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# Crohn's Disease Complicated by Ileosigmoid Fistula – Synchronous Resection or Primary Sigmoid Repair, One or Two-stage Procedure? A systematic review of the literature and prospective case series

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# **Abstract**

**Introduction:** Although ileosigmoid fistulas (ISFs) in Crohn's disease (CD) are rare they can be quite challenging, especially for the inexperienced surgeons. Furthermore, current guidelines offer no clear recommendation regarding the surgical strategy in such cases. A systematic review of the literature to determine the best surgical strategy and a prospective case series are presented herein.

**Materials and methods:** The systematic review was performed according to PRISMA guidelines. A single-center prospective database from January 1, 2014 to August 20, 2019 is presented. Age, duration of CD, and the rates of ISF, emergency, preoperative diagnosis, type of surgery, type of stoma, and complications were analyzed and a prospective case series.

**Results:** Eleven of 69 papers with a total of 505 patients were included in the systematic analysis. The rate of ISF was 3–5% of all CD patients. The combined preoperative detection rate of all modalities was 71%. Primary repair was performed in 42% of the cases; the rate of stoma was 31.5% with a similar proportion in primary repair and sigmoid resection.

In the presented series, 35 of 176 patients with CD were operated (51% in an emergency setting). There were 7 cases with ISFs (4% of all and 20% of the operated patients). Preoperative diagnosis was made at 57%. Primary repair was performed in 71%, and a two-stage intervention with a stoma – in 58% of patients.

**Conclusions:** Primary repair should be attempted in all cases in which the sigmoid colon is disease-free or is not involved in the adjacent abscess. The synchronous resections are not a mandatory indication for the stoma, but rather a tailored approach is recommended with an evaluation of the risk factors. Based on the available literature, no clear recommendation regarding the type of stoma can be made.

# Keywords

Crohn's disease, ileosigmoid fistulas, surgical treatment



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# INTRODUCTION

Despite years of intensive research, Crohn's disease (CD) still remains an incurable disease. The surgical treatment is not definitive – it is primarily indicated to overcome the disease's complications.<sup>1</sup> It is associated with a high rate of further complications and recurrences. The fistulising phenotype is a sign of more aggressive disease and more frequently requires a multidisciplinary approach. Various kinds of internal fistulas can occur during the natural course of CD at an overall rate of 18%–34%. Usually, they are accompanied by a higher rate of perianal fistulas/abscesses, intra-abdominal abscesses, and concomitant small and large bowel disease.<sup>2,3</sup>

The ileosigmoid fistulas account for 5% in CD and 20% of the fistulising abdominal CD.<sup>2,4</sup> Despite the vast body of literature, only few case series report the outcome of the surgical treatment of ISFs. Furthermore, the current guidelines offer no clear recommendation regarding the surgical strategy in such cases which is left at the discretion of the surgeon in the theatre.<sup>5-7</sup> Frequently, the ISFs are unexpected intraoperative findings which can change the planned operative tactic. Ileocecal resection or right colectomy is a mandatory step of the surgical approach. However, the stumbling stone in the decision making remains the fate of the sigmoid colon. Generally, there are three options. The surgeon must decide whether to perform sigmoid resection or only the primary repair of the fistula defect. The second question is when to create a stoma, and the third is what type of stoma to choose.

To our knowledge, no systematic review addressing these questions has been published to date. The present work primarily aims to perform a systematic review of the literature to determine the most appropriate surgical strategy in the case of ISFs. Additionally, a prospective case series of the surgically treated ISF in our center is presented.

# MATERIALS AND METHODS

A literature search in PUBMED, MEDLINE, Web of Knowledge, and Google Scholar using the following keywords: "Crohn's disease", "ileosigmoid fistulas", and "surgical treatment" was performed without time and language restrictions. Only case series reporting surgical treatment of ileosigmoid fistulas were included, whereas all other publications were excluded. Only studies reporting the primary and secondary outcomes given bellow were included.

