Available online at **www.ijmrhs.com**

ISSN No: 2319-5886

International Journal of Medical Research & Health Sciences (IJMHRS), 2023, 12(9): 44-47

Ureterocolic Fistulas a Complication of Colonic Diverticular Disease: Case Report and Literature Review

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Received: 8-September-2023, Manuscript No. ijmrhs-23-113031; **Editor assigned:** 9-September-2023, PreQC No. ijmrhs-23-113031(PQ); **Reviewed:** 14-September-2023, QC No. ijmrhs-23-113031(Q); **Revised:** 22-September-2023, Manuscript No. ijmrhs-23-113031(R); **Published:** 30-September-2023, **J-invoice:** J-113031

ABSTRACT

Introduction: *Ureterocolic fistulas are rare, with few cases reported in the literature. Fistula formation as a complication of acute diverticulitis usually occurs in 14% of cases. In a review of the literature, twelve cases of ureterocolic fistulae were described, with the left ureter most frequently affected due to its proximal location to the sigmoid. Patients may present with fecaluria, pneumaturia, and a chronic or recurrent urinary tract infection that can delay the diagnosis.* ***Case Presentation:*** *We present a case of a 56-year-old male patient with recurrent urinary tract infections and no prior history of diverticulitis. An abdominopelvic CT scan showed a colo-right ureteral fistula responsible for pelvicaliceal dilation of the right ureter. The patient underwent elective partial colectomy with colorectal anastomosis and a protective ileostomy, along with JJ insertion of the left ureter after finding an inflammatory mass involving the sigmoid and left ureter. Histopathology confirmed sigmoid diverticulitis and negative reactive lymph nodes.*

Keywords: Ureterocolic fistulas, Pneumaturia, Lymph node

INTRODUCTION

Ureterocolic fistulas are uncommon medical conditions where an abnormal passage forms between the ureter (the tube connecting the kidney to the bladder) and the colon (part of the large intestine). These fistulas are rarely seen, with only a few cases reported in medical literature. They typically occur as a complication of acute diverticulitis, a condition characterized by inflammation and infection of small pouches or pockets that can form in the colon. In approximately 14% of cases of diverticulitis, fistula formation can be one of the complications. When an ureterocolic fistula develops, it often involves the left ureter more frequently than the right. This preference is because the left ureter is situated closer to the sigmoid colon, which is the most common location for diverticulitis. The symptoms of ureterocolic fistulas can vary but often include fecaluria (the presence of fecal matter in the urine), pneumaturia (passing gas in the urine), and chronic or recurrent urinary tract infections. These symptoms can be challenging to diagnose and may lead to delays in proper evaluation and treatment.

CASE PRESENTATION

A 56 year old male patient with no previous medical and surgical history presented with one month history of pneumaturia, no fever and no associated abdominal pain.

History goes back 4 months ago when the patient developed urinary tract infection (*Escherichia coli*) treated at home with oral antibiotics.

At this presentation laboratory test showed elevated white blood cells: 11,350/µl neutrophils: 75.2% CRP: 11 mg/l (normal level <6).

An abdominopelvic CT scan was done showing diverticulosis of the middle and distal sigmoid associated with an inflammation of the mesosigmoid fat, identification of a retractile stellate fistula with air content followed up to the medial wall of the right pelvic ureter responsible of pelvicaliceal dilation of the right ureter (Figure 1a and Figure 1b). This was suggestive of a colo-right ureteral fistula.

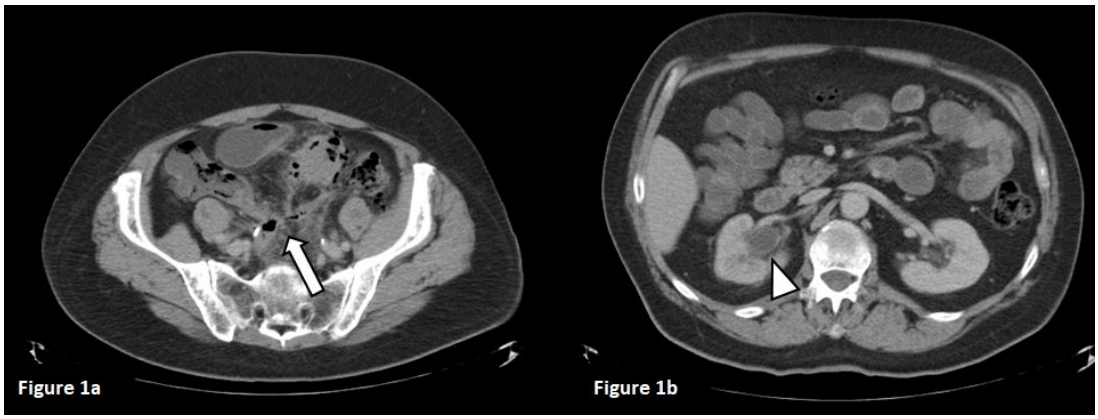

Figure 1a Retractile stellate fistula with air content (white arrow) followed up to the medial wall of the right pelvic ureter; Figure 1b Associated right-sided hydronephrosis (white arrowhead)

Patient had a JJ insertion over the right ureter. In the absence of clinical or radiological signs of diverticulitis a flexible sigmoidoscopy showed a retractile aspect of the sigmoid colon at recto sigmoid junction that could not be expanded by maximal air insufflation and abundant water lavage.

