



Excisional haemorrhoidectomy in Crohn's disease — is it time to question an old dogma?

Keith J. Geraghty¹ · Colum A. O'Reilly² · Peter M. Neary^{1,3}

Received: 16 August 2023 / Accepted: 1 November 2023 / Published online: 14 November 2023
© The Author(s), under exclusive licence to Royal Academy of Medicine in Ireland 2023

Abstract

Background Haemorrhoidectomy in Crohn's disease is controversial due to fears over poor wound healing leading to proctectomy. We aim to review the available literature and establish the role of excisional haemorrhoidectomy in Crohn's disease.

Methods A review of the current scientific literature was conducted using Medline, PubMed and the Cochrane Central Registry of Controlled Trials. Clinical trials from 2005 to present, reporting outcomes of excisional haemorrhoidectomy in Crohn's disease, were included. Review articles and case reports were excluded.

Results A cohort of 67 patients across four studies was included in this review. There were no reported cases of proctectomy related to haemorrhoidectomy or poor wound healing. One patient (1.5%) had a non-healing wound post-operatively. Four (6%) cases of post-operative bleeding were identified, two (3%) patients were diagnosed with anal fissures and two (3%) were treated after developing perianal abscess post-procedure. There was one (1.5%) case of urinary retention, and one (1.5%) subject developed an anal stricture.

Conclusion The current available evidence suggests a role for excisional haemorrhoidectomy in Crohn's disease patients with well-controlled symptomatic disease, though further prospective analysis is certainly warranted. The preferred operation (open vs closed) remains unclear.

Future recommendations Further prospective trials are required to investigate the optimal approach to haemorrhoidectomy in Crohn's disease.

Keywords Crohn's disease · Haemorrhoidectomy · Haemorrhoids · Postoperative outcomes

Introduction

Crohn's disease (CD) was first described by Dr. Burrill B. Crohn and colleagues in 1932 [1]. CD is a chronic idiopathic inflammatory bowel condition that can affect the entire gastrointestinal tract from the mouth to the anus. While nearly one-third of patients with CD have symptomatic perianal disease, haemorrhoids represent only 1–2% of this pathology

[2]. Prevalence of haemorrhoids in the general population is reportedly as high as 39% [3]. This discordance in prevalence may be due to an underestimation in the CD cohort as a consequence of the shared symptomatology often observed between haemorrhoids and perianal CD. According to the most recent American Society of Colon and Rectal Surgeons (ASCRS) guidelines, excisional haemorrhoidectomy is the optimal treatment for medically refractory grade 3 and 4 haemorrhoids in the general population [4]. Nonetheless, optimal treatment of haemorrhoids in CD patients remains unclear due to a paucity of evidence in the scientific literature. In a recent systematic review, studies ranging from 1977 to 2013 were analysed. The findings described the long-standing assumption that surgical intervention for the management of haemorrhoids in CD leads to adverse outcomes, often requiring proctectomy [5]. This conclusion is likely related to the scarcity of evidence relating to interventional trials since the 1980s. However, with recent advancements in both medical and surgical treatment options for

This paper has not been presented at any meetings or submitted for publication to any other journal

✉ Keith J. Geraghty
Keithgeraghty21@rcsi.com

¹ Department of Surgery, University Hospital Waterford, Waterford, Ireland

² Department of Surgery, Connolly Hospital Blanchardstown, Dublin, Ireland

³ University College Cork School of Medicine, Cork, Ireland

CD, there has been a recent emergence of new data. We wish to analyse the current studies and discuss the most up to date findings.

Methods

A systematic search of Medline, PubMed and the Cochrane Central Registry of Controlled Trials was performed to retrieve studies reporting the results of excisional haemorrhoidectomy in patients with CD. The following search terms were used in the search algorithm: (Crohn's OR Crohn's disease) AND (haemorrhoidectomy OR excisional haemorrhoidectomy). The latest search was performed on the 1st of February 2022. All articles published since 2005 which reported outcomes following excisional haemorrhoidectomy in patients with CD were included for analysis. Articles published prior to 2005, review articles and case reports were excluded from our analysis. The following information regarding each eligible study was recorded: authors' names, journal, year of publication, country/countries in which the study was undertaken, complications, wound healing times and level of disease activity across included cohorts.

