

## Colovesical fistula presenting with urosepsis

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### Abstract

This article reports a case of Colovesical fistula presenting with epididymitis. A 61-year-old male with a history of obstructive sleep apnea and diverticulitis, was presented to the emergency room on December 19, 2017, with severe dysuria, polyuria, fever and chills. The Patient was treated for sepsis probably due to acute cystitis and discharged from the hospital on oral antibiotics. Ultrasound done during the hospitalization showed a 6 mm no obstructing right midpole calculus. Renal ultrasound was otherwise normal. Urine grew *E. coli*. Patient came to establish care with PCP on January 9, 2018 and he was tachycardia in the office considering his abdomen was tender and any male patient rate to have *E. coli* in that significant quantity I decided to do CT scan of the abdomen and pelvis and that subsequently revealed patient having Colovesical fistula and patient was septic again admitted to the emergency room. Treated with IV antibiotics Foley catheter was placed and patient discharged subsequently patient ended up having elective sigmoid colectomy Foley catheter was left in place for 3 days subsequently was taken out patient came for follow-up after 6 months without signs of any UTI.

**Keywords:** Patients; Colovesical fistula; Antibiotics; Dysuria and Polyuria; Urine

### Background

This case demonstrates male patient having UTI and having urosepsis need to be worked up thoroughly with the consideration to previous histories of diverticulitis.

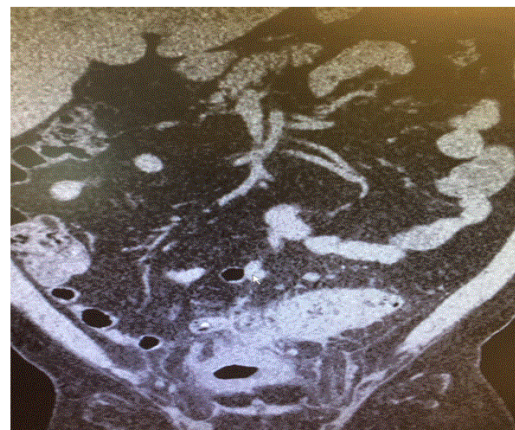
### Case presentation

A 61 years old male with prior history of obstructive sleep apnea and diverticulitis presented to the emergency room with 102, fever chills dysuria and frequency of urination and found to have sepsis on December 19, 2017. Labs remarkable for WBC of 8.3 with neutrophil of 84.5%, lactate of 1.3, positive UA with WBC more than 900. Patient received Ceftriaxone x1 and is receiving IVF bolus per sepsis protocol. Patient was started on sepsis protocol treated with IV antibiotics and admitted to the hospital urine culture grew *E. coli* and ultrasound bladder showed 6-millimeter no obstructing calculus in the right mid pole. Patient discharged home on oral antibiotics on December 22, 2017. Patient presented to PCP office to establish care on January 9, 2018 and follow up. During my examination patient febrile to 38.2 slightly looked pale, abdomen was still tender, and he told me he still occasionally gets chills. Still having urinary symptoms of polyuria and painful urination considering male patient persistent UTI symptoms we decided to do the CT scan of the abdomen stat as patient looked septic to me. CT scan showed Sigmoid diverticulitis with contained perforation with phlegm on and fistula to the bladder and possibly the distal small bowel loop. Patient is again admitted to the hospital through emergency room started on sepsis protocol his white cell count was 14.2 with 91% neutrophils and lactate was 1.5. Patient resuscitated and started on intravenous Piperacillin /tazobactam 4.5 g three times a day. Foley catheter was placed and patient was discharged

on 3rd day on oral Augmentin 875-125 mg per tablet 2 times daily for 10 days patient went for elective colonoscopy on February 8, 2018 that showed diverticulitis. On February 9, 2018 patient underwent elective sigmoid colectomy and Urology was consulted advise Foley catheter to gravity for 3 days Fistula level heal by itself. Patient had a on completed course and he came for follow-up for 6 months doing excellent no more symptoms of UTI.