As primary outcomes we determined the rates of ISF, the duration of CD, presence of abscess or another emergency, rates of sigmoid resection and primary repair, rate, and type of stoma. The rates of definite preoperative diagnosis and synchronous occurrence of other fistula types were used as a secondary outcome.

The presented case series is based on a single-center prospective database created by a multidisciplinary IBD team in a tertiary referral center. All cases with ISF treated from January 1, 2014 to August 20, 2019 were included. The following variables were analyzed: rate of surgically treated patients, frequency of fistulising CD, rate of ISF with subgroup analysis by age, duration of CD, presence of abdominal abscess or another emergency, laboratory parameters (hemoglobin, serum albumin, platelets), weight reduction, rate of concomitant fistulas (other than ISF), preoperative diagnostic success, type of surgery for ISF, overall rate and type of stoma, complication rate, length of hospital stay and follow-up.

# **RESULTS**

Eleven of 69 papers with a total of 505 patients were included in the systematic analysis.<sup>4,8-18</sup> Because of the small number of studies and sample size and the non-homogeneous information, a meta-analysis was not attempted. The results from the literature search are shown in **Figs 1-3**.

According to the literature, the frequency of ISF is 3–5% of all patients and 20–41% of all intra-abdominal fistulas in CD. $^{2-4,10}$  Concomitant enterovesical fistulas were reported in 8–30% of patiewnts $^{4,10,11,13,16,17}$  whereas perianal disease was observed in 10–12% $^{10,17}$ , excluding the small series of Broe et al. who reported 53%. $^{10}$  Other intra-abdominal fistulas were seen in 17-37%. $^{4,17}$  The mean duration of CD was 6.3 years (range 4-9 years). A tender intra-abdominal mass, abscess, or obstruction were an indication for surgery in a mean of 33% (5–91%). $^{4,11,13,17}$  In the most extensive database, in 86% of the cases, the indication for operation was small bowel obstruction. $^{19}$ 

The rate of the correct preoperative diagnosis varied between 33% and 82% <sup>4,10,15,17</sup>, but significantly depended on the diagnostic modality used. The combined detection rate of all modalities was 63–71%.<sup>17,19</sup> The CT scan can detect 41% of the ISFs, whereas indirect signs exist in 82%.<sup>17</sup> The contrast bowel examination provides a correct diagnosis in 21–82% <sup>4,10,11,13,16</sup>, whereas colonoscopy was specific in 14–54% of the cases. Primary repair was performed in 58% of the cases; the total stoma rate was 32% (**Fig. 2**) with a similar proportion in primary repair and sigmoid resection (**Fig. 3**).

Our experience includes a total of 176 patients with CD with overall of 292 admissions during the period 2014-2019. Of these, 35 were operated (20%) with a total of 44 surgical procedures performed. Eighteen of them were operated in an emergency setting (51.4%). There were 7 cases with ISFs, which represents 4% of all cases and 20% of the operated. Two of seven had a synchronous enterovesical fistula (28.6%), which is 5.4% of operated cases.

The mean age was 33.7 years, with a mean duration of CD 7.4 years. The mean levels of hemoglobin, platelets, and serum albumin were 12.7 g/dL,  $373\times10^9$ /L, 3.4 g/dL, respectively (**Table 1**). In all patients, there was a significant weight loss – a mean of 13.8 kg. A definite preoperative diagnosis was made in 4/7 cases (57%) by colonoscopy (n=3) and CT (n=1) (**Fig. 4**).

