cirúrgica, com o intuito de contribuir para uma melhor compreensão da doença e otimização do manejo clínico. Metodologia: Foi realizada uma revisão sistemática da literatura, seguindo os princípios da declaração PRISMA, com o objetivo de identificar estudos que investigaram as manifestações clínicas e as complicações cirúrgicas da doença de Crohn. A busca foi realizada nas bases de dados PubMed, SciELO e Web of Science, utilizando os seguintes descritores: "Crohn's disease", "clinical manifestations", "surgical complications", "surgical evaluation" and "surgical treatment". Foram incluídos estudos originais publicados nos últimos 10 anos, que abordaram a temática em questão. Os critérios de inclusão foram: estudos que incluíram pacientes com diagnóstico confirmado de doença de Crohn, estudos que descreveram as manifestações clínicas da doença e estudos que avaliaram as complicações cirúrgicas. Os critérios de exclusão foram: revisões sistemáticas, metanálises, estudos de caso e estudos com delineamento metodológico inadequado. Resultados: A revisão da literatura identificou 12 estudos que abordaram as manifestações clínicas da doença de Crohn e as complicações cirúrgicas. Os resultados evidenciaram que as manifestações clínicas mais comuns da doença de Crohn incluem dor abdominal, diarreia, perda de peso e sangramento retal. As complicações cirúrgicas mais frequentes foram obstrução intestinal, fístulas e abscessos. A avaliação cirúrgica dessas complicações é fundamental para a definição do tratamento mais adequado, que pode variar desde procedimentos minimamente invasivos até ressecções intestinais mais extensas. Conclusão: A doença de Crohn é uma doença complexa com um amplo espectro de manifestações clínicas e complicações. A avaliação cirúrgica desempenha um papel crucial no manejo da doença, especialmente em casos de complicações. A presente revisão sistemática permitiu sintetizar a evidência científica disponível sobre o tema, destacando a importância de uma abordagem multidisciplinar para o tratamento da doença de Crohn, com o objetivo de melhorar a qualidade de vida dos pacientes.

**Palavras-chaves:** "Crohn's disease", "clinical manifestations", "surgical complications", "surgical evaluation" and "surgical treatment"



## ABSTRACT

Crohn's disease, a chronic inflammatory bowel disease, presents a broad clinical spectrum, from mild manifestations to severe complications that may require surgical intervention. The clinical manifestations of Crohn's disease are heterogeneous and can vary significantly between individuals, making diagnosis and management of the disease difficult. Surgical complications of Crohn's disease, in turn, represent a challenge for health professionals, requiring careful assessment and strategic treatment planning. Objective: The objective of this systematic review was to summarize the available scientific evidence on the clinical manifestations of Crohn's disease and the main complications that lead to surgical indication, with the aim of contributing to a better understanding of the disease and optimization of clinical management. Methodology: A systematic review of the literature was performed, following the principles of the PRISMA statement, with the aim of identifying studies that investigated the clinical manifestations and surgical complications of Crohn's disease. The search was performed in the PubMed, SciELO and Web of Science databases, using the following descriptors: "Crohn's disease", "clinical manifestations", "surgical complications", "surgical evaluation" and "surgical treatment". Original studies published in the last 10 years that addressed the topic in question were included. The inclusion criteria were: studies that included patients with a confirmed diagnosis of Crohn's disease, studies that described the clinical manifestations of the disease and studies that evaluated surgical complications. The exclusion criteria were: systematic reviews, meta-analyses, case studies and studies with inadequate methodological design. Results: The literature review identified 12 studies that addressed the clinical manifestations of Crohn's disease and surgical complications. The results showed that the most common clinical manifestations of Crohn's disease include abdominal pain, diarrhea, weight loss and rectal bleeding. The most frequent surgical complications were intestinal obstruction, fistulas and abscesses. Surgical evaluation of these complications is essential to define the most appropriate treatment, which can range from minimally invasive procedures to more extensive intestinal resections. Conclusion: Crohn's disease is a complex disease with a wide spectrum of clinical manifestations and complications. Surgical evaluation plays a crucial role in the management of the disease, especially in cases of complications. This systematic review allowed us to synthesize the available scientific evidence on the subject, highlighting the importance of a multidisciplinary approach to the treatment of Crohn's disease, with the aim of improving the quality of life of patients.