Results

Four studies met our inclusion criteria [6–9]. A cohort of 67 CD patients, 51% of which were male, underwent surgical intervention for the management of their haemorrhoidal disease. The mean age of patients across the studies was 44.9 years.

Complications

Complications were classified as early (≤ 30 days) or late (> 30 days). There were no recorded cases of intestinal diversion or proctectomy related to haemorrhoidectomy or poor

wound healing [6–9]. In regard to early complications, there were four cases of bleeding post-operatively, across three of the studies [7–9]. All cases of haemorrhage were managed non-operatively [7–9]. Two cases of perianal abscess formation were noted [6, 9]; however, McKenna et al. noted one of these patients underwent concurrent lateral internal sphincterotomy for an anal fissure and skin tag excision at the index operation [6]. One case of urinary retention post-procedure was recorded [6]. Late complications included one case anal stricture and one case of impaired wound healing [9]. A list of all complications can be seen in Table 1.

Wound healing

McKenna et al. found no evidence of delayed wound healing in their CD population post haemorrhoidectomy [6]. The average time to wound healing after surgery was 71.1 days (± 21 days) and 38 days (± 8 days) for Alam et al. and D'Ugo et al. respectively [7, 8]. Lightner et al. reported one case of non-healing wound, which required a wound revision and eventual fistulotomy as the patient's perianal CD worsened [9].

Disease activity

At the time of surgery, Alam et al. noted four patients were in remission without medication, one patient was receiving corticosteroids, two were on 5-aminosalicylic acid (ASA), four were on immunosuppressants and two were on biologic treatments [7]. D'Ugo et al. only included patients who were classified as stable intestinal disease, steroid free at the time of surgery and with Crohn's Disease Activity Index (CDAI) < 150 [8]. McKenna et al. described that at the time of intervention, seventeen patients were on biologics, twenty-four patients were taking immunomodulators and sixteen were on corticosteroids [6]. Seventy-one patients had an endoscopic examination within 1 year of the intervention, with 63% of this cohort noted to have a normal ano-rectum region specifically [6]. In the trial by Lightner et al., two-thirds of patients had other perianal

Table 1 Complications post-excisional haemorrhoidectomy in CD patients

Authors	Country	Number of patients	Complications (number of patients)	Median follow-up time (months)
Alam et al. 2021 [7]	France	13	Bleeding (2)	15.1
Lightner et al. 2020 [9]	USA	36	Anal stricture (1) Non-healing wound (1) Perianal abscess/fistula (1) Bleeding (1)	31.5
McKenna et al. 2019 [6]	USA	11	Urinary retention (1) Perianal abscess (1) *	30
D'Ugo et al. 2013 [8]	Italy	7	Bleeding (1)	37

USA United States of America

*Post lateral internal sphincterotomy, haemorrhoidectomy and skin tag excision

disease at the time of haemorrhoidectomy: six with perianal fistula, six having anal fissure, twelve patients with perianal skin tags and one with condyloma acuminata [9]. Nine and eight patients were noted to have corticosteroids or immunomodulators within 4 weeks of surgery, respectively. Biologic therapy was recorded in nine patients within 12 weeks of the procedure [9].

Discussion

Haemorrhoidectomy in CD has been largely viewed as controversial. This is due to studies from the 1970s and 1980s reporting very poor outcomes, with up to 50% of patients requiring proctectomy secondary to poor wound healing [10, 11]. Since these papers were published, there has been a hesitancy to approach haemorrhoids in CD with surgical intervention. A consequent lack of trials investigating the optimal treatment options has left the problem essentially unexamined.

We found no evidence suggesting proctectomy is inevitable after surgical intervention for CD patients with haemorrhoids. Post-operative complications were mainly early (73%), and the majority were managed conservatively [6–9]. There was one patient who exhibited impaired wound healing post-haemorrhoidectomy [9]. Wound healing in the general population undergoing haemorrhoidectomy is described between 19.6 and 48.3 days [17]. CD patients in our cohort exhibited delayed healing in comparison: 71.1 days (± 21 days) and 38 days (± 8 days) [7, 8]. One late complication, which required further surgical intervention (Clavien-Dindo IIIb) [12], was described amongst the cohort [9]. This highlights a clear disparity to the previous reported incidence of post-operative complications, with over 50% of patients having severe complications in the 1970s [10]. Perhaps this is due to advanced medical management options, the development of immunomodulators and biologic therapies which allow for better disease control and wound healing. There is also a clear theme amongst all papers in this study, in which appropriate patient selection is a pivotal aspect to managing CD patients with haemorrhoids. This may allude to patients who have failed non-operative measures, have significantly impacted quality-of life due to their haemorrhoids and are aware of the potential risks and complications associated with haemorrhoidectomy in CD.

