



Colovesical Fistulae Due to Diverticular Disease of a Sigmoid Colon: A Case Report

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ABSTRACT

A colovesical fistula is the most common type of fistula associated with diverticular disease of the colon. Diverticular disease accounts for 65-75% of vesicoenteric fistulae. We present a case of a 56-year-old male who presented with pneumaturia and fecaluria, and was found to have colovesical fistulae. A micturating cytourethrogram and CECT scan of the abdomen confirmed the diagnosis. Primary repair of the bladder with excision of fistulae and resection anastomosis of the colon was done in a single stage. At the 6-month follow-up, the patient was doing well and was symptom free.

INTRODUCTION

A 56-year-old male presented to us with a history of dysuria, fecaluria, and pneumaturia for 3 weeks. There was no history of lower urinary tract symptoms, hematuria, hematochezia, abdominal pain, or weight loss. There were no associated illnesses. On physical examination, the abdomen was soft and nontender. The digital rectal examination revealed no abnormality. The blood examination revealed leukocytosis. A micturating cytourethrogram revealed a colovesical fistula and a contrast-enhanced computed tomography (CECT) of the abdomen revealed the fistula tract between the sigmoid colon and bladder. Cystoscopy revealed inflamed bladder mucosa in the left lateral wall; however, no definite fistula opening could be identified. Sigmoidoscopy revealed multiple diverticulae in the sigmoid colon along with an inflamed indurated opening of the fistula. The patient was put on intravenous antibiotics for 10 days and a leucocyte count was repeated. The leucocyte count was normal. The patient was planned for an elective laparotomy. General anesthesia with endotracheal intubation was administered and the abdomen opened via midline incision. The sigmoid colon was found adhered to the left lateral wall of the bladder along with a fistulous communication. Excision of the fistula tract, cystotomy, and resection of the involved

sigmoid colon was done. The bladder was closed in 2 layers and end-to-end anastomosis of the sigmoid colon was done. An omental flap was interposed between the bladder and the bowel. The patient recovered well in the postoperative period. At the 6-month follow-up, the patient was doing well with no symptoms. A CECT of the abdomen revealed no evidence of recurrence of fistulae.

DISCUSSION

Colovesical fistulae occur most commonly in the setting of diverticulitis (65-75% of cases) [1]. Other causes include Crohn disease, malignancy, infection, trauma, foreign bodies, and radiation [2]. The peak incidence of colovesical fistulae is between 65 to 75 years of age. Approximately 2% of patients with diverticulitis may experience a colovesical fistula. Symptoms of vesicoenteric fistulae may originate from the urinary or gastrointestinal tract; however, in general, lower urinary tract symptoms are more common at presentation [3]. Lower urinary tract symptoms include pneumaturia, frequency, urgency, suprapubic pain, recurrent urinary tract infection, and hematuria. Pneumaturia is considered the most common presenting symptom noted in 50 to 70% of cases. Gastrointestinal symptoms may include fecaluria and tenesmus.

KEYWORDS: Colovesical fistula, diverticulitis, sigmoid colon

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CASE REPORT

The classic presentation of vesicoenteric fistulae is described as Gouverneur syndrome and consists of suprapubic pain, urinary frequency, dysuria, and tenesmus. Recurrent UTIs or cystitis refractory to antibiotic therapy may suggest a colovesical fistula [4]. Cystoscopy, CECT of the abdomen, and radiographic studies can all independently diagnose fistulae [5,6].

Cystoscopy has the highest diagnostic yield and some abnormality is noted in greater than 90% of patients. The findings on cystoscopy are often nonspecific and include localized erythema and papillary or bullous change. Cystoscopy in our case showed inflamed bladder mucosa in the left lateral wall. However, a definite fistula opening could not be identified. A CECT is the imaging modality of choice. The triad of findings that are suspicious of colovesical fistula include bladder-wall thickening adjacent to a loop of thickened colon, air in the bladder, and the presence of colonic diverticulae. Ultrasonography has been reported to be useful in the diagnosis of colovesical fistulae. A characteristic "beak" sign may be noted [7-10]. Although commonly used barium enemas are less likely to diagnose a fistula. The Bourne test can be a useful adjunct in the evaluation of colovesical fistulae. The first voided urine following a nondiagnostic barium enema is centrifuged and examined radiographically. Oral administration of activated charcoal particles may be used to confirm colovesical fistulae, as they will appear in urine as black particles. We believe the Bourne test can be an inexpensive test to diagnose colovesical fistulae akin to the "poppy seed" test [3].

Colovesicle fistulae may be managed medically or surgically. In nontoxic, minimally symptomatic with nonmalignant causes of colovesicle fistulae, a trial of medical therapy, including intravenous total parenteral nutrition, bowel rest, and antibiotics may be warranted. In our case the patient presented with an elevated leucocyte count; therefore, medical therapy was not considered. The goal of operative management is to separate and close the involved organs. Excision of the fistula and closure of involved organs is performed. A single or multistage procedure may be needed depending on the condition of tissues and surrounding inflammation. Multistage procedures consist of diversion of the fecal stream by a proximal diverting colostomy with colostomy closure at a later date when fistula closure has been demonstrated. Laparoscopic closure of colovesicle fistulae has been described, albeit with a high rate of conversion to open repair [11,12].

CONCLUSION

Colovesical fistulae remain a complex and distressing problem for a patient, and individualization of patient care is paramount in their management. Furthermore, long-term studies are needed to address this issue.

Figure 1. A micturating cysto-urethrogram (MCU) showing a colovesical fistula.



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