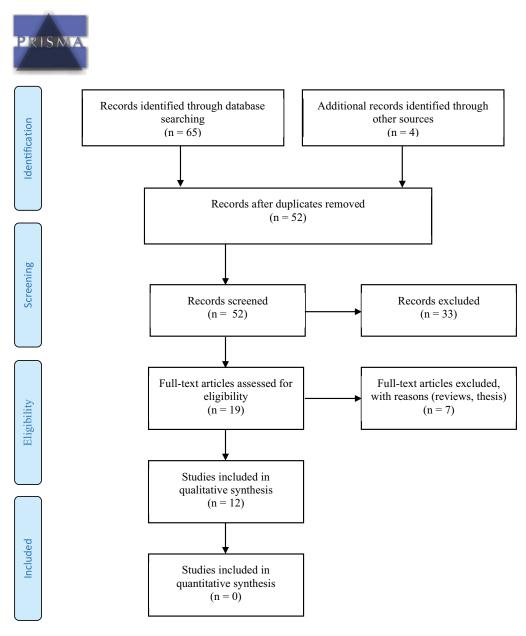
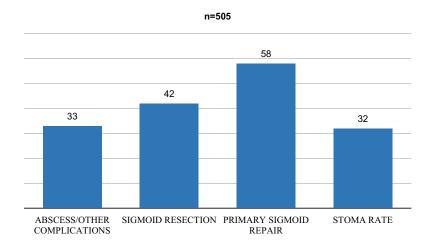
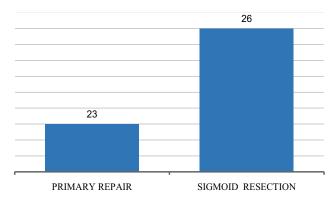


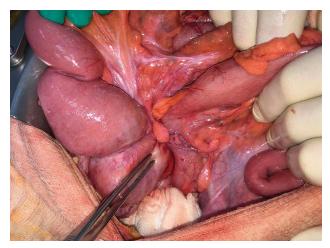
Figure 1. PRISMA flow chart.



**Figure 2.** The outcome of the surgical treatment of ISFs (%).



**Figure 3.** The total rate of stoma in primary repair and sigmoid resection (only studies reporting complete information are included) (%).

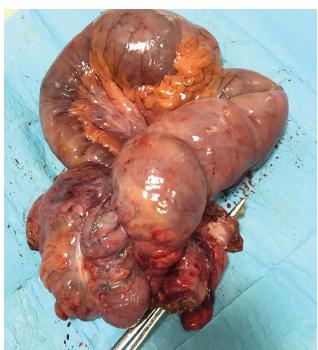


**Figure 5.** The same case - an intraoperative view of the ISF.



**Figure 4.** CT scan showing ISF (yellow arrow).

One-stage operation was performed in three of our cases. Four patients underwent a two-stage intervention with the creation of stoma at the index operation – 2 primary repairs and two sigmoid resections (Figs 5, 6), (Table 2). These four patients had at least two risk factors (emergency setting, anemia, low albumin level, or weight



**Figure 6.** The specimen after ileocecal resection and partial sigmoid resection.

**Table 1.** Characteristic of the included cases

n	Age	Duration of CD years	Blood			
			Hemoglobin g/dL	Platelets ×10 <sup>9</sup> /L	Albumin g/dL	Weight loss kg
1	37	2	13.8	269	4.3	5
2	22	12	0.94	582	2.8	20
3	20	7	13.3	237	3.8	5
4	43	5	12.9	375	2.6	20
5	36	4	11.4	579	3.0	40
6	31	10	12.4	332	3.2	2
7	47	12	15.7	241	4.0	5
mean	33.7	7.4	12.7	373	3.4	13.8

**Table 2.** Characteristic of the included cases

n	Emergency	PD*	Type of operation
1	no	yes	right colectomy + primary repair resection of urinary bladder Hartmann's because of leak
2	no	no	ileocecal resection + primary repair suture of urinary bladder
3	ileus	yes	ileal resection + primary repair suture of urinary bladder ileostomy
4	ileus	no	ileocecal resection + sigmoid resection ileo- and right colostomy
5	abscess	no	right colectomy + primary repair ileo- and transverse colostomy
6	abscess	yes	ileocecal resection + sigmoid resection ileo- and right colostomy
7	no	yes	ileocecal resection + primary repair

<sup>\*</sup>PD - preoperative diagnosis (CT, colonoscopy)

loss). Complications occurred in two patients (28%) – parastomal hernia requiring further repair, and leak of the primary sigmoid repair, which required Hartmann's procedure.