Complication rates post-excisional haemorrhoidectomy in the general population are low [4]. The most common reported post-procedural issues is bleeding, with rates of 1–2% [4]. In our review, the rate of bleeding post-operatively was 6% [7–9]. Acute urinary retention is reported to occur between 1 and 15% of the general population post-haemorrhoidectomy [4]. We noted a 1.5% incidence of urinary retention in the CD cohort [6]. Post-operative pain is a common issue cited in the literature relating to the general

population [4]; however, none of the included studies assessed post-operative pain as an outcome [6–9]. When comparing the post-haemorrhoidectomy complications in the general population versus the CD cohort, our data suggests that excisional haemorrhoidectomy is a safe treatment option for carefully selected CD patients.

Although active anorectal mucosal inflammation was not specifically mentioned in the outcomes of papers in this study, it is an important factor to consider for patient selection. Regarding perianal procedures in CD, many studies evaluating endo-rectal mucosal advancement flaps (AF) exclude patients with active inflammation [14–16]. A systematic review by Stellingwerf et al. suggested “surgical closure by AF can be attempted only in patients without proctitis” [15]. Healing rates for CD patients after AF were reported as 67.5% [14] and 61% [15]. Only one case of poor healing was mentioned in our review [9]. This is not comparable to the healing rates in AF, albeit a comparison of differing pathologies. Surgical intervention during active inflammation is not investigated in the current literature [6–9, 14–16]. Perhaps this is due to the long-standing dogma of avoiding surgical intervention in CD patients. This could also be due to advances in medical therapies, reducing the rates of inflammation and need for surgical intervention. Prospective studies, including patients with proctitis/mucosal inflammation, are required to investigate this further.

When discussing surgical technique, only one paper, D’Ugo et al., reported the approach for haemorrhoidectomy, i.e. open or closed [8]. Although, they did not distinguish the operations with regard to post-operative complications. Alam et al. stated the use of arterial ligation and mucopexy in five patients; however, two of these patients developed post-operative anterior anal strictures [7], further promoting the relative safety of excisional haemorrhoidectomy in CD. The remaining papers fail to elaborate on the surgical approach applied throughout their cohort [6, 9]. Interestingly, there is no mention of the use of haemorrhoidopexy amongst the CD cohort of patients [6–9]. In a 2012 study investigating minimally invasive techniques, Doppler-guided haemorrhoidal arterial ligation was proven a safe and effective treatment option for grade III haemorrhoids amongst CD patients with no rectal involvement [13]. There have also been advancements in non-operative management of haemorrhoids over the period studied. Rubber-band ligation (RBL), infrared coagulation, radiofrequency ablation and sclerotherapy have been employed successfully for grade 1 and 2 haemorrhoids [18]. The most effective of these methods is RBL, which has been shown to be superior to sclerotherapy [19] and infrared coagulation [20]. Further prospective studies with larger patient populations may provide more definitive data on the optimal treatment for haemorrhoids in CD.

Our review compares the findings of current trials in this area to the more historical reports. The recent data indicates that proctectomy secondary to impaired wound healing is not nearly as common as previously described. We found post-haemorrhoidectomy complication rates in CD are comparable with those in the general population. This may be due to advancements in medical and surgical treatment options for haemorrhoidal CD. However, there is no clarity provided from the studies in regard to what surgical approach is optimal. Further enquiry into open vs closed haemorrhoidectomy in CD, surgical intervention with active mucosal inflammation and the role of other treatment options are required.

Conclusion

Previous studies have obstructed the surgical management of haemorrhoids in CD. The more recent data displays a different picture to that of the past. We recommend further examination of this cohort of patients with prospectively designed clinical trials. Other promising avenues of treatment options should also be explored.

