Sigmoido-gluteal fistula due to diverticulitis: report of a rare complication

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Abstract

Introduction: Complicated diverticulitis of the colon is characterized by its association with abscesses, bleeding, stenosis, perforation, obstruction or fistula. We report a case of spontaneous sigmoidocutaneous fistula due to diverticulitis that appeared in an unusual location in the gluteal region.

Clinical case: A 59-year-old male patient presented an inflammatory wound in the left buttock without response to conservative medical treatment. Fistulography, colonoscopy, barium enema and computed tomography showed a sigmoidocutaneous fistula of the left buttock due to diverticulitis. Biopsy of the lesion ruled out malignancy. Elective sigmoid resection was performed with primary colorectal anastomosis, partial fistulectomy and injection of a fibrin sealant in the residual tract.

Discussion: Colocutaneous fistulas due to diverticulitis are relatively rare. We report a spontaneous fistula with origin in a single diverticulum in the sigmoid colon that drained through the piriform fossa of the pelvic floor to the skin of the left buttock.

Conclusions: A high index of suspicion is necessary in order to not confuse the colo-buttock fistula with local abscesses.

Key words: diverticulitis, colocutaneous fistula.

Introduction

Diverticular disease of the colon is identified in between 12 and 49% of patients >40 years of age who undergo barium enemas in Western countries; 70% are asymptomatic throughout their lives without requiring any medical intervention.1,2 Although diverticula can be found anywhere in the colon, in 95% of patients they are located in the left and sigmoid colon.3 Diverticulitis, defined as inflammation or infection associated with diverticula, affects between 20 and 30% of the patients with diverticulosis.4 Usually, symptoms appear when micro-drilling or free perforation of an inflamed diverticulum is present or even in the absence of inflammation when there is high intraluminal pressure. The clinical presentation of diverticulitis has a very broad spectrum of presentation, which ranges from a mild and isolated attack to a severe and recurrent disease. Furthermore, in 10 to 25% of the cases the patients present with a disease complicated by its association with hemorrhage, abscess, inflammation, stenosis, perforation, obstruction, and/or fistulas.5

Fistulas secondary to diverticulitis result from the extension or rupture of a diverticular abscess or phlegmon within anatomic structures or adjacent organs. Their incidence, both spontaneous as well as those resulting from a surgical procedure, is ~12%e with the capability of involving any pelvic structure such as the urinary bladder, vagina, uterus and other segments of the colon or ileum as well as the cutaneous tissue of the anterior abdominal wall.7

The objective of this article is to describe the presentation of a spontaneous colocutaneous fistula caused by complicated diverticulitis of the sigmoid colon to an unusual site in the gluteal region.

Clinical Case

On August 1, 2011, a 59-year-old male with amyloidosis and chronic renal dysfunction was admitted to our hos-
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A patient presented to the hospital for an inflammatory lesion associated with purulent discharge in the left buttock. The lesion was treated intermittently and unsuccessfully in another hospital for ~10 months through an incision, drainage, anti-inflammatory and oral antibiotics.

Physical examination revealed a patient with height of 161 cm, weight 74 kg, body mass index (BMI) 28.5 kg/m², regular heart rate of 78 beats/min, blood pressure of 120/70 mmHg, and temperature of 36.2°C. The patient’s white blood cell count was 9,000/mm³ with 51% neutrophils, hematocrit of 34%, hemoglobin of 12.4 mg/dl, glucose of 134 mg/dL, serum creatinine of 2.1 mg/dL, and plasma urea nitrogen of 105 mg/dL. In the upper internal quadrant of the left gluteus we observed an ~2-cm² granular area with acute inflammation and contained three holes (diameter not greater than 4 mm each). This lesion was surrounded by an irregular structure with a mucus-like appearance and indurated skin sensitive to touch (Figure 1). Abdominal, anal and rectal examinations were normal.

A more detailed medical history later showed that the lesion had occasional fecal discharge of low output (<200 mL/day) and expulsion of foul-smelling gases. Due to suspicion of an intestinal fistula, we conducted a fistulogram with soluble material, which revealed a sigmoidocutaneous communication and secondary tracts in the subcutaneous fat (Figure 2). Flexible colonoscopy revealed a diverticular opening in the sigmoid colon from which hydrogen peroxide flowed after being injected through one of the openings in the cutaneous fistula. Diagnosis of Crohn’s disease was ruled out with a colonoscopy. Barium enema demonstrated a single diverticulum in the sigmoid colon near the rectum (Figure 3). In a fistulogram through the pelvic CT, we observed the continuity of the sigmoidocutaneous fistula as well as the lack of data suggestive of acute diverticulitis (Figure 4). Abdominal and pelvic computed tomography showed no collection but was of limited value because the study was performed without intravenous contrast material due to the patient having renal failure.
Biopsies were taken from each of the quadrants of the skin lesion to rule out malignancy, obtaining the pathology report of the epithelialization of the fistula and the granulation tissue. In the Gram-stain smear study we obtained gram-negative cocci. Cultures of the pustule material showed fecal microorganisms (Escherichia coli).

