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Surgical Management of Crohn's Disease: An Overview

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Abstract

Crohn's Disease (CD) is a chronic inflammatory condition of the digestive tract resulting in symptoms such as abdominal pain, weight loss, and fatigue, requiring a multifaceted approach to management. While not curative, the surgical management of CD forms a vital part of the therapeutic strategy for complications. This article overviews various surgical methods for treating CD, their indications, and potential complications. CD predominantly emerges in developed countries, with known risk factors including genetic predisposition, environmental triggers, and diet. The clinical presentation involves varied symptoms based on the inflammation's location within the gastrointestinal tract. Diagnosis necessitates a comprehensive approach, including medical history, physical examination, and diagnostic tests. Surgical intervention may be necessary due to severe complications like intestinal obstruction, abscesses, strictures, fistulas, and perforation. Common reasons for surgery include medically resistant disease and malignancy. However, postoperative recurrence is frequent, necessitating repeated surgery in 26% of cases. This narrative review paper examines three major surgical interventions in detail. Fistulotomy, primarily used for simple fistulas, can offer symptomatic relief in well-selected CD cases but may risk complications and high recurrence rates. Stricturoplasty, useful for widening narrow bowels, preserves intestinal length and function and can serve as an effective alternative to resection. Lastly, the intestinal resection and colectomy procedures are explored, focusing on their indications and complications. Future research should focus on optimizing surgical approaches to reduce recurrence rates and improve patient outcomes.

Keywords: Crohn's Disease; Surgical management; Surgery; Inflammatory Bowel Disease; Fistulotomy; Stricturoplasty; Intestinal resection; Colectomy; Proctocolectomy

Abbreviations: CD: Crohn's Disease; IBD: Inflammatory Bowel Disease; RPC-IPAA: Restorative Proctocolectomy with Ileal Pouch-Anal Anastomosis; TPC: Total Proctocolectomy; GI: Gastrointestinal; ESR: Erythrocyte sedimentation rate; CRP: C-reactive protein; ANCA: Anti-neutrophil cytoplasmic antibodies; ASCA: Anti-Saccharomyces cerevisiae antibodies

Introduction

Crohn's Disease (CD) is a chronic inflammatory bowel disease characterized by inflammation that can affect any part of the digestive tract, from the mouth to the anus. The inflammation extends through the entire thickness of the affected bowel wall and can lead to symptoms such as abdominal pain, diarrhea, weight loss, and fatigue [1,4]. Epidemiologically, Crohn's Disease has a global distribution, with higher prevalence rates reported in developed countries. The prevalence of CD varies across regions, ranging from 26 to 199 cases per 100,000 individuals. The incidence representing the number of new cases per year ranges from 0.1 to 20.2 cases per 100,000 individuals [2]. Mortality rates are generally low, with a 10-year survival rate of 85% to 90% [3].

The clinical presentation for CD is variable, depending on the location and extent of the inflammation within the gastrointestinal tract. Common symptoms include chronic abdominal pain, persistent diarrhea, rectal bleeding, weight loss, and fatigue. Additional manifestations include fever, malnutrition, joint pain, skin problems, and eye inflammation [1,4]. Diagnosis involves a combination of clinical evaluation, medical history, physical examination, and diagnostic tests. These tests may include blood

tests to assess inflammation markers, stool tests to rule out infectious causes, imaging studies such as endoscopy, colonoscopy, or imaging with contrast to visualize the affected areas, and sometimes a biopsy to examine the tissue for characteristic features [5]. The treatment aims to reduce inflammation, control symptoms, and induce and maintain remission. It typically involves a stepwise approach starting with medications such as aminosalicylates and corticosteroids to induce remission. Immune modulators, such as immunomodulators or biological agents, may be prescribed for long-term maintenance. Lifestyle modifications, including dietary changes and stress management, can also play a role in symptom management [5]. Surgical intervention may be indicated in Crohn's Disease under specific circumstances. Surgical indications include complications such as strictures, fistulas, abscesses, perforations, or intestinal obstructions that do not respond to medical treatment. Surgery aims to remove the affected segment of the intestine or manage complications to alleviate symptoms and improve the patient's quality of life [1,4,5]. This article aims to provide a comprehensive overview of the surgical management of Crohn's Disease. By understanding the definition, epidemiology, clinical presentation, diagnosis, treatment, and surgical indications of Crohn's Disease, healthcare professionals can develop a holistic approach to managing this chronic inflammatory bowel disease and optimize patient outcomes.

