SAS Journal of Surgery
Abbreviated Key Title: SAS J Surg
ISSN 2454-5104
Journal homepage: https://www.saspublishers.com

OPEN ACCESS

Radiology

Spider-Web Appearance of a Urinoma Following Fornix Rupture: A Case Report

Mohamedou Meggahi[1*], Anys Benhaddou[1], Abdellatif Siwane[1], Youssef Sakhy[1], Houria Tabakh[1], Najwa Touil[1], Omar Kacimi[1]

[1]Faculty of Medicine and Pharmacy of Casablanca – Casablanca Hassan II University –Morocco, Department of Emergency Radiology, Ibn Rochd University Hospital, Casablanca, Morocco

DOI: https://doi.org/10.36347/sasjs.2025.v11i05.036 | **Received:** 25.03.2025 | **Accepted:** 05.05.2025 | **Published:** 27.05.2025

***Corresponding author:** Mohamedou Meggahi, MD
Faculty of Medicine and Pharmacy of Casablanca – Casablanca Hassan II University –Morocco, Department of Emergency Radiology, Ibn Rochd University Hospital, Casablanca, Morocco

Abstract | **Case Report**

A urinoma is an extravesical collection of urine, often secondary to trauma or urinary tract obstruction. Renal fornix rupture is a rare complication of acute urinary tract obstruction, particularly in cases of renal lithiasis. We present the case of a 43-year-old patient with a history of kidney stones, in whom computed tomography (CT) revealed a urinoma with a characteristic "spider-web" appearance. This report highlights the importance of CT in the early diagnosis and management of this condition.

Keywords: Urinoma, Renal fornix rupture, Urinary tract obstruction, Kidney stones (Renal lithiasis), Computed tomography (CT).

INTRODUCTION

A urinoma is a fluid collection resulting from urine leakage into the retroperitoneal or peritoneal space, typically due to rupture of the renal collecting system. Fornix rupture commonly occurs in the context of acute pyelocaliceal obstruction, especially due to obstructive urolithiasis. CT imaging is key for early identification and appropriate management of this condition. We report a case of urinoma secondary to fornix rupture, with a characteristic "spider-web" appearance.

CASE REPORT

A 43-year-old man with a history of recurrent renal lithiasis presented with acute left flank pain and gross hematuria. Clinical examination revealed left costovertebral angle tenderness, with no fever or signs of infection. Laboratory tests showed preserved renal function and moderate leukocytosis. A CT urography was performed.

Imaging Results

Non-contrast CT shows moderate hydronephrosis with no visible obstructive calculus.

At the excretory phase (contrast-enhanced CT), we note normal-sized left kidney with pale nephrogram, mild pyelocaliceal dilatation, and significant perirenal and parapelvic fluid infiltration.

There was slightly dilated left ureter with wall thickening, without clearly visualized obstruction. There was evidence of retroperitoneal fluid collection (0–20 HU), non-enhancing, consistent with a urinoma.

Delayed phase images showed contrast extravasation in the perirenal space, creating a characteristic "spider-web" appearance, suggestive of renal fornix rupture.

