

Colovesical fistulae in the sigmoid diverticulitis

R. CIROCCHI, F. LA MURA, E. FARINELLA, V. NAPOLITANO, D. MILANI,
M.S. DI PATRIZI, S. TRASTULLI, P. COVARELLI, F. SCIANNAMEO

SUMMARY: Colovesical fistulae in the sigmoid diverticulitis.

R. CIROCCHI, F. LA MURA, E. FARINELLA, V. NAPOLITANO,
D. MILANI, M.S. DI PATRIZI, S. TRASTULLI, P. COVARELLI,
F. SCIANNAMEO

In most cases Colovesical fistulae are complications of diverticular disease and representing the most common kind of colodigestive fistula; less common are colovaginal, colocutaneous, coloenteric and colouterine fistula.

In this article we review the literature concerning colovesical fistulae in colorectal surgery for sigmoid diverticulitis and report on two cases that required a surgical treatment, one elective and the other in emergency. In both cases we performed a sigmoid resection with a primary anastomosis and small vesical window-ectomy placing a Foley catheter for about 10 days.

RIASSUNTO: Le fistole colovesicali nella diverticolite del sigma.

R. CIROCCHI, F. LA MURA, E. FARINELLA, V. NAPOLITANO,
D. MILANI, M.S. DI PATRIZI, S. TRASTULLI, P. COVARELLI,
F. SCIANNAMEO

Nella maggior parte dei casi le fistole colovesicali rappresentano una complicanza della malattia diverticolare e sono la tipologia più comune di fistola colodigestiva; meno comuni sono le fistole colovaginali, colocutanee, coloenteriche e colouterine.

Nel presente lavoro abbiamo effettuato una review della letteratura riguardante le fistole colovesicali in chirurgia colorettale per diverticolite del sigma. Descriviamo anche due casi che hanno richiesto un trattamento chirurgico, in uno in elezione e nell'altro in urgenza. In entrambi i casi abbiamo eseguito una resezione colica con anastomosi primaria e minimaresezione vescicale con posizionamento di catetere di Foley in media per 10 giorni.

KEY WORDS: Colovesical fistula - Diverticular disease - Surgery.
Fistola colovesicale - Malattia diverticolare - Chirurgia.

Introduction

Colovesical fistulae are the most common type of vesicointestinal fistula and the most prevalent of these are vesicosigmoid fistulae. In most cases, they are complication of diverticular disease (about 50% of all vesical fistulae) and so they can be associated with previous history of diverticulitis-like symptoms.

The incidence of these fistulae due to complicated diverticulitis is not always homogeneous and it can vary according to the different causes, which can be, though less commonly, locally advanced pelvis neoplasms,

Crohn's disease, radiotherapy effects, penetrating pelvic trauma and iatrogenic surgical lesions (1, 2).

Case reports

We report the clinical cases of two patients with colovesical fistulae that we observed in our Surgery Division at the Ospedale Civile "S. Maria" in Terni, Italy.

Case 1

A 65-year-old man was admitted with a history of recurring cystitis in the previous 6 months and recent fever and pneumaturia. The patient was also affected by type II diabetes mellitus and the urine culture test was positive for Gram-negative bacteria (*Escherichia Coli* and *Klebsiella*).

A cystoscopy was carried out and did not show the presence of a fistula, but obey cystitis. The abdominal and pelvic ultrasound scan underlined the presence of an adherence *plate* in the Douglas, which involved the sigmoid colon and the vesical wall. A barium enema was performed and showed a sigmoid diverticular disease but not the presence of a colovesical fistula. A pelvic CT did not seem

to be necessary, while a cystography was carried out and showed the presence of a colovesical fistula.

The patient underwent a left hemicolectomy associated with a small vesical window-ectomy, in order to have enough healthy wall for the later reconstruction with Vicryl stiches. A vesical two-way catheter and a drainage were placed and the Foley catheter was removed on the 10th postoperative day after a negative cystography.

Case 2

A 72-year-old woman was treated in emergency for acute abdominal pain and septic conditions with dysuria, ileus since 5 days and neutrophilia (84%). The ultrasound scan was positive for a Douglas abscess and the patient underwent surgery for a suspected appendicitis with peritonitis.

We found a large volume of pus in the pelvic pouch (but no sign of appendix inflammation), and several adherences involving the great epiploon, the sigmoid intestine and the bladder. So we carried out adherence lysis, pus drainage and we removed the inflamed stretch of the large epiploon, the sigmoid tract involved in the inflammatory process and a small part of the vesical wall adherent to the colon. A Knight-Griffen terminal-lateral rectocolic anastomosis was performed and a vesical wall reconstruction with Vicryl stiches was carried out.

Also in this case we placed a vesical two-way catheter which was removed on 10th postoperative day after a negative cystography.

Discussion

Colovesical fistulae from diverticulitis are the most common vesical fistula and they can be due to two different mechanisms: direct extension and rupture of a diverticular abscess into the bladder (most common) or direct perforation of the diverticulum which adheres to the bladder (more rare).