Epidemiology & Physiopathology

Throughout the latter half of the twentieth century, Crohn's disease and ulcerative colitis escalated rapidly in industrialized regions of Western Europe and North America. In regions that historically had a low incidence of Inflammatory Bowel Disease (IBD), the emergence of ulcerative colitis generally preceded that of Crohn's disease, with the latter eventually becoming more prevalent over time. This pattern mirrors the experience in North America and Northern Europe during the previous century [6]. Regarding prevalence, Feuerstein and Cheifetz (2017) elucidate that the incidence of Crohn's disease ranges from 3 to 20 cases per 100,000 individuals [7]. The most significant known risk factor for developing IBD is having a close family member with the condition. It is estimated that between 5% and 23% of people with IBD have a first-degree relative who also has the disease. Furthermore, families with multiple affected members often exhibit a high degree of clinical similarity regarding disease location, behavior, age at diagnosis, and extra-intestinal manifestations [6]. The incidence of IBD displays a bimodal distribution, with the majority of cases occurring between the ages of 15 and 30, as well as between 40 and 60 years old [8]. Additionally, urban areas tend to have a higher disease prevalence than rural regions [8]. Women may have a slightly higher prevalence of Crohn's disease, and individuals of Ashkenazi Jewish descent have a higher incidence than non-Jews [7].

The precise mechanisms underlying Crohn's disease (CD) pathogenesis remain unknown. However, several genetic and environmental factors have been identified to increase the risk of the disease and contribute to the abnormal immune response in the gut [7]. The pathophysiology of CD is multifactorial and involves genetic predisposition, infections, immunological factors, environmental triggers, and dietary influences [8]. CD is characterized by tissue inflammation resulting from an uncontrolled immune response against luminal bacterial antigens [9]. The inflammation typically affects the entire gastrointestinal (GI) tract, ranging from the mouth to the perianal area, with the terminal ileum and right colon being the most commonly involved regions. The initial lesion begins as an infiltrate around an intestinal crypt, progressing to ulceration in the superficial mucosa and extending to deeper layers. As the inflammation advances, non-caseating granulomas develop, affecting all layers of the intestinal wall. Various immune cells, such as CD4 T-cells, CD8 T-cells, B-cells, CD14 monocytes, and natural killer cells, infiltrate the gut of CD patients, contributing to this process [9].

Innate defense mechanisms against infectious diseases, including intestinal mucus secretion, play a role in immune-mediated susceptibility to CD. Studies have shown that variants of the Muc2 gene, which reduce mucus production, are associated with CD in mouse models. Additionally, molecules involved in bacterial adhesion have been correlated with the disease. Pathogenesis also involves the interaction of immune cells with integrins, adhesion molecules, and multiple chemokines, leading to elevated levels of inflammatory cytokines. These cytokines become targets for both immune and non-immune cells and promote mucosal inflammation [9]. The ongoing inflammation and scarring in CD can result in bowel obstruction and the formation of strictures. Furthermore, Crohn's disease is associated with the development of fistulas, such as enterovesical, enteroenteral, enterocutaneous, and enterovaginal fistulas [8].

Clinical Presentation, Diagnosis, and Medical Treatment

The clinical presentation of Crohn's disease and ulcerative colitis can be highly variable, with a tremendous diversity of disease phenotypes [10]. Crohn's disease most often presents insidiously but can present as an acute toxic illness. Common symptoms include diarrhea, abdominal pain, rectal bleeding, fever, weight loss, and fatigue [11,12]. In severe cases, perianal abscesses and cutaneous fistulas may be observed. Enterovesical fistulas may manifest as pneumaturia, recurrent urinary tract infections, and feculent vaginal discharge. Crohn's disease is also associated with extraintestinal manifestations, including episcleritis, uveitis, stomatitis, aphthous ulcers, liver steatosis, gallstones, cholangitis, nephrolithiasis, hydronephrosis, urinary tract infections, arthritis (in the spine, sacroiliac joint, knees, ankles, hips, wrists, and elbows), ankylosing spondylitis, erythema nodosum, and pyoderma gangrenosum.

