MedCrave
Step into the World of Research
Urology & Nephrology Open Access Journal

Case Report

Open Access
CrossMark

Complicated pelvic ectopic kidney with pyonephrosis leading to renal destruction: a case report and literature review

Abstract

Pelvic ectopic kidney (PEK) is a rare congenital anomaly resulting from failure of normal renal ascent during embryogenesis, with an incidence ranging from 1/500 to 1/12,000.[1] Although often asymptomatic, it may give rise to serious complications including infections, urolithiasis, and obstructive syndromes. We report the case of a 61-year-old man presenting with a destroyed left PEK secondary to recurrent episodes of pyonephrosis requiring repeated drainage procedures. Imaging revealed a large renal-pelvic mass with fatty components and macrocalcifications, along with locoregional infectious sequelae. Left nephrectomy was indicated. This case highlights the advanced forms of this condition and underscores the importance of early diagnosis and timely management.

Keywords: ectopic kidney, pelvic kidney, pyonephrosis, nephrectomy, destroyed kidney

Volume 14 Issue 2 - 2026

Ahemdi Chrive Ahmed,[1] Moncef El Midaoui,[1] Youssef Maachi,[1] Babty Mouftah,[2] Amine Slaoui,[1] Tariq Karmouni,[1] Abdellatif Koutani,[1] Khalid El Khader[1]

[1]Department of Urology B, CHU Ibn Sina, Faculty of Medicine and Pharmacy, Mohamed V University, Rabat, Morocco
[2]Urology Department, Friendship Hospital, Nouakchott, Mauritania

Correspondence: Ahemdi Chrive Ahmed, Department of Urology B, CHU Ibn Sina, Faculty of Medicine and Pharmacy of Rabat, Mohamed V University, Rabat, Morocco

Received: June 15, 2026 | **Published:** July 14, 2026

Introduction

Pelvic ectopic kidney (PEK) is a congenital anomaly defined by an abnormal position of the kidney, resulting from a failure of embryological migration. It represents the most common form of renal ectopia, with an incidence ranging from 1/500 to 1/12,000 across published series.[1] The higher prevalence observed in autopsy studies reflects the frequency of asymptomatic forms. Nevertheless, the anatomical and functional peculiarities of PEK predispose affected individuals to an increased risk of complications, particularly of infectious and obstructive nature.[2] The unusual location of the kidney often leads to significant diagnostic delay, with symptoms being mistaken for digestive or gynecological pathologies. We herein report a case illustrating a late-presenting, complicated form of PEK, with the aim of raising awareness about the potential severity of this condition when left undiagnosed.

Case report

The patient was a 61-year-old man with a history of left pyonephrosis drained twice by percutaneous nephrostomy in 2022 and 2023, complicated by complete destruction of the left kidney. He was admitted on April 7, 2026 for surgical management of a non-functional left kidney.

Preoperative biological workup performed on March 23, 2026 revealed the following values: hemoglobin 15 g/dL, blood urea nitrogen 0.26 g/L, serum creatinine 10.2 mg/L, and serum potassium 4.4 mmol/L. Overall renal function was preserved and urine culture was sterile.

Uro-CT scan performed on December 8, 2025 demonstrated the absence of the left kidney in the lumbar position, a large renal-pelvic formation measuring 96 × 115 × 112 mm with fatty components and macrocalcifications, a pelvic ectopic left kidney, a left gluteal collection, and sequelae of a left psoas abscess (Figure1). The right kidney was compensatory and functional. (Angio) (Figure 2).

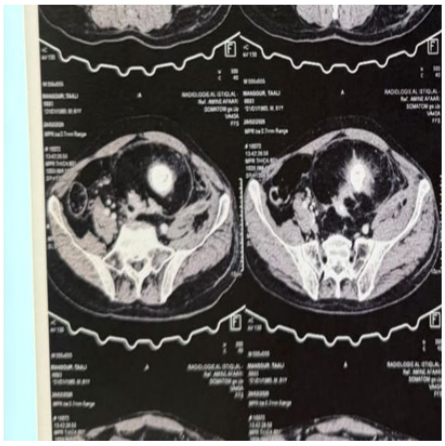

Figure 1 Contrast-enhanced uro-CT scan demonstrating a destroyed left pelvic ectopic kidney measuring 96 × 115 × 112 mm.

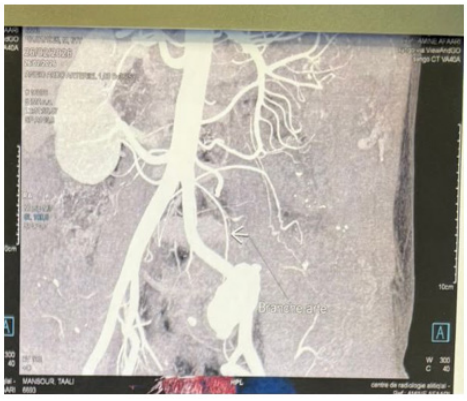

Figure 2 CT angiographic reconstruction showing the aberrant vascular anatomy of the left pelvic ectopic kidney.

