

INTRODUCTION

Emphysematous pyelonephritis (EPN) is a necrotizing renal infection with gas formation. Despite CT being the diagnostic gold standard, POCUS can offer vital early clues, especially in stable patients with nonspecific symptoms. Mortality remains significant, especially with delayed treatment. Early USG recognition is thus crucial in emergency settings.

CASE DESCRIPTION

A 54-year-old woman with a history of diabetes and hypertension presented with a 3-day history of persistent, colicky left flank pain radiating from the loin to groin. She had experienced a transient febrile illness five days prior but was afebrile and clinically stable upon arrival. She denied dysuria, hematuria, or urinary frequency. On examination, she was alert, with normal vital signs and left renal angle tenderness. Bedside ultrasound revealed reverberation artifacts and dirty shadowing in the left upper quadrant, with an inability to visualize the left kidney, raising suspicion of intrarenal gas. No hydronephrosis or perinephric fluid was seen.



Fig. 1 showed the USG finding over LUQ and Fig. 2 showed the CTU finding of patient

DISCUSSION

Imaging confirmed ruptured emphysematous pyelonephritis (EPN), with gas pockets seen throughout the left kidney, ureter, bladder, and surrounding tissues. A plain X-ray first showed gas in the renal area, and CT urography later confirmed the extent of the gas. Additional findings included a VUJ stone and pneumoperitoneum, with air possibly tracking along the splenic vein. This case highlights the value of POCUS in raising early suspicion for EPN even in non-toxic-appearing patients. Classical sonographic findings—echogenic foci, dirty shadowing, and reverberation artifacts—may be subtle but are critical red flags. Early detection with ultrasound allows expedited imaging, intervention, and infectious disease management. While CT remains confirmatory, reliance solely on classic sepsis signs may delay recognition.

CONCLUSION

In diabetic patients with flank pain, even in the absence of sepsis, POCUS can reveal early signs of EPN. Emergency physicians should be vigilant for sonographic gas artifacts that may precede hemodynamic deterioration and guide timely, lifesaving care.

KEYWORDS

Emphysematous pyelonephritis, POCUS, Intrarenal gas, diabetic renal infection, emergency imaging diagnosis

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