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The diagnosis of Crohn's disease is based on clinical findings in conjunction with endoscopic, histologic, radiologic, and/or biochemical studies. The history, physical examination, and basic laboratory findings guide the decision to pursue the diagnosis [11,12]. While no laboratory test can definitively rule out or diagnose Crohn's disease, findings from serum and stool testing can assist in making a diagnosis. Stool studies should be conducted to rule out other causes of gastrointestinal symptoms and diarrhea. Patients may exhibit anemia due to iron deficiency, chronic inflammation, or B12 deficiency. Inflammatory markers such as erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) may be elevated, although normal levels do not necessarily indicate the absence of Crohn's disease activity [13,14]. Special serological tests, such as normal anti-neutrophil cytoplasmic antibodies (ANCA) and elevated anti-Saccharomyces cerevisiae antibodies (ASCA), can help distinguish Crohn's disease from ulcerative colitis [13,14]. Cross-sectional imaging should follow to determine the full extent of disease seen on endoscopy or to identify disease not seen on endoscopy. Determining the full extent of the disease is essential in developing a treatment plan [15-17]. Treatment of CD ranges from medical treatment to radical surgery depending on the complications (fistulotomy, stricturoplasty, intestinal resection and colectomy, and proctocolectomy).

Crohn's Disease Complications

The most common complication of Crohn's disease is intestine blockage caused by swelling and thickening of the bowel wall. This leads to the narrowing of the intestinal lumen, resulting in intestinal obstruction. Furthermore, Crohn's disease can induce the formation of strictures, which are areas of narrowing in the GI tract. Patients with the disease often encounter problems related to malnutrition and nutritional deficiencies, including deficiencies in vitamins and minerals, further exacerbating the overall health burden on individuals with Crohn's disease [21,22].

Several studies have shown an increased risk of death in individuals affected by Crohn's disease. The chronic inflammation and complications associated with the disease can contribute to this heightened risk. Additionally, analyses of colorectal and small bowel cancer studies have revealed that people with Crohn's disease also suffer from comorbidities such as colorectal cancer, cardiovascular disease, and respiratory disease. These comorbidities further contribute to the increased mortality risk in Crohn's disease patients [21,22]. Crohn's disease can lead to fistulas between different parts of the intestine or between the intestine and other organs. Fistulas can cause pain, discomfort, and recurrent infections. Additionally, abscesses can form in the abdomen, pelvis, or around the anal area. These complications require medical intervention and can significantly impact patients' well-being [22].

Surgery for Crohn's disease is not curative. Although some debate exists as to whether early intervention may be beneficial in select cases, excess intervention can be harmful, making the timing of interventions require considerable judgment. As medical therapy continues to improve, this decision is increasingly shared between gastroenterologists and surgeons. The need for surgery is expected, with up to 57% of patients requiring at least one surgery. Surgery is often needed to treat fistulas, abscesses, and perianal disease. Other indications include medically resistant disease, perforation, obstruction, strictures, uncontrolled bleeding, dysplasia, and malignancy. Early resection may be an option for patients with disease confined to the ileocecal region who wish to minimize the adverse effects of medical therapy [18,19].

A cohort of 1,112 patients who underwent 3,259 stricture plastics found a morbidity rate of 13%, with fistula and abscess being the leading postoperative complications, followed by postoperative gastrointestinal bleeding and wound infection. Overall, 26% of patients experienced a disease recurrence, usually within 5 years, and recurrence at another site in 25%. Endoscopic recurrence occurs in 70-90% of patients within as little as 1 week after surgery and becomes symptomatic in 60% of patients within 10 years. One-third of patients will require repeat surgical intervention. Smokers have a 2.5-fold higher risk of requiring additional surgery, and having a family history of Crohn's disease increases surgical recurrence 2-fold [18]. The most common indications for surgical treatment were stenosis (58.4 %) and fistulas (38.5%). As the most frequent procedures, the ileocecal resection and the partial resection of the small bowel were performed. Altogether, the complication rate was 11.5 %. The primary procedures (6.52%) had fewer complications than the operations for a recurrence of Crohn's disease (17.70%). The rate for the recurrence of Crohn's disease was 17.4% after 5 years, 36.7% after 10 years, and 52.8% after 15 years. Patients with fistulas as the primary operation indication had the highest recurrence rate (45%). Patients with an isolated Crohn's lesion of the small intestine had a significantly higher risk for recurrence (59.5%) than those in the ileocecal region or the colon. The anastomosis region (73%) was the most common localization for recurrence [20].

