



Ureterorectal Fistula Post Ureteroscopic Laser Lithotripsy in Case of Ureteral Calculi

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Abstract

Ureterorectal fistula (URF) is a rare entity. Owing to a lack of published literature, it has diagnostic challenges, and its management is modified to the patient's particular presentation. We report a case of 35 years old male without co-morbidities with suspected urosepsis and a history of left-sided ureteroscopic laser treatment for left mid-ureteric calculi before 1 month. The patient presented with complaints of fever with chills, passing watery stools up to 20 times a day, and per rectal urinary leakage on straining. Further imaging revealed a left lower ureteric injury and ureterorectal fistula. The patient was treated with long-term Double J (DJ) stent placement and a dramatic response was seen.

Keywords: Ureteric Injury; Urinary Fistula; Ureterorectal Fistula

Introduction

Ureterorectal fistula (URF) in post-ureteroscopic laser lithotripsy is still an unknown entity. Owing to the lack of published literature, such a case poses challenges in diagnosis and management. The predisposing factors attributed to the occurrence of such a complication can be iatrogenic, inflammatory, malignancy, or multifactorial. This fistulous communication leads to urinary tract infection (UTI) due to bacterial contamination. The approach in such cases is always personalized and has to be tailored as per patient presentation. We present a case of ureterorectal fistula (URF) with a history of left-sided ureteroscopic laser lithotripsy (URSL). To our knowledge, this is the first case reported of ureterorectal fistula occurring in an endoscopic iatrogenic setting.

Case History

The patient is a 35-year-old male without any comorbidities. The patient had a history of undergoing left-sided ureteroscopic laser

lithotripsy (URSL) one month back elsewhere. The patient presented to our department with lower abdominal pain and low-grade fever with chills for 15 days. At presentation, his vital signs were stable and he was non-toxic appearing with localized tenderness in the left lower quadrant. Routine laboratory investigations were within normal limits. Initial computed tomography (CT) imaging of the abdomen and pelvis (Figure 1a and 1b) demonstrated injury of the left distal ureter with active contrast extravasation, loculated collection in the left pelvis adjacent to the rectum, and linear fistulous connection along the left lateral wall of the rectum with evidence of contrast in the rectum and sigmoid colon suggestive of URF. The patient was started on intravenous piperacillin-tazobactam for broad antibiotic coverage. The patient was planned for cystoscopy and left-sided retrograde pyelography (RGP) for evaluation of the extent of the injury. The plan for the need for percutaneous nephrostomy insertion followed by drainage of pelvic collection and definitive repair of ureteric injury at a later date was

explained. However, on RGP, guidewire could be negotiated across the site of the fistula into the pelvicalyceal system. On the table, the decision was taken to place a 5 Fr/26 cms DJ stent. The patient's recovery was uneventful. The patient was deemed medically fit for discharge on POD 2. After 3 months, repeat contrast imaging was done with a stent in situ which showed no contrast extravasation from the left ureter (Figure). Cystoscopy and RGU were done after stent removal which confirmed the CT findings (Figure 2a and 2b). After 6 months of clinical follow-up from the initial presentation, the patient is symptom and recurrence-free.

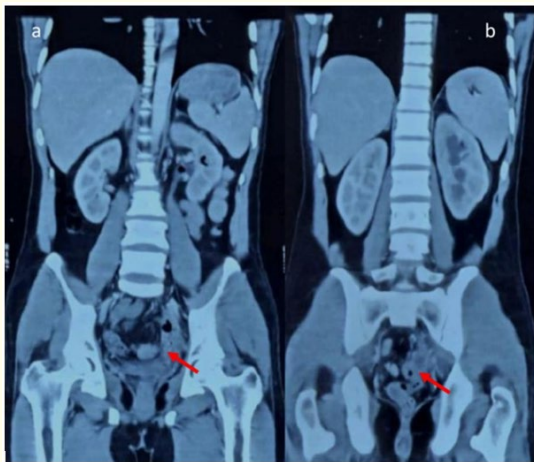


Figure 1

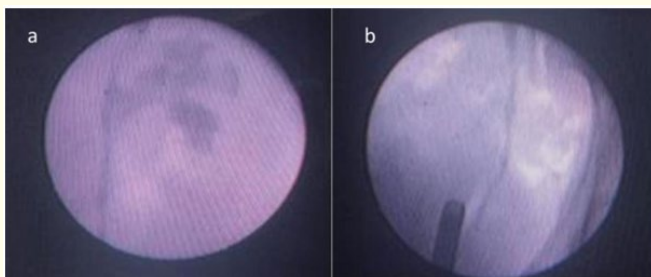


Figure 2

Discussion

There is a clear lack of availability of published and cited literature on URF. Hence, we can extrapolate the fact that since an iatrogenic injury to the ureter is commonly cited as the cause of

eventual uretero-colonic fistula (UCF), the same can be the main cause of URF [1]. Though there is an increase in reporting of UCF in recent years, the occurrence of URF after an endourological procedure has not been reported yet. Most ureteral injuries are identified in the delayed post-operative setting, and of these few progress to or are eventually recognized as URF. The mechanism of action may have a role in the delayed presentation and, consequently, delayed diagnosis of some conditions. The usage of energy devices close to the ureter may result in a thermal injury that develops into full-thickness damage as coagulative necrosis advances, devascularization occurs, and ischemia occurs, all of which eventually result in a fistula [2]. A similar mechanism of injury was considered to be a possibility in our case.

The diagnosis can be delayed for weeks or months because of its rarity and the frequent occurrence of non-specific complaints. Frequent urinary tract infections, fecaluria, or pneumaturia, as well as vague flank or abdominopelvic pain, are non-specific signs and symptoms. Pyuria or bacteriuria may be seen during a urinalysis. RGU can be used to draw attention to important structures. In the treatment of URF, contrast enema can potentially be a useful diagnostic technique. Contrast injection through the rectum under pressure may result in extravasation of the substance into the fistulous tract, which is followed by ureter opacification [3]. Similar to this, retrograde cystourethrography may make it possible to see aberrant contrast filling and delineating a fistula tract [4]. To rule out UCFs as the primary differential diagnosis for urinary symptoms or nebulous abdominopelvic discomfort, cross-sectional imaging in the form of computed tomography (CT) is sometimes conducted initially. Even while the distinct tract might not be visible on a CT scan, it does have the advantage of following the rectum's journey and checking it for any potential ureter involvement. The use of ultrasound in the diagnosis of UCF is quite restricted. By detecting calculi or hydroureter—two conditions linked to ureteric fistulas—this modality may be able to further guide the investigation in the right clinical setting [1].

There aren't any definite set rules for managing URF. Every management strategy, however, should adhere to fundamental surgical principles, and every choice should be based on the particulars of the patient. Using minimally invasive radiologic procedures to redirect the urine stream may lessen the risk of infectious complications and may enable spontaneous closure

without treating the fistula site directly. Using a double “J” stent and percutaneous nephrostomy, 8 uretero-enteric fistulas in a group of 25 patients with uretero-enteric fistulas were able to be closed over 7–16 weeks. For our patient, a similar strategy was used, and the stent remained in place for three months [5]. The results cannot be generalized because the study’s carefully chosen individuals had a variety of fistula forms and aetiologies.

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