### Investigations

Labs remarkable for WBC of 8.3 with neutrophil of 84.5%, lactate of 1.3, positive UA with WBC more than 900 urine culture grew *E. coli*



**Figure 1:** A CT abdomen/pelvis scan.

A CT abdomen/pelvis scan with contrast was performed, which demonstrated air within the bladder and surrounding thickening of

the colon suggesting of communication between colon and the bladder (Figure 1).

## Discussion

A Colovesical fistula (CVF) is an abnormal connection between the colon and urinary bladder. Although they are uncommon, CVFs can cause significant morbidity, affect quality of life, and may lead to death, usually secondary to urosepsis [1,2]. Although a CVF can be diagnosed clinically, imaging and endoscopy are often required to delineate the extent of a fistula and to elucidate its etiology [3]. Surgery is usually required to repair a CVF.

The precise incidence of Colovesical fistulas (CVFs) is unknown. It is estimated that CVFs account for 1 in every 3000 surgical hospital admissions [4]. In patients with diverticular disease, 2 to 18 percent were found to have CVFs [5-8]. In patients with Crohn's disease, less than 1 percent developed a CVF [9].

The male-to-female ratio of CVF is approximately 2 to 3:1 [1,10-13]. Females are protected possibly because the uterus and broad ligaments act as a barrier between the sigmoid colon and the bladder. This theory is supported by the fact that a high percentage of females with CVFs (>50 percent in some series) have had a previous hysterectomy [13].

CVFs most commonly affect patients in their sixth or seventh decades. The mean age at presentation is between 55 and 75 years [1,10-12].

## ETIOLOGY

Colovesical fistulas (CVFs) are most commonly a complication of diverticulitis, cancer, or Crohn's disease.

- Diverticulitis accounts for 65 to 79 percent of cases, with the sigmoid being the most frequently affected portion of the colon [2,5,11,14,15]. In these patients, a ruptured diverticulum leads to peridiverticular inflammation and abscess, which eventually erodes into the bladder.
- Cancer accounts for 10 to 20 percent of CVFs. Malignant CVFs usually result from direct invasion of a colonic adenocarcinoma into the urinary bladder [2]. Less often, the primary tumor may arise from the bladder, adnexa, or other pelvic organs [16,17].
- Longstanding Crohn's colitis is responsible for 5 to 7 percent of Colovesical fistulas [2].

Other rare etiologies of CVF include complications from surgery or colonic stents [18], tuberculosis [19], lymphoma [20], spilled gallstones [21], chicken bone ingestion [22], appendicitis [23], coccidiomycosis [24], pelvic radiation therapy [25], and penetrating abdominal trauma [26-28].

Although the underlying cause of colovesical fistulas (CVFs) most often originates in the colon.

## Evaluation and Diagnosis

Colovesical fistulas (CVFs) should be suspected in patients who present with pneumaturia or fecaluria. The diagnosis is confirmed by abdominopelvic computed tomography (CT) scan with oral or rectal but not intravenous (IV) contrast demonstrating air or contrast material in the bladder with adjacent thickened colonic and vesicular walls. Patients who are diagnosed with a CVF should undergo colonoscopy to rule out an underlying malignancy. Patients who are

suspected of having a malignant fistula (due to colon or bladder cancer) should also undergo a cystoscopy to assess possible cancer invasion of the bladder.

## Initial tests to diagnose Colovesical fistula

Urinalysis and urine culture:

Abdominopelvic CT with oral or rectal contrastAn abdominopelvic CT with oral or rectal contrast (but not IV contrast) is the imaging test of choice for diagnosing a CVF. Although the CVF tract is only visualized in approximately 64 percent of cases [12], CT is extremely sensitive for the presence of intravesical air and contrast. Considering this finding, some authors have reported that CT can accurately detect the presence of CVF in up to 90 to 100 percent of patients [2].