Patients with a high risk for recurrence can be identified based on defined risk factors. This is very important because of the higher risk for complications caused by reoperations compared to primary procedures. That is why interdisciplinary cooperation, including postoperative care and optimal conservative treatment, is absolutely essential. Between 70% and 90% of patients with Crohn's disease will require surgery during their lifetime, even those who first present with a non-fistulizing, nonpenetrating phenotype, and as many as 39% will require repeated surgery. The percentages of patients with obstructing phenotypes and penetrating phenotypes are approximately even, and no genotype has been reliably linked with phenotypic presentation or progression (including the CARD15 gene). Indications for surgery include complications from strictures, intra-abdominal and

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perianal fistulas, intestinal perforation, intra-abdominal abscess, gastrointestinal bleeding, malignancy, and growth restriction in children [18,20].

Surgical treatment

Fistulotomy

A fistulotomy is a surgical procedure to treat an anal fistula, a narrow tunnel-like passage that develops between the anal canal and the skin surrounding the anus. It involves the complete division of the fistula tract, which allows for drainage of any associated abscess and promotes healing. This procedure is indicated for the treatment of low or superficial anal fistulas. These abnormalities typically have a single tract that extends from the anal canal to the external opening and usually are most employed for simple, uncomplicated fistulas that are not associated with inflammatory bowel disease (such as Crohn's disease). Therefore, careful patient selection is crucial to determine the appropriateness of fistulotomy in Crohn's disease [23,24].

Furthermore, fistulotomy in Crohn's disease also has its contraindications. Active inflammation within the fistula tract or surrounding tissues is a significant contraindication, as it can increase the risk of complications and hinder the healing process. Complex fistulas with multiple tracts or involvement of adjacent structures pose challenges for fistulotomy and may require alternative surgical approaches or combined therapies. Additionally, elective surgical procedures may be deferred for pregnant women until after delivery [25]. Also, patients with a high risk of recurrence, such as those with extensive disease or underlying systemic conditions, may not be suitable candidates for the procedure [24,25].

Performing fistulotomy in Crohn's disease carries a higher risk of complications than non-Crohn's-related fistulas. Impaired wound healing, postoperative abscess formation, and disease exacerbation are potential complications that can arise. The inflammatory nature of Crohn's disease can affect the healing process and increase the risk of more complications. Furthermore, disease exacerbation can occur due to surgical manipulation, necessitating careful postoperative management [23]. Also, intraoperative or postoperative bleeding may occur due to inappropriate or insufficient hemostasis [26].

Adverse effects related to fistulotomy in Crohn's disease include poor wound healing, postoperative pain, discomfort, which usually subside with time and appropriate pain management, scarring, and disease exacerbation [26]. The impaired wound healing can be attributed to chronic inflammation and altered healing mechanisms associated with Crohn's disease, with delayed wound healing, breakdown, or infection may occur [26]. Also, scar tissue formation can cause cosmetic concerns or potential narrowing of the anal canal [23].

The effectiveness of fistulotomy in Crohn's disease depends on several factors, including patient selection and appropriate timing. In carefully selected cases where the disease is well-controlled and there is no active inflammation or complex disease involvement, fistulotomy can provide symptomatic relief and promote healing. However, the best fistula healing rates reported with combined medical and surgical approaches are approximately 50% [23]. Therefore, the risk of recurrence should be considered, as Crohn's-related fistulas have a higher propensity due to the underlying disease process [25]. Close monitoring and comprehensive disease management are necessary to optimize outcomes [23,24].