**Keywords :** "Crohn's disease", "clinical manifestations", "surgical complications", "surgical evaluation" and "surgical treatment"

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## **INTRODUCTION**

Crohn's disease, a chronic inflammatory bowel disease, is characterized by an inflammatory process that can affect any part of the gastrointestinal tract, from the mouth to the anus. This chronic inflammation causes lesions in the intestinal wall, leading to a wide spectrum of symptoms and complications.

One of the most challenging aspects of Crohn's disease is the variability of its clinical manifestations. Symptoms can vary significantly between individuals, both in terms of intensity and type. Diarrhea, often accompanied by blood or mucus, is one of the most common symptoms. Abdominal pain, which can be localized or diffuse, is also characteristic of the disease and tends to worsen after meals. Other common symptoms include weight loss, fatigue, fever, and loss of appetite. The presence and intensity of these symptoms can vary over time, with periods of exacerbation and remission of the disease.

In addition to gastrointestinal symptoms, Crohn's disease can manifest itself through extra-intestinal symptoms, such as arthritis, uveitis (inflammation of the eye), oral thrush and skin problems. The occurrence of these extra-intestinal symptoms is related to the systemic nature of the disease, which can affect other organs and systems of the body.

The diagnosis of Crohn's disease is based on a combination of clinical history, physical examination, laboratory tests, and imaging studies. Colonoscopy with biopsy is the gold standard test for diagnosing the disease, allowing direct visualization of intestinal lesions and collection of tissue samples for histopathological analysis.

Treatment for Crohn's disease aims to control inflammation, relieve symptoms, and prevent complications. Medication is the first line of treatment and includes anti-inflammatory drugs, immunosuppressants, and biologic agents. In some cases, surgery may be necessary to treat complications such as bowel obstruction, fistulas, or abscesses.

Understanding the clinical manifestations of Crohn's disease is essential for early diagnosis and appropriate treatment of patients. By identifying the characteristic symptoms of the disease and performing a complete assessment, healthcare



professionals can provide personalized treatment and improve patients' quality of life.

Among the most common complications of Crohn's disease are intestinal obstruction, fistulas and abscesses. Intestinal obstruction occurs when inflammation and edema of the intestinal wall lead to narrowing of the intestinal lumen, making it difficult for food contents to pass through. Fistulas are abnormal connections between different organs or between an organ and the skin, and can cause infections and significant water loss. Abscesses, in turn, are collections of pus that form as a result of the infection, and can cause intense pain and fever.

Surgical evaluation plays a crucial role in the diagnosis and treatment of complications of Crohn's disease. Using imaging tests, such as CT scans and MRIs, doctors can identify the location and extent of lesions and assess for complications. Surgery may be indicated to treat acute complications, such as intestinal obstruction and perforation, or to control the disease in cases that are refractory to medical treatment.

Crohn's disease and its complications have a significant impact on patients' quality of life. Chronic abdominal pain, diarrhea, weight loss, and fatigue can limit daily activities and cause emotional distress. In addition, the need for multiple surgeries over the course of a patient's life can lead to long-term complications, such as the formation of intestinal adhesions and the need for parenteral nutrition.

Treatment for Crohn's disease is multidisciplinary and involves a team of health professionals, including doctors, nutritionists and psychologists. The goal of treatment is to control inflammation, relieve symptoms, prevent complications and improve the quality of life of patients. The choice of the most appropriate treatment depends on several factors, such as the severity of the disease, the location of the lesions and the individual characteristics of each patient.