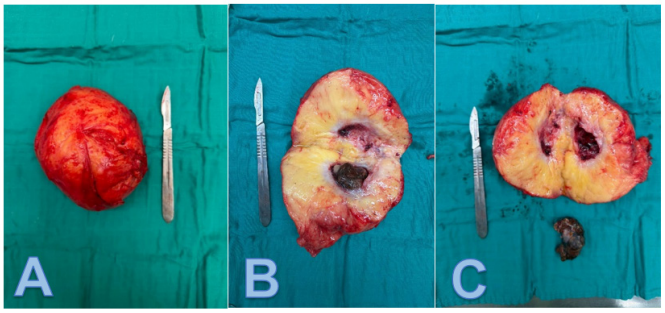

Figure 3 Gross nephrectomy specimen:

(A) external view of the enlarged ectopic kidney;

(B,C) cut sections showing extensive renal parenchymal destruction with pyonephrotic cavities and renal stones, consistent with chronic lithiasic pyonephrosis.

Left nephrectomy was indicated given the non-functional nature of the kidney and the persistent risk of infectious complications (Figure 3).

Figure 3. Gross nephrectomy specimen: (A) external view of the enlarged ectopic kidney; (B, C) cut sections showing extensive renal parenchymal destruction with pyonephrotic cavities and renal stones, consistent with chronic lithiasic pyonephrosis.

Postoperative outcome

The postoperative course was unventful, and the patient was discharged home a few days after surgery in good general condiition, with preserved renal functiom

Discussion

PEK results from arrest of renal migration between the 6th and 9th weeks of embryonic life. Under normal circumstances, the kidney migrates from the pelvic region to the lumbar region while undergoing medial rotation. Interruption of this process leads to pelvic ectopia.[1] This anomaly is frequently associated with renal malrotation, aberrant vascularization arising from the iliac vessels or aorta, and a short, sometimes tortuous ureter. These anatomical features account for the difficulties in urinary drainage and the predisposition to complications.[2]

The pathophysiology of PEK is primarily driven by urinary stasis, which results from anomalies of the ureteropelvic junction, malrotation, and extrinsic compression by pelvic structures.[2] This stasis promotes bacterial proliferation leading to recurrent infections, crystalline precipitation causing urolithiasis, and progressive elevation of intrarenal pressure ultimately damaging the parenchyma. Urolithiasis has been reported in up to 50% of symptomatic cases.[3] In our patient, these cumulative mechanisms resulted in a succession of infectious episodes evolving toward chronic pyonephrosis and complete renal destruction.

PEK is frequently asymptomatic and discovered incidentally. When symptoms occur, they typically consist of atypical pelvic or abdominal pain, non-specific urinary symptoms, or a palpable pelvic mass. Its unusual anatomical location is a well-recognized source of diagnostic wandering, with possible confusion with digestive or gynecological conditions.[2] This delay in recognition is particularly consequential, as it allows complications to accumulate silently until significant and often irreversible renal damage has occurred, as illustrated by our case.

Imaging plays a central role in both diagnosis and therapeutic planning. Uro-CT scanning constitutes the gold standard examination, providing precise anatomical delineation of the ectopic kidney, characterization of associated complications, and assessment of residual renal function.[4] In our patient, uro-CT was instrumental in demonstrating the extent of parenchymal destruction, the locoregional infectious sequelae including psoas abscess and gluteal collection, and the morphology of the contralateral compensatory kidney.

Treatment of PEK depends on the residual function of the affected kidney and the nature of its complications. Conservative management, including antibiotherapy, percutaneous drainage, and endoscopic treatment of obstruction, is appropriate in early or moderately complicated cases. However, nephrectomy is indicated when the kidney is non-functional, chronically infected, or at persistent risk of life-threatening sepsis.[3] Recent advances in minimally invasive surgery, including laparoscopy and robotic-assisted approaches, have improved the safety and feasibility of nephrectomy in this anatomically challenging setting.[5] The surgical procedure remains technically demanding due to vascular variations and extensive inflammatory adhesions, requiring thorough preoperative planning. In our patient, the long-term prognosis is favorable given the functionality of the contralateral right kidney, which had developed adequate compensatory hypertrophy.

Conclusion

Pelvic ectopic kidney can evolve toward severe and irreversible complications when diagnosis is delayed. Pyonephrosis, renal destruction, and contiguous spread of infection represent the most feared outcomes of this condition. Nephrectomy remains the reference treatment for non-functional kidneys with persistent infectious risk. Heightened clinical awareness, combined with appropriate cross-sectional imaging, is essential to ensure early diagnosis and prevent these advanced presentations.

Conflicts of interest

There is no conflict of interest between the authors of this work.

Ethics approval and consent to participate

The ethics committee of the Faculty of Medicine of Rabat has given us its agreement. Informed and verbal consent to participate in the study was provided by our patients. The reference number is not applicable.

Acknowledgements

Not applicable.

References

1. Benchekroun A, Kasmaoui EH, Jira H, et al. Pathological pelvic kidney. Apropos of 11 cases. *Ann Urol (Paris)*. 2002;36(4):231–235.
2. Malek RS, Kelalis PP, Burke EC et al. Ectopic kidney in children and frequency of association with other malformations. Mayo Clin Proc. 1971;46(7):461–467.
3. Ouskri S, El Aboudi A, Ziani I, et al. Pathological ectopic kidney: Rare cases report and review of literature. *Int J Surg Case Rep*. 2025;131:111345.
4. Patel P, Radu I, Kakouros N, et al. Incidental pelvic ectopic kidney discovery during Pre–TAVR imaging: implications for surgical planning. *Am J Case Rep*. 2025;6:e947068.
5. Ahmed A. Laparoscopic nephrectomy for ectopic pelvic kidney with pyonephrosis. *Case Rep Urol*. 2024.