Regarding the surgical technique, fistulotomy in Crohn's disease follows a similar approach to standard fistulotomy procedures. It involves patient positioning, administration of anesthesia, identification of the fistula tract, complete division of the tract, which is achieved with an incision made along the length of the fistula tract, from the internal opening to the external opening, drainage, in cases of associated abscess, the abscess cavity is drained and irrigated, meticulous hemostasis, and appropriate wound management [25]. The wound closure method, such as leaving the wound open to heal by secondary intention, should be carefully considered based on the individual patient's characteristics and disease status [26].

Stricturoplasty

Stricturoplasty is a surgical procedure used to alleviate bowel narrowing caused by scar tissue in the intestinal wall resulting from inflammatory conditions like Crohn's disease [27]. There are two types of strictures in Crohn's disease; correctly identifying them is crucial for disease management. Luminal narrowing occurs due to an excessive repair response to inflammation, which leads to the deposition of extracellular matrix (ECM). The interplay between inflammatory cells, ECM, and the microbiota is implicated in stricture formation, and the mechanisms overlap between both types of strictures. Inflammatory strictures respond well to medical therapy, while fibrotic strictures require endoscopic or surgical intervention [28]. Different techniques for stricturoplasty have been described, depending on the length of the stricture, bowel diameter, and multifocality of the disease [29]. Short strictures of less than 10 cm in length should be treated with the Heineke Miulicz strictureplasty technique; medium strictures of 10 to 20 cm in length should be treated with Finney strictureplasty; long strictures exceeding 20 cm in length should be treated with isoperistaltic strictureplasty, which is sometimes referred to as Michelassi Stricureplasty [27,30]. Indications for surgery in stricturing Crohn's disease include persistent obstructive symptoms unresponsive to medical therapy, chronic steroid use, weight loss, or the need for chronic pain medications. Bowel resection versus strictureplasty depends on factors such as the length of the stricture, previous operations, and remaining small bowel length. Strictureplasty can be performed along the bowel, including the duodenum, jejunum, ileum, and rarely the colon [29].

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While traditionally used for non-acute fibrotic strictures, stricturoplasty is now employed in active disease cases. However, there are contraindications to consider, such as phlegmon or fistula at the affected site, strictures near anastomosis sites, multiple strictures over a short bowel length, strictures associated with dysplasia or malignancy, preoperative malnutrition (albumin <2.0 g/dL), or perforated bowels [27,30]. Stricturoplasty preserves intestinal length and function while minimizing complications, making it advantageous, especially for patients with a history of significant bowel resection (> 100 cm) [31]. In cases of extensive recurrent disease, stricturoplasty non-conventional serves as a highly effective alternative to repeated bowel resection. Recent studies suggest that surgical excision offers a better quality of life and cost reduction than anti-TNF therapy in isolated ileocolic disease. Stricturoplasty has similar long-term outcomes to resection and is specifically recommended for multiple strictures, previous long-segment resections, early recurrences, short bowel syndrome, and malnutrition. In addition to conventional procedures, non-conventional stricturoplasties across the ileocecal valve have been performed with comparable outcomes [28].

Intestinal resection

Colonic Crohn's disease has many different surgical treatment options, including segmental resection and (sub)total colectomy, depending on disease location, severity, and emergency. Different surgical procedures for patients with extended Chrons colitis are available. In an emergency, including toxic megacolon, perforation, or severe hemorrhage, a subtotal colectomy should be performed to construct an end ileostomy and Hartmann closure of the rectum intraperitoneally [32]. After a recovery period, bowel continuity restoration can be restored [33]. The most important indication for elective colectomy in colonic Crohn's is a medically refractory disease. Infectious indications such as perforation or the more commonly discovered fistula or abscess disease round out most indications. Incontinence, although infrequent, is a critical and specific reason for rectal Crohn's disease surgery [32]. Intestinal Fistula (Enteroenteric or enterocutaneous) is the most common complication of bowel resection in Crohn's patients (14.8%), followed by intra-abdominal abscess (6.1%). The laparoscopic approach had a significantly lower postoperative enteric fistula than the open approach [33]. CDs frequently recur and cannot be cured entirely. After surgery, a subgroup of patients will experience further attacks during the disease. Clinical recurrence rates in the 10-30% range are described in the literature for the first year after surgery. The risk increases to 60% within 10 years after the operation [34].