Lower gastrointestinal endoscopy to identify etiology Patients in whom a CVF is confirmed should then undergo a colonoscopy to determine the underlying etiology of the fistula.

CVFs are infrequently detected by lower gastrointestinal endoscopy. The reported sensitivities ranged between 0 and 55 percent, with most series reporting at the lower end of this range [1,2]. Thus, colonoscopy or flexible sigmoidoscopy should be used to diagnose the underlying etiology of a CVF rather than to identify the fistula itself. Endoscopy is the best test for assessing the colonic mucosa, and remains the most sensitive diagnostic test for colonic carcinoma [12]. If a suspicious lesion is found, biopsies can be taken to help guide management.

Cystoscopy for suspected malignant fistula: When patients are suspected of having a malignant CVF, a cystoscopy should be performed to rule out bladder involvement.

The sensitivity for detecting CVF on cystoscopy is between 40 and 87 percent [1,3,12]. Findings are usually nonspecific and include edema, erythema, and ulceration [13]. Thus, a cystoscopy should only be performed in patients whose CVF is suspected to be caused by cancer (bladder or colon).

Treat symptomatic infection if present: Whenever a patient presents with urological or abdominal sepsis from a fistula, the treatment of sepsis always takes precedence over repair of the fistula. The initial treatment of urologic or abdominal sepsis includes fluid resuscitation, antibiotics, and control of the septic source. The initial choice of antibiotic therapy should be directed towards covering colonic flora. A quinolone with metronidazole or amoxicillin-clavulanate is commonly used. In patients who develop sepsis from a CVF, the urinary bladder should be decompressed with a Foley catheter. The addition of bowel rest and total parenteral nutrition is optional [2] but generally not required in the treatment of CVF.

Definitive treatment of fistula: Once sepsis is resolved, most patients should undergo definitive repair of their CVFs. A defunctioning colostomy was once advocated as a simple means to allow the fistula to close spontaneously and prevent urinary sepsis but the fistula closure rate was low, the risk of urinary tract infection persisted, and many CVFs recurred [1,2]. Thus, defunctioning colostomy is rarely performed alone.

Operative management: Operative management of a colovesical fistula is guided by its underlying etiology. If there is ambiguity about whether a fistula is benign or malignant, it is best to treat it as if it were a malignant fistula. The extent of the resection is dictated by the fistula's etiology, its location, and the condition of the patient. Patients

generally do well with surgical management of CVFs and postoperative recurrence is uncommon.