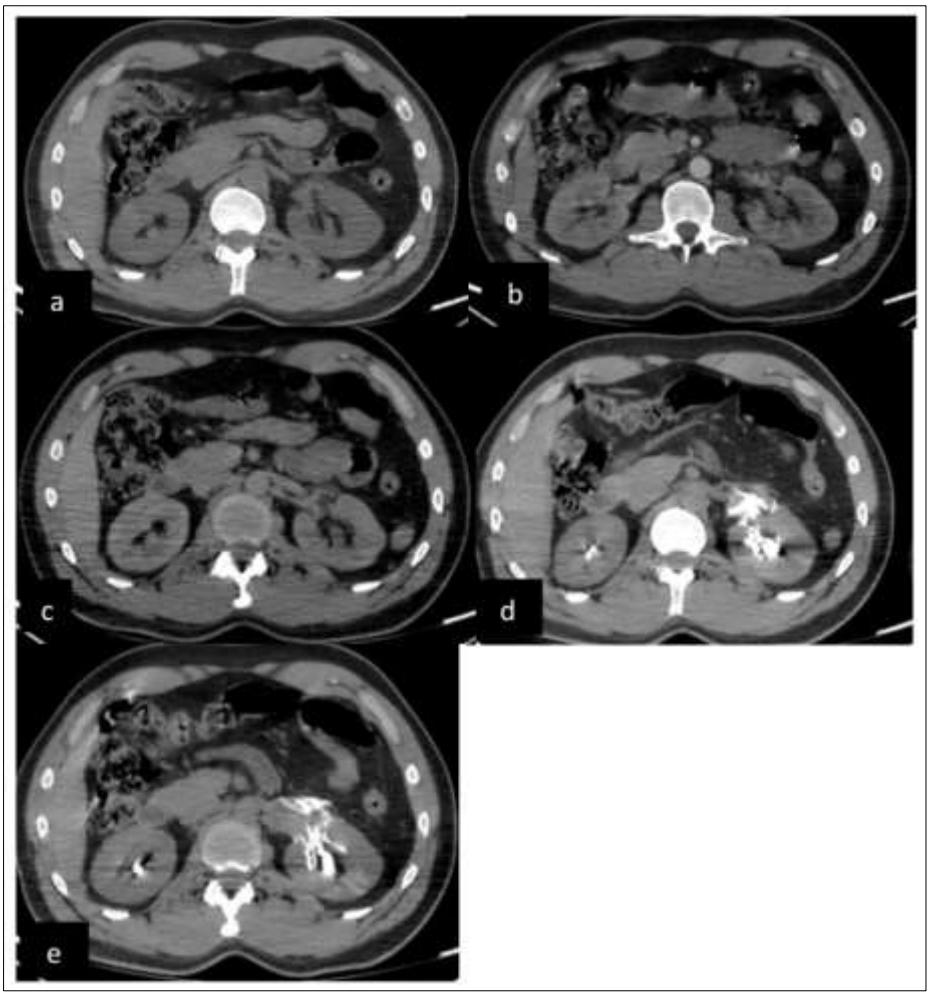

Figure 1: Axial CT-urography images without contrast (a), following contrast at arterial phase (b), portal venous phase (c), and delayed phase (d and e)

DISCUSSION

Renal fornix rupture occurs due to a sudden increase in intrapelvic pressure from acute obstruction [1]. The fornix, being the weakest point, gives way under the pressure, leading to urine leakage into adjacent tissues [2]. CT is the imaging modality of choice for diagnosing urinoma, allowing detection of perirenal collections and urine extravasation. The "spider-web" appearance is highly suggestive and results from urine spreading through retroperitoneal fascial planes [3]. One major advantage of CT is the ability to obtain delayed-phase images after contrast injection. This phase enables clear visualization of delayed urinary contrast extravasation, as seen in our patient [4]. This imaging feature is critical for confirming the diagnosis and distinguishing urinomas from other retroperitoneal fluid collections, such as perirenal abscess that typically shows contrast enhancement and associated inflammatory signs.

Perirenal hematoma usually displays higher spontaneous attenuation (50–70 HU).

Postoperative lymphocele is typically located in the perirenal space, without communication with the urinary tract [5].

Management focuses on treating the underlying cause. Percutaneous nephrostomy may be necessary to drain the urinoma and relieve obstruction.

CONCLUSION

This case underscores the value of CT in the early diagnosis of urinoma secondary to renal fornix rupture.

The "spider-web" appearance is an important imaging hallmark that aids in diagnosis and guides management.

Delayed-phase imaging after contrast administration plays a crucial role by revealing urinary extravasation, thereby confirming the etiology of the urinoma.

REFERENCES

1. Smith AD, "Imaging of Urinary Tract Emergencies", Radiographics, 2021.
2. Patel U et al., "CT Features of Fornix Rupture", Am J Roentgenol, 2019.
3. Kenda MF, "Retroperitoneal Urinomas: CT Findings", Eur Radiol, 2020.
4. Setia SA, Massie PL, Epsten MJ et al. "Renal Forniceal Rupture: Etiology and Treatment", Journal of Urological Surgery, 2017.
5. Lavergne O. "Comment je traite une colique néphrétique", Revue Médicale de Liège, 2016.