Proctocolectomy

Restorative proctocolectomy with ileal pouch-anal anastomosis (RPC-IPAA) is the procedure of choice for some patients with colonic Crohn's disease, which has also been associated with a higher possibility of perianal involvement (77% versus 23% in small bowel CD). It is, therefore, essential to consider the presence of rectal or perianal CD when deciding on the type of surgery, as it increases the risk of disease recurrence and the chances of pouch loss after an IPAA [35]. IPAA was first described clinically by Parks and Nicholls in 1978 as a surgical technique to maintain fecal continence while avoiding a permanent stoma following total proctocolectomy. A one-stage procedure is defined as proctocolectomy and IPAA with no diverting ileostomy. A two-stage procedure refers to a combination of total proctocolectomy with pouch formation and a diverting loop ileostomy. Finally, a three-stage procedure is a subtotal colectomy with end ileostomy as stage one, a completion proctectomy with IPAA and diverting loop ileostomy as stage two, and an ileostomy closure as stage three [36].

RPC-IPAA may be offered to selected patients with CD without perianal or small-bowel disease, recognizing that long-term pouch failure rates are increased in this population. In the case of patients undergoing elective surgery for rectal disease, total proctocolectomy with end ileostomy or proctectomy with the creation of a colostomy should typically be performed [37]. If there is rectal dysplasia, long-standing chronic inflammation in the setting of colonic dysplasia, colon or rectal cancer, or an unreliable patient who will likely be lost from ongoing surveillance, total proctocolectomy and end ileostomy is the operation of choice [38]. However, many surgeons and gastroenterologists consider CD a relative contraindication to IPAA due to increased pouch complications and failure rates, which can compromise the length of the remaining small bowel and potentially result in short bowel syndrome. Absolute contraindications to IPAA include significant medical comorbidities, small bowel or perianal CD, distal rectum or anal canal cancer requiring radiation treatment and/or excision of the sphincter mechanism, and fecal incontinence [36].

TPC carries a significant risk of perineal wound and stoma complications. In addition, permanent stoma formation and its impact on quality of life are of great concern to the patient [39]. RPC-IPAA complications such as chronic sinusitis, strictures, pouchitis, Crohn's disease in the pouch, and cuffs occur and can lead to pouch failure [40]. TPC involves the complete removal of the colon and rectum. The reported recurrence rate after this procedure is low, and TPC appears to be the best surgical option to reduce the risk of recurrence [39]. In addition, a recent meta-analysis concluded that segmental colectomy, subtotal colectomy, and proctocolectomy may be equally effective in patients with colonic CD [41].

Conclusion

The surgical management of Crohn's disease presents a diverse array of options to provide relief and improve patients' quality of life. This narrative review has highlighted some vital surgical interventions to treat this complex condition. One such intervention is fistulectomy, which has proven to be a practical approach for managing fistulas associated with Crohn's disease.

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By surgically removing these abnormal connections, fistulectomy offers patients a chance to alleviate symptoms, promote healing, and potentially avoid further complications. Stricturoplasty is another valuable surgical technique discussed in this review. This procedure addresses strictures or narrow segments of the intestines that obstruct the flow of food and waste. By preserving the length of the bowel and avoiding extensive resection, stricturoplasty allows for improved function and a reduced risk of short bowel syndrome, thereby contributing to enhanced postoperative outcomes. In cases where the disease has progressed significantly or when conservative measures prove inadequate, proctocolectomy may be considered. This comprehensive surgical procedure involves the removal of the entire colon and rectum, often necessitating the creation of an ileostomy or an ileal pouch-anal anastomosis.

i. Proctocolectomy offers a definitive solution for patients with severe and refractory Crohn's disease, providing long-term relief from symptoms and the potential for improved quality of life. Finally, intestinal resection is a commonly employed surgical approach for localized Crohn's disease lesions or strictures that do not respond to medical therapy. This procedure involves the removal of the affected portion of the intestine, aiming to eliminate the diseased segments and restore normal bowel function. Intestinal resection can be tailored to the individual patient's needs, considering factors such as the location and extent of the disease, with the ultimate goal of preserving as much healthy intestine as possible. Overall, the surgical management of Crohn's disease encompasses a range of interventions. Collaborative decision-making between the patient, gastroenterologist, and surgeon is crucial in determining the most appropriate surgical strategy, considering the patient's symptoms, disease severity, and long-term goals. With ongoing advancements in surgical techniques and perioperative care, the field continues to evolve, offering hope for improved outcomes and a better quality of life for individuals with Crohn's disease.