## References

1. Garcea G, Majid I, Sutton CD, Pattenden CJ, Thomas WM (2006). Diagnosis and management of colovesical fistulae; six-year experience of 90 consecutive cases. *Colorectal Dis* 8:347.
2. Golabek T, Szymanska A, Szopinski T, Bukowczan J, Furmanek M, et al. (2013) Enterovesical fistulae: aetiology, imaging, and management. *Gastroenterol Res Pract* 2013:8.
3. Melchior S, Cudovic D, Jones J, Thomas C, Gillitzer R et al. (2009) Diagnosis and surgical management of colovesical fistulas due to sigmoid diverticulitis. *J Urol* 182:978.
4. Pugh Ji (1964) On the pathology and behaviour of acquired non-traumatic vesico-intestinal fistula. *Br j surg* 51:644.
5. Pollard SG (1988) Colovesical fistula. *Ann R Coll Surg Engl* 70:184.
6. Amin M, Nallinger R, Polk HC. (1984) Conservative treatment of selected patients with colovesical fistula due to diverticulitis. *Surg Gynecol Obstet* 159:442.
7. Menenakos E, Hahnloser D, Nassiopoulou K, Chanson C, Sinclair V, et al. (2003) Laparoscopic surgery for fistulas that complicate diverticular disease. *Langenbecks Arch Surg* 388:189.
8. Labs JD, Sarr MG, Fishman EK, Siegelman SS, Cameron JL, et al. (1988) Complications of acute diverticulitis of the colon: improved early diagnosis with computerized tomography. *Am J Surg* 155:331.
9. Gruner JS, Sehon JK, Johnson LW (2002) Diagnosis and management of enterovesical fistulas in patients with Crohn's disease. *Am Surg* 68:714.
10. Smeenk RM, Plaisier PW, Van Der Hoeven JA, Hesp WL (2012) Outcome of surgery for colovesical and colovaginal fistulas of diverticular origin in 40 patients. *J Gastrointest Surg* 16:1559.
11. Morrison PD, Addison NV (1983) A study of colovesical fistulae in a district hospital. *Ann R Coll Surg Engl* 65:221.
12. Holroyd DJ, Banerjee S, Beavan M, Prentice R, Vijay V, et al. (2012) Colovaginal and colovesical fistulae: the diagnostic paradigm. *Tech Coloproctol* 16:119.
13. Woods RJ, Lavery IC, Fazio VW, Jagelman DG, Weakley FL, et al. (1988) Internal fistulas in diverticular disease. *Dis Colon Rectum* 31:591.
14. Najjar SF, Jamal MK, Savas JF, Miller TA (2004) The spectrum of colovesical fistula and diagnostic paradigm. *Am J Surg* 188:617.
15. Beatty JD, Witherow R (2005) Diagnostic lessons learnt from a series of enterovesical fistulae. *Colorectal Dis* 7:196.
16. McCaffrey JC, Foo FJ, Dalal N, Siddiqui KH (2009) Benign multicystic peritoneal mesothelioma associated with hydronephrosis and colovesical fistula formation: report of a case. *Tumori* 95:808.
17. Moss RL, Ryan JA Jr (1990) Management of enterovesical fistulas. *Am J Surg* 159:514.
18. Barbaryan A, Jabri H, Attakamvelly S, Mirrakhimov AE (2013) A case of colovesical fistula caused by the eroded rectal stent. *BMJ Case Rep* 2013.
19. Bandyopadhyay S, Das C, Maity PK, Dhua D, Sarkar N (2010) Isolated colonic tuberculosis with colovesical fistula. *J Assoc Physicians India* 58:396.
20. Genta RM, Ramchandani MK, Gyorkey F, Buzanis CT, Lahart CJ, et al. (1993) Enterovesical fistula due to non-Hodgkin lymphoma in AIDS. *J Clin Gastroenterol* 16:333.
21. Gooneratne DL (2010) A rare late complication of spilled gallstones. *N Z Med J* 123:62.
22. Clements MB, Hedrick TL, Colen DL, et al. (2013) Colovesical fistula caused by an ingested chicken bone. *Urology* 82:e37.
23. Cockell A, McQuillan T, Doyle TN, Reid DJ (1990) Colovesical fistula caused by appendicitis. *Br J Clin Pract* 44:682.
24. Kuntze JR, Herman MH, Evans SG (1988) Genitourinary coccidioidomycosis. *J Urol* 140:370.
25. Krco MJ, Jacobs SC, Malangoni MA, Lawson RK (1984) Colovesical fistulas. *Urology* 23:340.
26. Crispen PL, Kansas BT, Pieri PG, Fisher C, Gaughan JP et al (2007) Immediate postoperative complications of combined penetrating rectal and bladder injuries. *J Trauma* 62:325.
27. Solkar MH, Forshaw MJ, Sankararajah D, Stewart M, Parker MC (2005) Colovesical fistula--is a surgical approach always justified? *Colorectal Dis* 7:467.
28. Daniels IR, Bekdash B, Scott HJ, Marks CG, Donaldson DR (2002) Diagnostic lessons learnt from a series of enterovesical fistulae. *Colorectal Dis* 4:459.
29. Raymond PL, Gibler WB (1989) Detection of colovesical fistula in the emergency department: report of a case. *Am J Emerg Med* 7:191.