The patients were followed-up for a mean of 29.3 months (range 3-120 months). Endoscopic recurrence with stenosis of the sigmoid anastomosis was observed in one case, which precluded the closure of ileo- and transverse colostomy. Early endoscopic and clinical recurrence in the third month after restoration of the gastrointestinal tract was observed in another patient.

# DISCUSSION

Although fistulas are typical for CD, the ISFs are relatively rare (3%–5% of all cases), which was confirmed by the present study (4%), and 20% of the fistulising CD. An important fact is the low rate of preoperative diagnosis even today. In almost one-third of the cases, the ISFs remains unrecognized until the surgical exploration similarly. Lospite the small sample size, our experience (57% detection rate) is consistent with the most extensive database with 1615 cases reporting 71% cumulative diagnostic rate for all imaging modalities. The CT detected about 40% of the ISFs, whereas the colonoscopy was specific in only 14-54%. Li,13,17

Interestingly, Korelitz et al. demonstrated that the segmental sigmoid polyps (single or a cluster) could be a reliable colonoscopic indicator for ISF.<sup>20</sup> In their more recent series, 53% had segmental polyposis, while 40% had sigmoid structure.<sup>19</sup> Another finding with practical importance is the high rate of enterovesical fistula in the presence of ISF – 8%–30% according to the literature and 29% in the

present series. These data have two practical implications for the surgeons. Firstly, they should always perform a thorough exploration of the abdominal cavity with a deliberate seeking of ISFs. Secondly, they should have a flexible mentality and reliable decision-making tool to change the operative tactic in the presence of ISF.

The ISFs requires ileocecal resection or right hemicolectomy with simultaneous management of the ISF. The critical point in decision making is the exact mapping of the abdominal spread of the CD. Three essential questions need to be addressed during the surgical treatment of ISF.

First, the surgeon must decide whether to perform sigmoid resection or only do the primary repair of the fistula defect. The segmental resection removes the grossly affected part of the sigmoid. It is indicated in the presence of sigmoid Crohn's disease, significant defect, defect on the mesenteric side of the bowel, and severe involvement of the sigmoid wall in the abscess. 9,15,16 According to the literature, 42% of the cases underwent sigmoid resection (Fig. 2). In the case of severe colonic CD, a method of choice is the subtotal colectomy or proctocolectomy when the intractable rectal and perianal disease is present. 8,9,17 In all other cases, a primary repair (excision or wedge resection with a simple suture of the sigma) is indicated.

The second question is when to create a stoma. In the second half of the 20th century Garlock cited by Broe et al. "recommended bypass of the fistula by ileo-transverse colostomy" to promote the fistula healing in the cases without resection. <sup>10</sup> In 1977, Fazio et al. performed combined resection in 15/27 cases and stated that 'we believe that the "conservative" procedure is sigmoidal resection. <sup>8</sup> Probably the main reason for this approach was the presence of malnutrition in all cases. Another reason, perhaps, is their uncertainty about "the explanation for successful outcomes

of surgical treatment in the four patients who had their sigmoidal fistulas closed".