References

1. Podolsky DK (2002) Inflammatory bowel disease. New England Journal of Medicine 347(6): 417-429.
2. Molodecky NA (2012) Increasing incidence and prevalence of inflammatory bowel diseases with time, based on systematic review. Gastroenterology 142(1): 46-54.
3. Dignass A (2019) 2nd European evidence-based consensus on the diagnosis and management of Crohn's disease 2019: Part 1: Diagnosis and medical management. Journal of Crohn's and Colitis 13(3): 242-274.
4. Lichtenstein (2018) ACG clinical guideline: management of Crohn's disease in adults. American Journal of Gastroenterology 113(4): 481-517.
5. Torres J (2017) ECCO-ESGAR guideline for diagnostic assessment in IBD part 2: IBD scores and general principles and technical aspects. Journal of Crohn's and Colitis 11(4): 403-424.
6. Borowitz SM (2023) The epidemiology of inflammatory bowel disease: Clues to pathogenesis? Frontiers in pediatrics 10: 1103713.
7. Feuerstein JD, Cheifetz AS (2017) Crohn Disease: Epidemiology, Diagnosis, and Management. Mayo Clinic proceedings 92(7): 1088-1103.
8. Ranasinghe IR, Hsu R (2023) Crohn Disease. In: StatPearls. Treasure Island (FL): Stat Pearls Publishing.
9. Petagna L, Antonelli A, Ganini C, Bellato V, Campanelli M, et al. (2020) Pathophysiology of Crohn's disease inflammation and recurrence. Biology direct 15(1): 23.
10. Levine A (2009) Pediatric inflammatory bowel disease: is it different? Dig Dis 27(3): 212-214.
11. Wilkins T, Jarvis K, Patel J (2011) Diagnosis and management of Crohn's disease. Am Fam Physician 84(12): 1365-1375.
12. Lichtenstein GR, Loftus EV, Isaacs KL, Regueiro MD, Gerson LB, et al. (2018) ACG clinical guideline: management of Crohn's disease in adults [published correction appears in Am J Gastroenterol 113(7): 1101.
13. Hsu R (2023) Crohn Disease. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing.
14. Cheifetz AS (2017) Crohn Disease: Epidemiology, Diagnosis, and Management. Mayo Clin Proc 92(7): 1088-1103.
15. Gomollón F, Dignass A, Annese V (2017) 3rd European evidence-based consensus on the diagnosis and management of Crohn's disease 2016: part 1: diagnosis and medical management. J Crohns Colitis 11: 3-25.
16. Panés J, Bouzas R, Chaparro M, (2011) Systematic review: the use of ultrasonography, computed tomography and magnetic resonance imaging for the diagnosis, assessment of activity and abdominal complications of Crohn's disease. Aliment Pharmacol Ther 34(2): 125-145.
17. Carucci LR, Baker ME, Cash BD, Dillman JR, Feig BW, et al. (2015) ACR Appropriateness Criteria Crohn Disease. J Am Coll Radiol 12(10): 1048- 1057.e4.
18. Lewis RT, Maron DJ (2010) Efficacy and complications of surgery for Crohn's disease. Gastroenterol Hepatol (NY) 6(9): 587-596.
19. Veauthier B, Hornecker JR (2018) Crohn's Disease: Diagnosis and Management. Am Fam Physician 98(11): 661-669.
20. Mirow L, Hauenschild L, Hildebrand P, Kleemann M, Keller R, et al. (2008) Das postoperative rezidiv des m. Crohn-ursachen und risiken [Recurrence of Crohn's disease after surgery--causes and risks]. Zentralbl Chir 133(2): 182-187.
21. Fakhoury M, Negrulj R, Mooranian A, Al-Salami H (2014) Inflammatory bowel disease: clinical aspects and treatments. J Inflamm Res 7: 113-120.
22. McDowell C, Farooq U, Haseeb M (2023) Inflammatory Bowel Disease. Treasure Island (FL): StatPearls Publishing.
23. Kotze PG, Shen B, Lightner A (2018) Modern management of perianal fistulas in Crohn's disease: future directions. Gut 67(6): 1181-1194.
24. Schwartz DA, Loftus EV Jr, Tremaine WJ (2002) The natural history of fistulizing Crohn's disease in Olmsted County, Minnesota. Gastroenterology 122(4): 875-880.
25. Garg P, Song J, Bhatia A (2019) Long-term outcomes of anal fistula surgery: a systematic review and meta-analysis. Dis Colon Rectum 62(6): 739-752.
26. Steele SR, Kumar R, Feingold DL (2011) Practice parameters for the management of perianal abscess and fistula-in-ano. Dis Colon Rectum 54(12): 1465-1474.

