

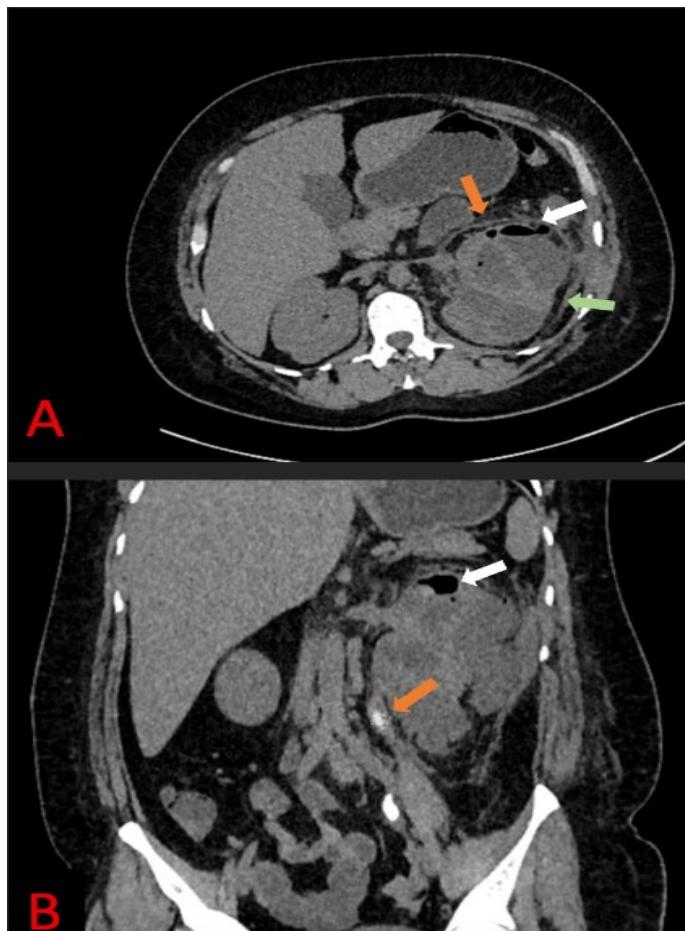
CASE REPORT**85. Challenging the Paradigm: Emphysematous Pyelonephritis in a Culture-Negative, Non-Diabetic Patient**Wilson S. Peñafiel-Pallares,¹ Juan Velez-Posada.¹¹Universidad de las Américas, Ecuador

Background: Emphysematous pyelonephritis (EPN) is a necrotizing infection characterized by gas within the renal parenchyma and perirenal tissues. It is highly fatal, particularly in patients with diabetes mellitus or ureteral obstruction and has predilection for the left kidney. The Huang and Tseng classification is most typically applied to stratify severity. This case is remarkable because of the extremely rare reports of EPN in non-diabetic patients with negative urine cultures, occurring in up to 30% of reported cases.

The Case: A 41-year-old female with history of bilateral nephrolithiasis, presented with severe left flank pain, radiating to the lumbar and inguinal regions, in association with dysuria, oliguria, and vesical tenesmus. Physical examination revealed significant tenderness of the left flank. Laboratory findings indicated profound leukocytosis, and urinalysis showed signs of infection but no urine culture growth. Non-contrast uro-Computed Tomography demonstrated bilateral nephrolithiasis, left-sided hydronephrosis, emphysematous changes in the renal parenchyma, and inflammatory involvement of Gerota's, Lateroconal, and Zuckerkandl's fascia. Based on radiological criteria, the case was classified as Huang and Tseng grade IIIB. The patient was managed with broad-spectrum intravenous antibiotics and supportive measures, with subsequent clinical improvement and no symptoms recurrence at 6 months-follow-up.

Conclusion: Emphysematous pyelonephritis is a life-threatening infection most commonly associated with diabetes, yet it may also occur in non-diabetic patients with obstructive uropathy. Negative urine cultures do not exclude the diagnosis. Radiologic findings play a fundamental role in classification and management decisions. Early diagnosis and prompt treatment are critical for a favorable outcome.

Figure 1. Axial and Coronal Views of UROTAC Simple CT Scan Showing [Specify Pathology/Area].



Legend: (A) Axial non-contrast uro-CT showing air within the left renal parenchyma (white arrow), inflammation of Gerota's fascia (orange arrow), and pararenal tissue involvement (green arrow). (B) Coronal abdominal and pelvic CT showing left ureteral lithiasis (orange arrow), increased volume of the left renal parenchyma, and the presence of gas in the renal dome (white arrow).

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