In the current surgical practice, the ileocecal resection with a simultaneous sigmoid resection is not a mandatory indication for a stoma, but rather a tailored approach is recommended. Several risk factors for intra-abdominal complications were identified, such as low albumin levels, preoperative steroid use, intra-abdominal abscess, and previous surgery. Based on the literature, the stoma is indicated when at least one of the following risk factors is present: intra-abdominal abscess, steroids > 20 mg/day, albumin <35 g/l, need for additional surgical intervention except for the ileocecal resection, severe perianal disease, biological therapy, and previous failure of the surgical treatment.  $^{4,10,11,15-17}$ 

In the cases with more complex procedures, Young-Fadok et al. reported colostomy and ileostomy in two sigmoid repairs, respectively, and one sigmoid resection with diverting colostomy. Melton et al., however, demonstrated a high rate of a stoma (51%), but notably, in their series more patients underwent additionally small bowel surgery (30% vs. 12%), received a high dose of steroids (>20 mg prednisone) and had low preoperative albumin level (<3.5 g/dL). The literature data show a similar rate of a stoma both in primary repair and sigmoid resection (**Fig. 3**).

The third important question is what type of stoma to opt for. Several options have been described in the included series such as synchronous ileo- and ascendo-/transverse colostomy (after ileocecal resection or right colectomy)<sup>8,17</sup>, loop colostomy<sup>4,10,11</sup>, terminal colostomy after Hartmann's procedure, end ileostomy in cases with subtotal colectomy or proctocolectomy, protective loop ileostomy in ileorectal anastomosis.<sup>8,9,17</sup> In some cases, diverting ileostomy proximal to all anastomoses was used.<sup>8,10,17</sup> There is no convincing evidence to recommend a particular type of stoma (the types reported in the literature are given as supplementary material).

We prefer, when indicated, ileo- and ascendo-/transverse colostomy because it is easier for closure with two linear staplers in antiperistaltic fashion through a small incision. A colostomy is preferable in concomitant severe perianal disease because of more comfortable care and improved comfort for the patient. Despite the limited literature data and personal experience, we propose a decision-making algorithm with the caveat for a tailored approach in every case after a careful assessment of the local status and the known risk factors (**Fig. 7**).

Finally, several reports describe the laparoscopic management of the ISF. 18,22,23 In 1999 Watanabe et al. first described a simple and effective method for primary repair using a linear stapler in a case with ileorectal fistula. 22 Using this technique, Ballester-Pla et al. reported no leaks in a series with five patients. 23 In the most extensive series from Mount Sinai Hospital, Fennern et al. reported successful outcomes in 61 cases (35 primary repair and 26 sigmoid resections) with a 31% conversion rate. 18 A similar proportion is stated in an emergency setting, mostly due

to difficult exploration, unclear anatomy, or impossible adhesiolysis.<sup>24</sup>

The limitations of the present study reflect the retrospective design of the studies included in the systematic review, the small sample size, and the non-homogeneous information. Moreover, the studies cover an extended period (40 years), and thus a bias due to a change of the experience, and surgical practice could not be excluded.

# CONCLUSIONS

Due to the paucity of literature data, based on the available literature, we propose an algorithm with the caveat for a tailored approach. A primary repair should be attempted in the cases in which the sigmoid colon is disease-free or is not involved in an adjacent abscess, and the defect is not on the mesenteric border. The synchronous resection is not a mandatory indication for a stoma, but rather case-by-case decision is recommended after an evaluation of the risk factors. No clear recommendation regarding the type of stoma can be made.

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# Conflict of Interest

The authors reported no conflict of interest.

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# Data availability

The data used to support the findings of this study are available from the corresponding author upon request.

### REFERENCES

- Windsor A. Ileal Crohn's disease is best treated by surgery. Gut 2001; 51:11–12.
- Yoon Y, Yu C, Yang S, et al. Intra-abdominal fistulas in surgically treated Crohn's disease patients. World J Surg 2010; 34(8):1924–9.
- Regan J, Salky B. Laparoscopic treatment of enteric fistulas. Surg Endosc 2004; 18(2):252–4.
- Saint-Marc O, Vaillant J, Frileux P, et al. Surgical management of ileosigmoid fistulas in Crohn's disease: role of preoperative colonoscopy. Dis Colon Rectum 1995; 38(10):1084–7.
- . Bemelman W, Warusavitarne J, Sampietro G, et al. ECCO-ESCP Con-

