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An Unusual Presentation of Urinoma Formation due to Spontaneous Left Proximal Ureteral Rupture Secondary to Extrinsic Compression by Advanced Carcinoma Rectum: A Rare Case Report

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Abstract: ***A spontaneous proximal ureteral rupture is a rare clinical condition and is most commonly associated with obstructive uropathy. We report a 59-year-old female with advanced moderately differentiated rectal adenocarcinoma who presented with flank pain and obstructive uropathy. Imaging demonstrated bilateral hydroureteronephrosis and a large left perinephric urinoma communicating with the proximal ureter. Retrograde pyelography confirmed proximal ureteral rupture with contrast extravasation into the perinephric space. Retrograde double-J stenting and urinoma aspiration were successfully performed, resulting in symptom resolution and recovery of renal function. This case highlights the importance of considering upper urinary tract rupture in patients with pelvic malignancies presenting with flank pain and urinary obstruction. Early diagnosis and timely urinary diversion can prevent significant morbidity.***

Keywords: Proximal ureteral rupture; Urinoma; Rectal carcinoma; Extrinsic ureteral compression; Retrograde pyelography; Double-J stent

1. Introduction

Renal forniceal (calyceal) rupture secondary to distal ureteric obstruction is considerably more common than primary proximal ureteral rupture. The majority of available literature indicates that acute distal obstruction—most frequently due to distal ureteric calculi or, less commonly, external malignant compression, causes a rapid rise in intrapelvic pressure, which preferentially results in forniceal rupture rather than true proximal ureteral disruption. Mechanistically, a sudden distal blockade produces an abrupt hydrostatic pressure surge within the collecting system; the calyceal fornix, being the thinnest and least compliant portion, becomes the typical site of rupture, while proximal ureteral rupture remains an uncommon event usually associated with prolonged obstruction or direct ureteric injury.

Ureteral rupture is an uncommon clinical entity, most often resulting from obstructive causes, iatrogenic injury, or trauma. [1] Spontaneous ureteral ruptures, particularly of the proximal ureter, are rare [2]. Even more uncommon is rupture caused by extrinsic compression from non-urological malignancies such as rectal cancer. This report presents a rare instance of proximal ureteral rupture and urinoma formation due to external ureteral compression from advanced carcinoma rectum, discovered during Retrograde Pyelogram.

2. Case Presentation

A 59-year-old female, a case of moderately differentiated adenocarcinoma of the rectum, presented with hematochezia and left flank pain. USG abdomen and pelvis was done, suggestive of borderline hepatomegaly, mild bilateral hydroureteronephrosis, loculated anechoic fluid collection with internal septation in the left perirenal region/ perinephric fluid collection/ complex cyst/ heterogeneous mass lesion in the pelvis posterior to the uterus/ neoplastic aetiology, bilateral pleural effusion, right side mild hydrouretronephrosis, left moderate hydrouretronephrosis. Hence first right side DJ stenting was done.

Colonoscopy was done, suggestive of the possibility of rectal growth/malignancy/ adnexal mass infiltrating into the rectum/ primary rectal malignancy/ rectal endometriosis. Multiple biopsies taken from the lesion.

Histopathology report was suggestive of moderately differentiating adenocarcinoma infiltrating deep muscle tissue. CECT abdomen and pelvis done suggestive of heterogeneously enhancing irregular circumferential wall thickening noted involving the recto-sigmoid junction and the sigmoid colon over a length of approx. 12 cm, maximum wall thickness measures 2 cms. Bilateral kidneys are hypo-enhancing with a thick-walled hypodense cystic lesion noted abutting the superior pole of the left kidney measuring approximately 5.4x7.1x10.7 cm, it is seen communicating with the proximal ureter with minimal contrast extravasation into it in 3-hour delayed scan s/o urinoma formation. A few simple cortical cysts were noted in the right kidney. Both the kidneys are normal in size, shape and axis. No evidence of any calcification.