However, patient continues to develop recurrent urinary tract infection despite prolonged antibiotics prompted us to control the fistula.

A CT scan revealed unchanged circumferential parietal thickening of the distal sigmoid delimiting a sigmoid diverticulosis with persistence of the fistula and an increase in the abundance of the caliciel and right ureteral air content with air bubbles in the bladder. JJ in place in the renal excretory cavities (Figure 2a and Figure 2b).

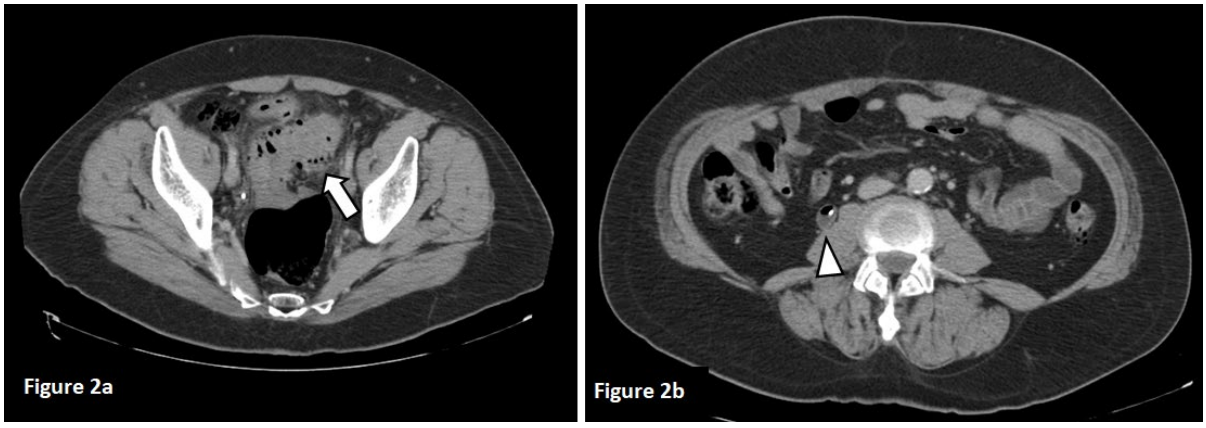

Figure 2a circumferential parietal thickening of the distal sigmoid colon compatible with sigmoid diverticulosis (white arrow); Figure 2b JJ catheter inside the right ureter with abundant right ureteral air content (white arrowhead)

Patient had elective partial colectomy with colorectal anastomosis and protective ileostomy with JJ insertion of the left ureter after finding an inflammatory magma involving the sigmoid and left ureter. Also ureterolysis was performed for the right ureter. Patient discharged home on postoperative day 5. The ureteric stents were left for 8 weeks to prevent urine leakage and promote spontaneous closure of the fistula. Closure of ileostomy and ablation of the JJ were done after 8 weeks without any complications.
Histopathology confirmed sigmoid diverticulitis and negative reactional lymph node (0/5).

DISCUSSION

Ureterocolic fistulas are rare with few cases reported in the literature [1]. Tuberculosis was considered in the past the most common cause of ureterocolic fistulas, but nowadays ureteral stones complicated with pyelonephritis and obstruction is the leading cause [2,3]. Crohn's disease, pelvic malignancies, trauma, surgical complications and radiation treatment are other etiologies. In contrast Diverticular ureterocolic fistulae are rare especially on the right side [4-6].
Fistula formation as a complication of acute diverticulitis usually occurs in 14% of cases with colovesical fistulae the most frequent type with male predominance. Since female uterus separate the diseased colon from the bladder, hysterectomy is a risk factor for colovesical fistula in women [7,8].
A cohort study on 2950 patients with complicated colonic diverticular disease has shown that most cases with fistulous complications were most likely to have had at least one prior episode of acute diverticulitis and the risk increase with repeated episodes. We can have a 50% increase in risk of fistula in patients with twice or more episodes of diverticulitis compared to other complication as stricture, abscess or perforation [9].

Patients may presents with fecaluria, pneumaturia, and a chronic or recurrent urinary tract infection that can delay the diagnosis like in this case [10]. This clinical presentation is highly suggestive of the presence of a fistula, but radiologic evaluation is needed with CT scanning being the modality of choice showing diverticula, air in the urinary system, thickened bladder wall leaning on the colon or a visible fistulous tract with or without contrast leakage [11].
In a review of literature, twelve cases of uretrocolic fistulae were described with the left ureter most frequently affected due to its proximal location to the sigmoid, and our case is the fourth with right uretrocolic fistulae presentation [12].
What is unique in our case is that the patient had no abdominal complaints at presentation and during the evolution of the disease; he had only a urinary symptom as opposed to the cases reported in the literature.
In 2020 The American Society of Colon and Rectal Surgeons presented practice guidelines recommend, elective or semi elective resection in complicated situations like fistula formation, obstruction, or structure [13]. This is what have been done in this case.

DECLARATIONS

Conflict of Interest

The authors declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

Patient Consent

Consent has been taken from the participants.

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