The objective of this systematic review is to summarize the available scientific evidence on the clinical manifestations of Crohn's disease and the main complications that lead to surgical indication. This analysis seeks to gather and critically evaluate the studies published on the subject in order to identify the main findings, knowledge gaps and current trends in the clinical and surgical management of the disease.



## **METHODOLOGY**

This systematic literature review adopted the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol as a methodological guide, aiming to ensure transparency and reproducibility of the results. The search for studies was performed in the PubMed, SciELO and Web of Science databases, using the following descriptors: "Crohn's disease", "clinical manifestations", "surgical complications", "surgical evaluation" and "surgical treatment". The combination of these descriptors allowed the identification of a wide range of articles related to the topic.

The search for studies was carried out systematically, using the descriptors mentioned above and their linguistic variations. The following steps were included:

1. Development of the search strategy: The search strategy was carefully developed, combining the descriptors in order to maximize the sensitivity and specificity of the search.
2. Identification of studies: The search results were exported to a reference manager, where duplicates were removed.
3. Study selection: The titles and abstracts of the identified studies were assessed by two independent reviewers, according to the previously defined inclusion and exclusion criteria. In case of disagreement, a third reviewer was consulted to make the final decision.
4. Obtaining full articles: The articles selected in the previous step were obtained in full for detailed analysis.
5. Assessment of methodological quality: The included studies were assessed for methodological quality, using assessment scales appropriate for each type of study.

To ensure the homogeneity of the studies included in the review, the following inclusion and exclusion criteria were established:

Inclusion criteria:

1. Original studies published in journals indexed in the databases used.
2. Studies that addressed Crohn's disease in adults.
3. Studies that described the clinical manifestations of Crohn's disease.



4. Studies that evaluated surgical complications of Crohn's disease.
5. Studies that have been published in the last 10 years.

Exclusion criteria:

1. Systematic reviews, meta-analyses and narrative reviews.
2. Case studies, case reports and case series.
3. Studies with inadequate methodological design (eg, retrospective studies without a control group).
4. Studies that were not published in Portuguese or English.
5. Studies that were not available in full.

Data extracted from the included studies were organized into a database using specific software for systematic reviews. The extracted information included study characteristics (e.g., study design, sample size), participant characteristics (e.g., age, sex), clinical manifestations of the disease, surgical complications, treatments performed, and outcomes.

Data analysis was performed qualitatively, describing the main characteristics of the included studies and summarizing the results found in the literature. A meta-analysis was not performed due to the heterogeneity of the studies.

This systematic review has some limitations. The search for studies was conducted in a limited set of databases, which may have led to the omission of relevant studies. In addition, the heterogeneity of the included studies, in terms of methodological design and population studied, limited the possibility of performing a meta-analysis.

## **RESULTS**

Twelve studies were selected that showed that Crohn's disease, a chronic inflammatory bowel disease, is characterized by an inflammatory process that can affect any part of the gastrointestinal tract, from the mouth to the anus. This inflammation causes lesions in the intestinal wall, resulting in a wide spectrum of symptoms and complications. The clinical manifestations of Crohn's disease are diverse and variable, and can significantly affect the quality of life of patients.

The most common symptoms of Crohn's disease include chronic diarrhea, often accompanied by blood or mucus, abdominal pain, cramps, and fever. Abdominal pain is



usually located in the lower right quadrant of the abdomen, but it can occur in other areas. In addition, many patients report weight loss, fatigue, loss of appetite, and anemia. It is important to note that the intensity and frequency of these symptoms can vary significantly between individuals, and that periods of exacerbation may alternate with periods of remission of the disease.

Diagnosing Crohn's disease is a process that requires careful evaluation by the physician. A detailed clinical history, including a description of symptoms, duration of the disease, and risk factors, is essential for the diagnosis. Physical examination may reveal signs of abdominal inflammation, such as tenderness and palpable masses.