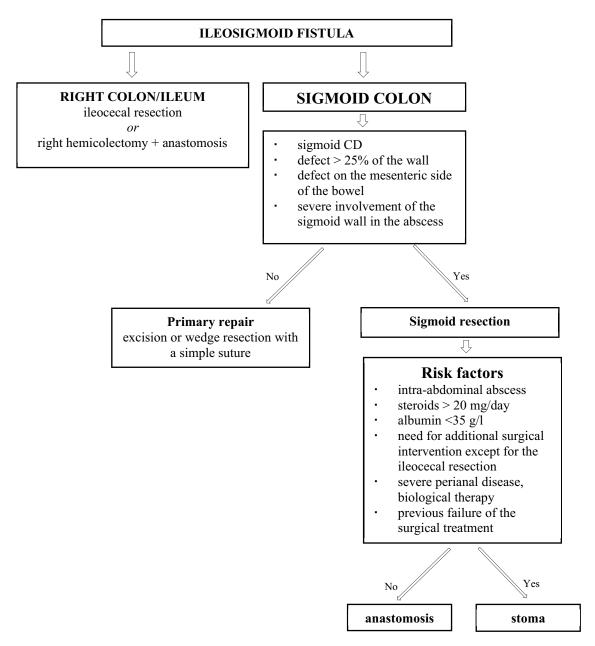


Figure 7. Decision-making flowchart in ISFs.

sensus on Surgery for Crohn's disease. J Crohn's Col 2018; 12(1):1-16.

- Brown S, Fearhead N, Faiz O, et al. The Association of Coloproctology of Great Britain consensus guidelines in surgery for inflammatory bowel disease. Colorectal disease 2018: 20(Suppl. 8):3–117.
- 7. Park J, Yang S-K, Ye B, et al. Second Korean guidelines for the management of Crohn's disease. Intest Res 2017; 15(1):38–67.
- Fazio V, Wilk P, Turnbull R, et al. The dilemma of Crohn's disease: ileosigmoid fistula complicating Crohn's disease. Dis Colon Rectum 1977; 20:381–6.
- Heimann T, Greenstein AJ, Aufeses A. Surgical management of ileosigmoid fistula in Crohn's disease. Am J Gastroenterol 1979; 72: 21-4.
- 10. Broe P, Cameron J. Surgical management of ileosigmoid fistulas in Crohn's disease. Am J Surg 1982; 143(5):611–3.
- 11. Block G, Schraut W. The operative treatment of Crohn's enteritis complicated by ileosigmoid fistula. Ann Surg 1982; 196(3):356–60.
- 12. van Dongen L, Lubbers E. Surgical management of ileosigmoid fistu-

- las in Crohn's disease. Surg Gynecol Obstet 1984; 159(4):325–7.
- 13. Schraut W, Chapman C, Abraham V. Operative treatment of Crohn's ileocolitis complicated by ileosigmoid and ileovesical fistulae. Ann Surg 1988; 207(1):48–51.
- Bezzi M, Pastore P, Bolignari S, et al. Surgical management of ileosigmoid fistulas in Crohn's disease. The Italian Journal of Surgical Sciences 1988; 18(2):131–5.
- 15. Michelassi F, Stella M, Balestracci T, et al. Incidence, diagnosis, and treatment of enteric and colorectal fistulae in patients with Crohn's disease. Ann Surg 1993; 218:660–6.
- 16. Young-Fadok T, Wolff B, Meagher A, et al. Surgical management of ileosigmoid fistulas in Crohn's disease. Dis Colon Rectum 1997; 40(5):558-61.
- Melton G, Stocchi L, Wick E, et al. Contemporary surgical management for ileosigmoid fistulas in Crohn's disease. J Gastrointest Surg 2009; 13:839–45.

