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Colocutaneous fistula complicating sigmoid diverticulitis

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ABSTRACT

Colocutaneous fistula is a very rare complication of colonic diverticular disease. Herein we describe a case with a fistula connecting the sigmoid with the left flank area complicating diverticulitis of the sigmoid colon. An 85-year-old female patient with a history of acute diverticulitis 3 months earlier, was admitted with a subcutaneous abscess in the left flank. The abscess was drained and subsequently a colocutaneous fistula was established. At operation the sigmoid colon with the fistulous tract were excised. The patient had no postoperative complications and at present, 2 years later, she fares well. Colocutaneous fistula is a serious complication of chronic diverticulitis and requires surgical excision for its definite treatment.

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1. Introduction

Diverticular disease is a common condition in western countries with relatively uncommon complications. Fistulae complicating diverticulitis are the result of a localized perforation into adjacent viscera, and occur in 4–23% of patients hospitalized for diverticular disease.¹ The types of fistulae include colovesical, colovaginal, colotubal, coloenteric, and colocutaneous fistulae.¹ Colocutaneous fistulae occur very rarely, accounting for 1–4% of the total number of fistulae complicating colonic diverticular disease.¹ Herein we describe a case of a fistula connecting the sigmoid colon with the left flank-lower lumbar area, due to diverticulitis of the sigmoid colon.

2. Presentation of case

An 85-year-old Caucasian female patient of Greek origin with a fecal fistula in the left flank-lower lumbar region was admitted in our Department for evaluation and surgical treatment.

The patient's past medical history included arterial hypertension, and no previous abdominal operations. She had diverticulosis of the sigmoid colon, known for at least 15 years; she suffered from constipation and two episodes of diverticulitis during the past five years.

Six months prior to admission the patient was hospitalized in a district hospital for an episode of acute diverticulitis. She had acute pain in the left lower abdominal quadrant, localized tenderness and a palpable mass at the left iliac fossa. The patient had an elevated temperature up to 39 °C, and marked leukocytosis. Com-

puterized tomography of the abdomen confirmed the diagnosis of diverticulitis and she received a 10-day regimen of intravenous ciprofloxacin and metronidazole. The clinical symptoms and signs gradually subsided and the patient was discharged 10 days later in good condition.

After a remission period of 2–3 months she was readmitted with a dull steady pain in the left lower lumbar area and a 3-day low-grade fever. She gradually developed an abscess in the left lumbar area, and she became febrile and toxic. The abscess was drained under local anesthesia. Pus cultures revealed the presence of Gram(–) microorganisms (*Escherichia coli* and *Bacteroides fragilis*). The patient's clinical condition improved, but two days later passage of gas and fecal material was noticed at the skin above the abscess area, indicating the presence of a colocutaneous fistula (Figs. 1 and 2).

An attempt for colonoscopy was unsuccessful due to a stenotic area in the distal sigmoid. An abdominal computed tomography revealed a communication between the inflamed sigmoid colon and the skin above the left lumbar area. The patient underwent an exploratory laparotomy, at which sigmoidectomy with fistulectomy was performed. The bowel continuity was re-established at the same operation. Pathology report of the sigmoid colon revealed thickening and inflammation of the specimen with an opening corresponding to the fistula orifice. Three months later and after an uneventful postoperative course the patient had a complete colonoscopy and few remaining diverticular orifices were observed in the descending colon with no evidence of inflammation. At present the patient is being well with no further problems.

3. Discussion

Colonic diverticular disease is a common clinical entity. Approximately 60% of the population of the western societies over the age of 60 will develop diverticulosis of the large bowel.¹ The inci-

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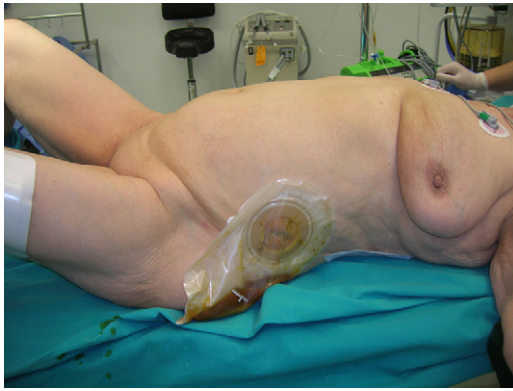


Fig. 1. Cutaneous fecal 'stoma'.

dence of diverticular disease increases with age. Consequently, as the population of a given society continues to age, the overall risk of associated complications continues to increase. In fact, 4–25% of patients with diverticulosis will develop a complication requiring hospitalization and 30–50% of these will require surgical intervention.²

The evolution of diverticular disease may be divided into two stages: (i) diverticular formation and (ii) diverticulitis with either pericolic (microabscess), pericolic phlegmon or abscess, intra-abdominal or pelvic abscess, and perforation leading to bowel obstruction, or bacteremia and septicemia.² Furthermore, the extension or rupture of a diverticular phlegmon or abscess into an adjacent organ may give rise to fistulae, most commonly colovesical ones. Other uncommon fistulae from diverticulitis have been identified, such as colouterine, colosalpingeal, coloseminal and ureterocolic.³