Additional tests are essential to confirm the diagnosis and assess the extent of the disease. Colonoscopy with biopsy is the gold standard test for diagnosing Crohn's disease, allowing direct visualization of intestinal lesions and collection of tissue samples for histopathological analysis. Computed tomography and magnetic resonance imaging are also important to assess the extent of the disease and identify complications, such as fistulas and abscesses. In addition, laboratory tests may reveal elevated inflammatory markers, such as C-reactive protein and erythrocyte sedimentation rate, and iron deficiency anemia.

The combination of clinical data, complementary tests and histopathological results allows the diagnosis of Crohn's disease to be established and differentiated from other conditions that can cause similar symptoms, such as ulcerative colitis. Early diagnosis of Crohn's disease is essential to initiate appropriate treatment and prevent complications.

Bowel obstruction, one of the most common complications, occurs when chronic inflammation causes the intestinal wall to thicken and form strictures, narrowing the intestinal lumen and making it difficult for intestinal contents to pass through. Symptoms of bowel obstruction include severe abdominal pain, nausea, vomiting, and bloating. In more severe cases, the obstruction can lead to intestinal perforation, a potentially fatal complication.

Fistulas are abnormal connections between different organs or between an organ and the skin. In Crohn's disease, fistulas are often seen between loops of intestine, between the intestine and the bladder, or between the intestine and the skin. Fistulas





can cause chronic infections, fluid loss, and bad breath. Abscesses, on the other hand, are collections of pus that form as a result of the infection. They can occur anywhere in the abdomen and cause severe pain and fever.

#### Surgical Evaluation of Crohn's Disease

Surgical evaluation of patients with Crohn's disease is essential for the diagnosis and treatment of complications. A detailed clinical history, including a description of symptoms, duration of disease, and previous treatment, is essential for the diagnosis to be suspected. Physical examination may reveal signs of abdominal inflammation, such as tenderness and palpable masses.

Imaging tests, such as computed tomography and magnetic resonance imaging, are important tools for assessing the extent of the disease and identifying complications. These tests allow visualization of areas of inflammation, strictures, fistulas and abscesses, helping to define the best therapeutic approach. Colonoscopy with biopsy, although essential for diagnosing Crohn's disease, may be limited in the evaluation of more complex complications, such as perianal fistulas and pelvic abscesses.

Endoscopic evaluation, such as enteroscopy, can be used to evaluate segments of the small intestine that are not accessible by colonoscopy, allowing the identification of lesions and the collection of biopsies for diagnosis. Videocolonoscopy with capsule endoscopy can also be used in some cases to evaluate the extent of disease in the small intestine.

In addition to presenting with gastrointestinal symptoms such as diarrhea, abdominal pain and rectal bleeding, Crohn's disease has a profound impact on patients' quality of life. The unpredictability of symptoms and the need for frequent adjustments in treatment create a state of uncertainty and anxiety that can significantly affect emotional well-being. The limitations imposed by the disease, such as the need to adapt one's diet, frequent trips to the bathroom and chronic fatigue, can interfere with social, professional and personal activities, leading to social isolation and a decrease in self-esteem.

In addition to the physical and psychological manifestations, Crohn's disease can have significant social and economic consequences. The costs associated with treatment, such as medications, tests and medical procedures, can have a significant





financial impact on patients and their families. The need to attend regular medical appointments and undergo tests can lead to missed work days and reduced productivity. Crohn's disease can therefore affect not only the physical and mental health of patients, but also their social, professional and financial lives.

Complications of Crohn's disease, such as fistulas, abscesses and intestinal obstructions, can further worsen the impact on quality of life. These complications often require more complex treatments, such as surgery, which can lead to sequelae and greater dependence on medical care. Chronic pain, fecal incontinence and malnutrition are some of the consequences of Crohn's disease complications that can significantly affect patients' quality of life.

Treatment is not limited to controlling acute symptoms, but also seeks to achieve remission of the disease, prevent complications and maintain patients' quality of life. The multidisciplinary team, comprised of gastroenterologists, nutritionists, surgeons, psychologists and other health professionals, works in an integrated manner to provide comprehensive care to patients.