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27. Hoilat GJ, Rentea RM (2022) Crohn Disease Stricturoplasty. StatPearls.

28. Chandrasinghe P (2022) Surgical Management of Small Bowel Crohn's Disease. Frontiers in Surgery p. 9.

29. Vilchez V, Lightner AL (2022) Surgical Management of Crohn's Disease. Gastroenterology Clinics of North America. W.B. Saunders pp. 353-367.

30. Petrucci R, Papanikolas M, Gilmore A (2023) Australian experience of side-to-side isoperistaltic stricturoplasty in Crohn's disease. ANZ J Surg 93(5): 1287-1293.

31. Meima -Van Praag EM, Christianne, Buskens J, Hompes R, Wilhelmus, et al. (2022) Surgical management of Crohn's disease: a state-of-the-art review.

32. Meima-van Praag EM, Buskens CJ, Hompes R, Bemelman WA (2021) Surgical management of Crohn's disease: a state-of-the-art review. Int J Colorectal Dis 36(6): 1133-1145.

33. Moghadamyeghaneh Z, Carmichael JC, Mills SD, Pigazzi A, Stamos MJ (2015) Outcomes of Bowel Resection in Patients with Crohn's Disease. Am Surg 81(10): 1021-1027.

34. Seifarth C, Kreis ME, Gröne J (2015) Indications and Specific Surgical Techniques in Crohn's Disease. Viszeralmedizin 31(4): 273-279.

35. Melik K, Mehmet G, Ahmet A, Can S, Eren E, et al. (2023) Current Status and Surgical Technique for Restorative Proctocolectomy with Ileal Pouch Anal Anastomosis. Balkan Med J 40(4): 236-243.

36. Lightner AL, Pemberton JH, Dozois EJ, Larson DW, Cima RR, et al. (2017) The surgical management of inflammatory bowel disease. Curr Probl Surg 54(4): 172-250.

37. Lightner AL, Vogel JD, Carmichael JC, Keller DS, Shah SA, et al. (2020) The American Society of Colon and Rectal Surgeons Clinical Practice Guidelines for the Surgical Management of Crohn's Disease. Dis Colon Rectum 63(8): 1028-1052.

38. Vilchez V, Lightner AL (2023) Surgical Management of Crohn's Disease. Gastroenterol Clin North Am 51(2): 353-367.

39. Angriman I, Pirozzolo G, Bardini R, Cavallin F, Castoro C, et al. (2023) A systematic review of segmental vs subtotal colectomy and subtotal colectomy vs total proctocolectomy for colonic Crohn's disease. Colorectal Dis 19(8): e279-e287.

40. Meima - van Praag EM, Buskens CJ, Hompes R, Bemelman WA (2021) Surgical management of Crohn's disease: a state-of-the-art review. International Journal of Colorectal Disease.

41. Celentano V, Pellino G, Rottoli M, Poggioli G, Sica G, et al. (2021) Surgical treatment of colonic Crohn's disease: a national snapshot study. Langenbecks Arch Surg 406(4): 1165-1172.

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