Two months after the patient’s initial presentation elective surgery was conducted where the inflammatory reaction in the sigmoid colon was evident attached to the left side of the sacrum and over the coccyx muscle of the pelvic floor. A fibrous tubular trajectory from the tumor involving the rectosigmoid retroperitoneal junction posteriorly penetrated through the left greater sciatic notch. A sigmoidectomy was performed along with primary colorectal anastomosis using endorectal circular stapler. The internal orifice of the fistula was closed with absorbable sutures. From the external orifice we carried out a partial fistulectomy at a distance of ~4 cm in the direction of the colon as well as a resection of secondary tissues. Next, curettage of the fistulous tract was carried out along with an injection of a fibrin sealant (Quixil; Omrix Biopharmaceuticals Ltd., Tel-Hashomer, Israel).

The surgical wound in the buttock was left open to heal by secondary intention. The final pathology report described a complicated diverticulitis with fistula from a single diverticulum in the sigmoid colon.

Discussion

Colocutaneous fistulas caused by diverticulitis are relatively rare, with ~5% of the total fistulas having this origin. These occur almost exclusively as a complication of previous surgical resections for diverticulitis or percutaneous drainage of diverticular abscesses. The case we report represents a spontaneous sigmoidocutaneous fistula in the upper internal quadrant of the left buttock, which originated from a single diverticulum. Although during laparotomy the chronic inflammatory process was evident, our patient had no documented previous clinical episodes of acute or chronic diverticulitis, probably due to intestinal inflammation and retroperitoneal colon perforation to buttocks, hip, thigh and groin fistulas are accompanied by minimal or no abdominal signs and symptoms.

In general, only the colocutaneous fistulas that do not close with conservative medical treatment require surgery, but complicating diverticular disease of the colon almost always requires surgical intervention for closure because fibrosis around its opening, bacterial colonization and epithelialization of its predisposing path lead to chronicity or recurrence. Furthermore, in principle, 75% of patients with this type of fistula can be treated in a single medical step by a primary resection of the affected colonic segment to disconnect the fistula, primary colorectal anastomosis and repair of the adjacent anatomic structure. This was carried out in our patient after being proven by clinical, laboratory and computed tomography tests that no acute inflammation was present in the colon. Although currently we depend on alternative approaches of laparoscopic assistance for surgical treatment of fistula due to diverticulitis, we performed conventional open surgery due to our lack of experience with this entity using laparoscopy.

Finally, it has been reported that scraping of the fistula reduces its bacterial load and re-epithelialization. Applying a biological fibrin sealant in theory obliterates dead space, promotes healing of the fistula, decreases the complication rate related to their secretions, and isolates potential subcutaneous abscesses. We performed a similar procedure in our case, but follow-up remains too short to evaluate its effect.

Fistulas have been reported in unusual locations, within and outside the pelvis. Sigmoid diverticulitis has been associated with, for example, the cecal appendix, fallopian tubes and ureter. Complex fistulas have also been described that affect the bones of the hip, inferior mesenteric vein, portal vein, epidural space and bile duct. Similarly, it is uncommon to find spontaneous colocutanous fistulas due to diverticulitis of the sigmoid colon outside the anterior abdominal wall. Green and Joypaul described a fistula of this type of the right lumbar region. Drabble and Greatorex described a fistula of the popliteal fossa and Wey and et al. described a peri-anal skin fistula.

Four cases of sigmodogluteal fistulas caused by complicated diverticular disease have been documented in the medical literature. In 1964, Goldfarb et al. reported the case of a patient with a sigmoid-sacral fistula that opened...
in the skin of the left buttock. In 1975, Meyers and Goodman\(^\text{23}\) described two patients with fistulas: a 75-year-old female with a fistula along the superior gluteal artery originating in the sigmoid colon to an abscess located in the right buttock, as well as a 57-year-old male with a fistula directed through the piriformis muscle to the left gluteal region extending into the hip joint on the same side. In both cases, radiological diagnosis was confirmed through a fistulography and colon barium enema. Recently, Felheme et al.\(^\text{24}\) reported a skin lesion of 5 × 8 cm in the right buttock, which was initially treated as a local abscess in a 57-year-old female. A contrast study of magnetic resonance imaging showed a fistula that began in the rectosigmoid continuing on a pathway below the sacrum, through the piriformis muscle, affecting the sciatic nerve. Rectosigmoidoscopy revealed an extensive sigmoid colon diverticular disease without macroscopic signs of diverticulitis; the fistula could not be demonstrated endoscopically. The authors emphasized that the differential diagnosis of a recurrent gluteal injury should primarily include fistula,25 the inflammatory process or para-sigmoid abscess in the endopelvic fascia. According to Stahlgren and Thabrer et al.\(^\text{26}\), the superior and inferior gluteal arteries do this cephalically after piercing the sciatic notch is found to be pierced in the middle by the inferior gluteal arteries. The fascia covering the pelvic floor will be extended by some of the fossae mentioned, mainly the superior, along the blood vessels and nerves in the direction of the subcutaneous tissue of the buttocks. This is because the fascia covering the piriformis muscles, buttock vessels and gluteus forms a continuous anatomic pathway. Because of the variations in the position, length and redundancy of the sigmoid colon, the perforations can extend to the opposite side of what would ordinarily be expected.

In conclusion, we report a rare case of chronic diverticulitis complicated by spontaneous sigmoidogluteal fistula. A high index of suspicion accompanied by a complete abdominal examination in search of an underlying disease is necessary in order to not confuse this fistula with recurrent local abscess of the buttock. We advise surgical treatment because of the high probability of persistence as a result of conservative medical treatment.

References