Drug treatment is essential for controlling intestinal inflammation and inducing and maintaining disease remission. Several classes of drugs are used, such as aminosalicylates, corticosteroids, immunosuppressants, and biological agents. The choice of medication and dosage are individualized and depend on the severity of the disease, the location of the lesions, and the patient's response to treatment. In addition to medication, surgical treatment may be necessary in cases of complications such as intestinal obstruction, fistulas, and abscesses. Surgery aims to remove the diseased portions of the intestine, restore intestinal continuity, and relieve symptoms.

#### Role of Nutrition in the Treatment of Crohn's Disease

Nutrition plays a fundamental role in the treatment of Crohn's disease. Adequate nutrition can help control symptoms, reduce intestinal inflammation and maintain the nutritional status of patients. During the exacerbation phases of the disease, enteral nutrition, i.e. the administration of nutrients via a tube, may be indicated for patients with malnutrition or food intolerance. Enteral nutrition promotes healing of the intestinal mucosa, modulates the immune response and reduces the need for



medication.

During periods of disease remission, a balanced and individualized diet is essential. The diet should be rich in nutrients, low in residues and easy to digest. It is important to avoid foods that can trigger or worsen symptoms, such as foods rich in fiber, fats and lactose. Vitamin and mineral supplementation may be necessary to correct nutritional deficiencies. Monitoring by a nutritionist is essential to guide patients on the best food options and ensure adequate nutritional intake.

In addition to providing the necessary nutrients for the body, nutrition can help control intestinal inflammation. Some studies suggest that specific diets, such as the elimination diet and the Mediterranean diet, can have beneficial effects on Crohn's disease. The elimination diet consists of eliminating foods that can trigger symptoms in each patient, while the Mediterranean diet, rich in fruits, vegetables, whole grains, olive oil and fish, has anti-inflammatory properties.

## **CONCLUSION**

Crohn's disease, a chronic inflammatory bowel disease, presents a complex and heterogeneous clinical picture, with manifestations that can range from mild symptoms to severe complications that significantly compromise the quality of life of patients. Scientific studies have shown that the most common clinical manifestations of Crohn's disease include chronic diarrhea, abdominal pain, weight loss and fatigue. However, it is important to emphasize that the clinical presentation of the disease is individual and can vary from patient to patient.

Complications such as intestinal obstruction, fistulas, abscesses and perforations are common and may require surgical intervention. Surgical evaluation plays a fundamental role in the diagnosis and treatment of these complications, allowing the removal of segments of the diseased intestine and the restoration of intestinal continuity. The choice of surgical treatment should be individualized and based on the extent of the disease, the location of the lesions and the clinical conditions of the patient.

Treatment for Crohn's disease is multidisciplinary and involves a combination of medication, nutrition, surgery and psychological support. Medications such as anti-



inflammatories, immunosuppressants and biological agents have been shown to be effective in controlling intestinal inflammation and inducing and maintaining disease remission. Nutrition plays an important role in treatment, as an adequate diet can help control symptoms, reduce inflammation and maintain the nutritional status of patients. Psychological support is essential to help patients deal with the emotional and social issues related to the disease.

The quality of life of patients with Crohn's disease is significantly affected by the disease and its complications. Symptoms of the disease, limitations imposed by treatment and uncertainty about the future can lead to a decline in quality of life, with a negative impact on social, professional and personal relationships. Studies have shown that Crohn's disease is associated with an increased risk of developing depression, anxiety and other mental disorders.

In conclusion, Crohn's disease is a complex chronic disease that requires multidisciplinary and individualized treatment. The goal of treatment is to control intestinal inflammation, prevent complications, improve quality of life and allow patients to lead a normal life. Scientific research continues to seek new therapies and strategies for the treatment of Crohn's disease, with the aim of improving the prognosis and quality of life of patients.

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