Current classification systems distinguish clinical stages of diverticular disease. The Hinchey classification, which is used to describe the stages of perforated diverticular disease has been used by many authors. A clinical classification by Hensen and Stock is probably even more suitable, due to its description of the quiescent as well as the acute stages of the disease. In this system, diverticulitis with fistula formation is classified as group IIb.⁴

Colocutaneous fistulae occur in about 1% of cases,^{1,2} and the majority of them arise almost exclusively as a complication of previous bowel resection for diverticulitis.⁵ The incidence of fis-



Fig. 2. CT scan showing the colocutaneous fistula in the left flank area.

tulization is higher in patients in whom an operation is performed in the presence of acute perforation or abscess. In such cases a colocutaneous fistula may coexist with a colovaginal or colovesical fistula.⁵ Distal obstruction due to inflammatory stenosis of the sigmoid or a preceding narrow-caliber anastomosis to the sigmoid has been found to be responsible for persistent fistulas.⁵ Recurrent attacks of diverticulitis create intra-abdominal adhesions predisposing to fistula formation.¹ In addition, colocutaneous fistulae may be the result of percutaneous drainage of diverticular abscesses without subsequent resection.⁶ However, spontaneous colocutaneous fistulae, as was the current case, are very rare.

Computed tomography-guided drainage is the initial management of choice in patients presenting with spontaneous or postoperative intra-abdominal abscess.⁶ This can postpone early postoperative reintervention. If a fistula develops after drainage, as occurred in our case, a definitive procedure can be deferred for a few weeks, with the drain left in the abscess cavity.⁶ Total parenteral nutrition can be administered in high output fistulae to decrease output and maintain nutritional status.

During the early period after the abscess formation, surgery is undertaken only if bleeding, gangrene, or peritonitis occurs, and in that case it should be limited to control of sepsis and proximal stoma formation. Definitive surgery is generally delayed for several weeks or months, until physiologic deficits have been restored and the intra-abdominal condition has improved.⁴ Successful surgery implies the resection of the enterocutaneous fistula and the associated diseased bowel up to an area free of inflammation and edema. Single stage bowel and fistula resection is feasible in most patients.^{2,3} Furthermore, the anastomosis should be clear of the fistula site and abscess cavity. A successful fistula closure is usually obtained after such an approach.⁶ Guidelines issued by the American Society of Colon and Rectal Surgeons now recommend elective colectomy after a single attack of acute diverticulitis or after non-operative management of complicated diverticulitis.⁷ Previously, elective resection had been recommended after two episodes of uncomplicated diverticulitis. This was based on historical data suggesting that recurrent attacks were less likely to respond to non-operative therapy.⁸ However, recent studies have not found any evidence that patients having subsequent uncomplicated attacks are less likely to respond to non-operative therapy.⁹ This has reduced support for routine elective resection. Advances in intensive care, antibiotics and application of CT-guided drainage procedures may account for the successful treatment of most patients in recent years. In a review of 10 studies on the natural history of diverticular disease, Janes et al. concluded that the probability of readmission with each subsequent attack diminishes and that there is limited evidence to suggest that patients are more likely to suffer complications.¹⁰ After recovering from an episode of diverticulitis, the risk of an individual requiring an urgent Hartmann procedure is 1 in 2000 patient-years of follow-up.¹⁰ Recent evidence has also shown that prophylactic resections are of little benefit in preventing subsequent complications.¹⁰ During the last couple of years in our institution we do not follow the old "dogma" of two episodes of diverticulitis needed so as to perform an elective sigmoidectomy and decision for surgical treatment is individualized. There is now a trend towards non-surgical management.

At the same time, especially during the last decade, there is a trend towards laparoscopic sigmoidectomy for the treatment of both uncomplicated and complicated diverticulitis. In the literature many reports describe series of laparoscopic colectomies. Most of these studies generally excluded complicated cases such as abscess or fistula. Today, laparoscopic surgery for diverticular disease is safe, feasible and effective, but data for the complicated cases is small in the English speaking literature and certainly surgery for these cases requires more experienced hands.¹¹ Laparoscopic colectomy has replaced open resection as standard surgery for

recurrent and complicated diverticulitis at many institutions.¹¹ In our institution we have not started performing laparoscopic sigmoidectomies for patients with diverticulitis and fistula and so due to the inexperience with these cases and the patient's reluctance to undergo a time-consuming operation we chose the open approach. Our case represents a spontaneous colcutaneous fistula, a very rare incident after computed tomography-guided drainage of a subcutaneous-pericolic abscess due to sigmoid diverticulitis. Surgical intervention included excision of the diseased sigmoid colon, drainage of the abscess, and excision of the fistulous tract, and offered the patient's cure.

4. Conclusion

Clinicians should always keep in mind that diverticulitis is a common condition in Western countries with common and rare complications. Colocutaneous fistula is a rare complication of the disease, but one that the clinical doctor should not overlook. Patients with clinical manifestation of a subcutaneous abscess in the left lumbar or flank area with previous episodes of diverticulitis treated conservatively should be suspected of sigmoid perforation and abdominal wall abscess formation, as in our case. Drainage of such an abscess results in fistula formation.

Conflict of interest statement

All authors have no competing interests.

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Ethical approval

Written consent of the patient was obtained before the information of his cases was collected and he declared that they could be published or announced. All possible measures were taken that his identity is not revealed.

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