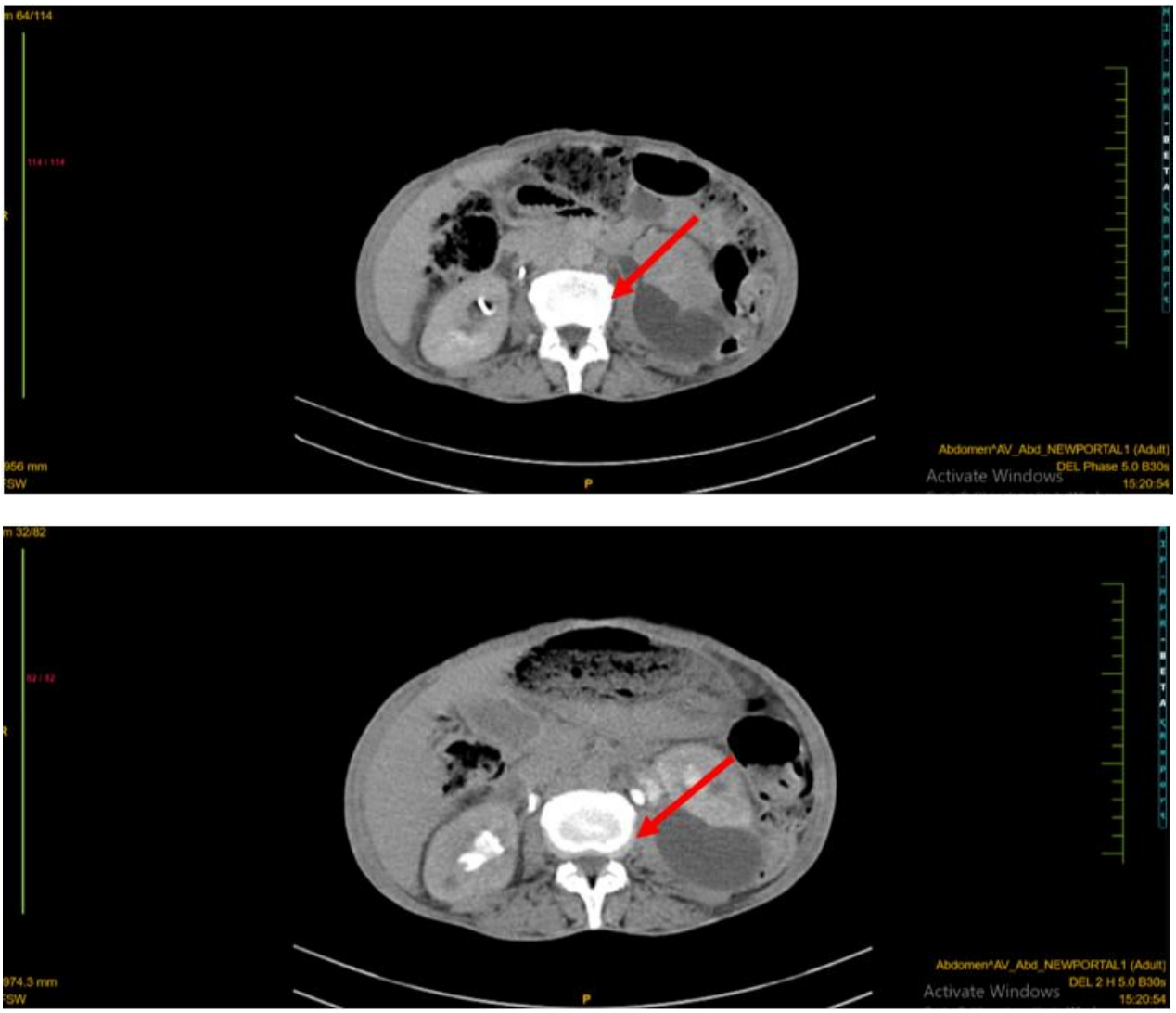

Figure 1 and 2: CECT Abdomen pelvis s/o proximal ureteric rupture communicating with urinoma (Marked site s/o communicating point)

To further evaluate the upper tract rupture, a cystoscopy and left Retrograde Pyelogram(RGP) were performed. During Retrograde Pyelogram, extravasation of contrast was seen from the proximal ureter approximately 2.5 cm from left pelvi-ureteric junction into the perinephric space, consistent with proximal ureteral rupture. A guidewire was negotiated and pelvi-calyceal system confirmed. Retrograde DJ stent was placed over the guidewire to ensure drainage and relieve pressure. USG guided urinoma aspiration was also done. The patient's symptoms improved post-procedure, and renal function normalized over the following week.