The signs of colovesical fistulas can be vague and not easily identified, but in nearly all cases, a "pre-fistula syndrome" is present: pain in the lower abdomen, dysuria, and vesical tenesmus. The correct diagnostic approach in case of clinical suspect of colovesical fistula has been always discussed but even the guidelines for sigmoid diverticulitis proposed by the *American Society of Colon and Rectal Surgeons' Task Force* hasn't established the most suitable method for diagnosis of colovesical fistula (4). So-

me authors suggest a colic type investigation (recto-sigmoidoscopy and barium enema) (5, 6). Most urologists propose intravenous pyelography, cystography and cystoscopy (7, 8). Most of the authors emphasize the use of CT with contrast medium (9, 10). This allows the correct diagnosis in 92-100% of the cases. Direct evaluation with a spiral CT of the fistula can be obtained in a minority of cases, while most signs are indirect: bladder opacification with contrast (70-80%), gas in the vesical lumen (95%), adjacent colon diverticula and focal thickening of the vesical wall or abscess between colon and bladder. Garcea et al. in their study of 90 consecutive cases of colovesical fistulae state that barium enema, colonic endoscopy and CT should be routine in the investigation of colovesical fistulae (6).

Surgery is the only possible treatment for colovesical fistulae. According to Garcea et al. resection and primary anastomosis should be the treatment of choice, with an acceptable risk of anastomotic leak and mortality (6). In the *Clinical Decision Making in Colorectal Surgery*, Wexner and Texeira suggest placing ureteral stents in the immediate pre-operative time to avoid iatrogenic lesions due to adhesiolysis (11).

If peritonitis is present, Hermann and Abernathy, recommend the lysis of the adherences between bladder and sigmoid colon, with resection and left-side colostomy; the two-stage surgery is justified by the risk of anastomotic dehiscence in presence of a peritonitis (12). Instead, in a 9-year review about complicated diverticular disease, the authors state that the procedure of resection and primary anastomosis for acute diverticulitis has an acceptable morbidity and mortality (13). For high-risk anastomosis, a covering loop ileostomy instead of a Hartmann's procedure would be preferred (13).

Although it is not possible to define the ideal and safe surgical approach, according to our experience and to some literature reviews, the "golden standard" is a sigmoid resection with a primary anastomosis and a small vesical window-ectomy, placing Foley catheter for about 10 days (14).

References

1. Covarelli P, Cirocchi R, Alemagni Pimpinelli G, Nonno S, Severini D, Mosci F: Fistole colovesicali nella malattia diverticolare. Atti del convegno congiunto Società Tosco-Umbra di Chirurgia e Royal Society of Coloproctology, Firenze, 1995;157-58.
2. Cristofani R, Bufalari A, Cirocchi R et al. Valutazione comparativa degli interventi per diverticolite acuta complicata. Atti dell'XI Congresso Nazionale del Collegium Internazionale Chirurgiae Digestivae. Napoli, 1994.
3. Charúa-Guindic L, Jiménez-Bobadilla B, Reveles-González A, Avendaño-Espinosa O, Charúa-Levy E [Incidence, diagnosis and treatment of colovesical fistula.] Cir Cir. 2007 Sep-Oct;74(5):343-9.
4. Task Force dell'American Society of Colon and rectal Surgeons: Practice parameters for sigmoid diverticulitis. Dis Colon Recum 1995; 125-32.
5. Almy TP, Nailove A. Malattia diverticolare del colon. In: Sleisenger MH, Fortran JS (eds): Trattato di Gastroenterologia. Padova: Piccin Nuova Libreria 1998; 14588-75.
6. Garcea G, Majid I, Sutton CD, Pattenden CJ, Thomas WM. Diagnosis and management of colovesical fistulae; six-year experience of 90 consecutive cases. Colorectal Dis 2006;8(4):347-52.
7. Marshall FF. Chirurgia della vescica. In: Walsh PC, Retik AB,

- Vaughan ED, Wein AJ (eds): Urologia di Campbell. Roma: Verducci Editore 1999; 3307-28.
8. Cappè O, Scottè M, Sibert L, Songnè B, Grise P, Ténière P. Role of complementary tests in the management of colo-vesical fistulae. *Prog Urol*. 2001; 11(4):657-61.
 9. Angelelli G, Macarini L. Diverticolite. Torino, Edizioni Minerva Medica, 107-9.
 10. Najjar SF, Jamal MK, Savas JF, Miller TA. The spectrum of colovesical fistula and diagnostic paradigm. *Am J Surg* 2004; 188(5):617-21.
 11. Habr-Gama A, Teixera MG. In: Wexner SD, Vernava AM III (eds): Clinical decision making in colorectal surgery. New York, Igaku-Shoin 1995; 303-8.
 12. Hermann G, Abernathy C. Diverticular disease. In: Norton, Lawrence W & Ben Eiseman (eds), Saunders Co 1986: Surgical decision making. pp158-59.
 13. Bahadursingh AM, Virgo KS, Kaminski DL, Longo WE. Spectrum of disease and outcome of complicated diverticular disease. *Am J Surg* 2003; 186(6):696-701.
 14. Lauro A, Alonzo Poza A, Cirocchi R et al. Laparoscopic surgery for colon diverticulitis. *Min Chir* 2002; 57(1):1-5.
-