Author contribution KG designed the study. KG and CO'R reviewed the literature. KG wrote the paper. All authors were involved in data analysis. PN guided paper re-drafting. All authors commented on various iterations of the paper.

Declarations

Competing interests The authors declare no competing interests.

References

1. Wilks S (1859) Morbid appearances in the intestine of Miss Bankes. *London Medical Times & Gazette* 2(2):264–265
2. Eglinton TW, Barclay ML, Gearry RB, Frizelle FA (2012) The spectrum of perianal Crohn's disease in a population-based cohort. *Dis Colon Rectum* 55(7):773–777
3. Riss S, Weiser FA, Schwameis K et al (2012) The prevalence of hemorrhoids in adults. *Int J Colorectal Dis* 27(2):215–220
4. Davis BR, Lee-Kong SA, Migaly J et al (2018) The American Society of Colon and Rectal Surgeons clinical practice guidelines for the management of hemorrhoids. *Dis Colon Rectum* 61(3):284–292
5. Cracco N, Zinicola R (2014) Is haemorrhoidectomy in inflammatory bowel disease harmful? An old dogma re-examined *Colorectal Disease* 16(7):516–519
6. McKenna NP, Lightner AL, Habermann EB, Mathis KL (2019) Hemorrhoidectomy and excision of skin tags in IBD: harbinger of doom or simply a disease running its course? *Dis Colon Rectum* 62(12):1505–1511
7. Alam A, Fathallah N, Spindler L et al (2021) Hemorrhoidal surgery in patients with IBD: caution is the parent of safety. *Tech Coloproctol* 1–3
8. D'Ugo S, Franceschilli L, Cadeddu F et al (2013) Medical and surgical treatment of haemorrhoids and anal fissure in Crohn's disease: a critical appraisal. *BMC Gastroenterol* 13(1):1–7
9. Lightner AL, Kearney D, Giugliano D et al (2020) Excisional hemorrhoidectomy: safe in patients with Crohn's disease? *Inflamm Bowel Dis* 26(9):1390–1393
10. Jeffery PJ, Ritchie J, Parks AG (1977) Treatment of haemorrhoids in patients with inflammatory bowel disease. *The Lancet* 309(8021):1084–1085
11. Keighley MRB, Allan RN (1986) Current status and influence of operation on perianal Crohn's disease. *Int J Colorectal Dis* 1(2):104–107
12. Clavien PA, Barkun J, De Oliveira ML et al (2009) The Clavien-Dindo classification of surgical complications: five-year experience. *Ann Surg* 250(2):187–196
13. Karin E, Avital S, Dotan I et al (2012) Doppler-guided haemorrhoidal artery ligation in patients with Crohn's disease. *Colorectal Dis* 14(1):111–114
14. Soltani A, Kaiser AM (2010) Endorectal advancement flap for cryptoglandular or Crohn's fistula-in-ano. *Dis Colon Rectum* 53(4):486–495
15. Stellingwerf ME, Van Praag EM, Tozer PJ et al (2019) Systematic review and meta-analysis of endorectal advancement flap and ligation of the intersphincteric fistula tract for cryptoglandular and Crohn's high perianal fistulas. *BJS open* 3(3):231–241
16. de Groof EJ, Buskens CJ, Ponsioen CY et al (2015) Multimodal treatment of perianal fistulas in Crohn's disease: seton versus anti-TNF versus advancement plasty (PISA): study protocol for a randomized controlled trial. *Trials* 16(1):1–8
17. Ho YH, Buettner PG (2007) Open compared with closed haemorrhoidectomy: meta-analysis of randomized controlled trials. *Tech Coloproctol* 11:135–143
18. Altomare DF, Giuratrabocchetta S (2013) Conservative and surgical treatment of haemorrhoids. *Nat Rev Gastroenterol Hepatol* 10(9):513–521
19. Awad AE, Soliman HH, Abou Saif SA et al (2012) A prospective randomised comparative study of endoscopic band ligation versus injection sclerotherapy of bleeding internal haemorrhoids in patients with liver cirrhosis. *Arab J Gastroenterol* 13(2):77–81
20. MacRae HM, McLeod RS (1995) Comparison of hemorrhoidal treatment modalities: a meta-analysis. *Dis Colon Rectum* 38:687–694

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.