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- Fennern E, Greenstein A, Williamson J. Laparoscopic vs. open surgical management of ileosigmoid fistulas in Crohn's disease. J Am Coll Surg 2017; 225(452):89–90.
- 19. Korelitz B, Kesar V, Taunk R. Sequential Crohn's ileitis, ileosigmoidal fistula, segmental sigmoid polyposis, and sigmoid stricture. The natural history. J Clin Gastroenterol 2017; 51:607–10.
- 20. Korelitz B, Taunk R, Kesar V. Segmental sigmoid polyposis as a colonoscopic indicator of an ileosigmoid fistula in Crohn's ileitis. J Crohn's Colitis 2015; 9(4):339–41.
- 21. Huang W, Tang Y, Nong L, et al. Risk factors for postoperative intra-abdominal septic complications after surgery in Crohn's disease: a meta-analysis of observational studies. J Crohns Colitis 2015; 9(3):293–301.
- 22. Watanabe M, Ohgami M, Teramoto T, et al. Laparoscopic ileocecal resection for Crohn's disease associated with intestinal stenosis and ileorectal fistula. Surg Today 1999; 29:446–8.
- 23. Ballester-Pla N, Pous-Serrano S, Palasi-Gimenes R, et al. Use of a linear stapler for the treatment of ileocolic fistula in Crohn's disease. Colorectal Dis 2016; 18(10):O385–O387.
- 24. Andonov D, Ivanov I, Filipov A, et al. Causes for conversion in laparoscopic treatment of mechanical ileus. Scripta Scient Med 2016; 48(Suppl. 1): doi: http://dx.doi.org/10.14748/ssm.v48i0.2303.
- Cleynen I, Gonzales JR, Figueroa C, et al. Genetic factors conferring an increased susceptibility to develop Crohn's disease also influence disease phenotype: results from the IBDchip European Project. Gut 2013; 62:1556–65.

# Болезнь Крона, осложнённая илеосигмовидным свищом – синхронная резекция или первичное восстановление сигмовидной кишки, одно- или двухэтапная процедура? Систематический обзор литературы и проспективных серий клинических случаев

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### Резюме

**Введение:** Хотя илеосигмоидные свищи (ИСС) при болезни Крона (БК) встречаются редко, они могут стать серьёзной проблемой, особенно для неопытных хирургов. Кроме того, текущие рекомендации не предлагают чётких инструкций относительно хирургической стратегии в таких случаях. Здесь представлен систематический обзор литературы для определения наилучшей хирургической стратегии и проспективной серии случаев.

**Материалы и методы:** Систематический обзор проводился в соответствии с рекомендациями PRISMA. Была представлена одноцентровая проспективная база данных с 1 января 2014 г. по 20 августа 2019 г. Были проанализированы возраст, продолжительность БК и частота ИСС, спешность, предоперационная диагностика, тип операции, тип стомы и осложнения, а также проспективные серии случаев.

**Результаты:** В систематический анализ были включены 11 из 69 статей с описанием 505 пациентов. Частота появления ИСС составляла 3–5% от всех пациентов с БК. Комбинированная частота выявления до операции составила 71%. Первичное восстановление установлено в 42% случаев; частота стомы составила 31.5% с аналогичной долей при первичном восстановлении и резекции сигмовидной кишки.

В представленных сериях оперированы 35 из 176 пациентов с БК (51% в экстренных случаях), 7 случаев с ИСС (4% всех случаев и 20% прооперированных). Предоперационный диагноз поставлен у 57%. Первичное восстановление установлено у 71%, двухэтапное вмешательство со стомой - у 58% пациентов.

**Заключение:** Первичное восстановление следует использовать во всех случаях, когда сигмовидная кишка не поражена заболеванием или не охвачена соседними абсцессами. Синхронизированные резекции не являются обязательным показанием для стомы, скорее рекомендуется индивидуальный подход с оценкой факторов риска. На основании доступной литературы нельзя дать чётких рекомендаций относительно стомы.

## Ключевые слова

болезнь Крона, илеосигмовидные свищи, хирургическое лечение

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