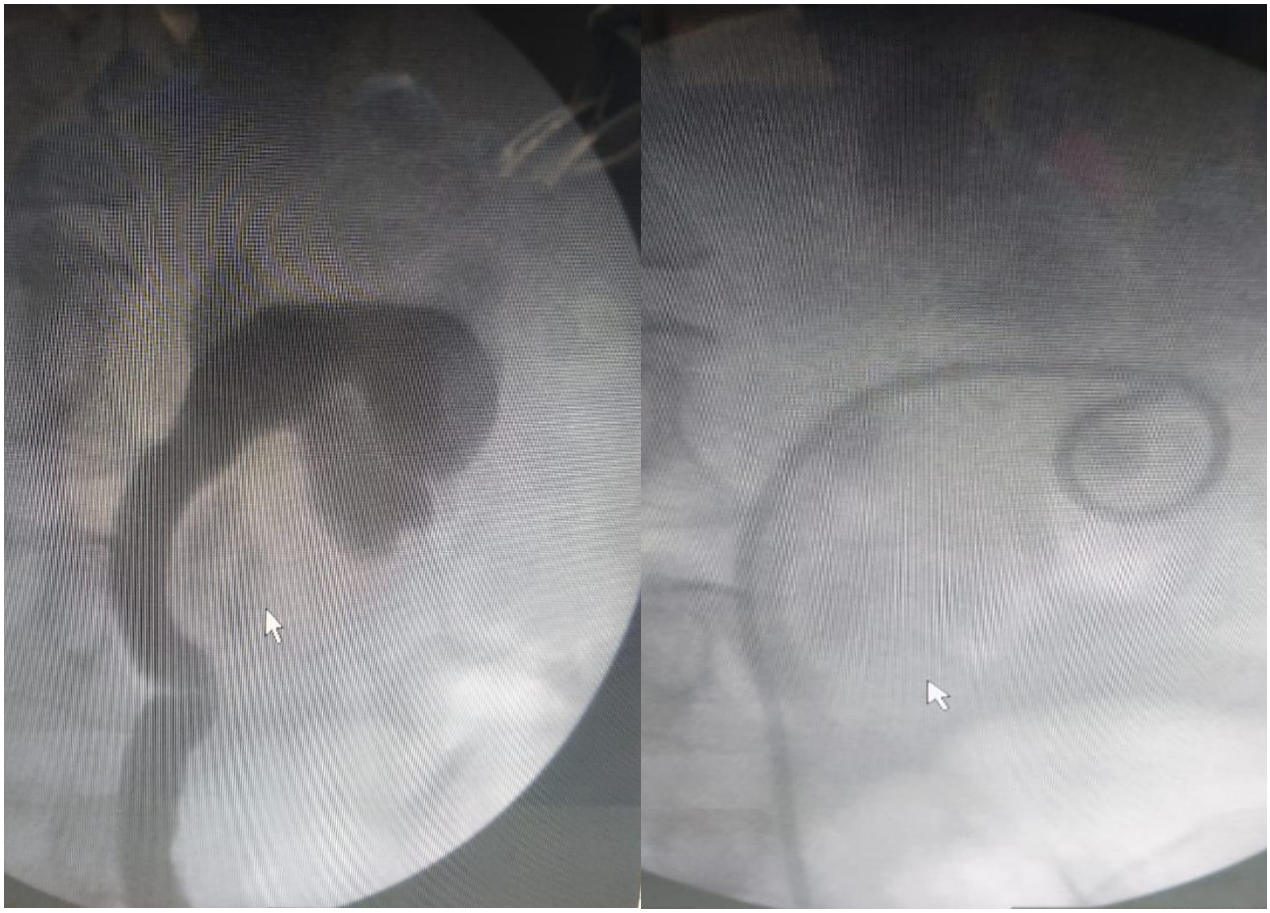

Figure 3a & 3b: Retrograde Pyelogram s/o contrast extavasation from proximal ureteral rupture f/b DJ stenting

3. Discussion

This case illustrates the rare phenomenon of spontaneous proximal ureteral rupture caused by extrinsic compression from an advanced rectal carcinoma. The likely mechanism involves distal ureteral obstruction from tumor mass effect or radiation-induced fibrosis, causing a significant rise in intraluminal pressure upstream, eventually leading to rupture of the proximal ureter.

Ureteral ruptures are usually associated with calculi, instrumentation, or trauma [3]. A usual presentation due to distal ureteral obstruction is forniceal rupture [4] [5]. Spontaneous rupture, especially in the absence of stones, is rarely reported. Prompt recognition and intervention are essential to prevent complications such as urinoma infection or renal function deterioration.

Retrograde pyelography remains a critical diagnostic tool in such scenarios, allowing both visualization of the rupture site and therapeutic stenting to facilitate drainage and healing.

4. Conclusion

Proximal ureteral rupture with urinoma formation secondary extrinsic compression from advanced rectal carcinoma is extremely rare complication. Clinicians should maintain a high in of suspicion in patients with pelvic malignancies presenting v flank pain, hydronephrosis, or obstructive uropathy. Early diagn using appropriate imaging and prompt urinary diversion with stent can preserve renal function and reduce morbidity.

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