



Emphysematous Pyelonephritis: Not an Everyday Diagnosis!

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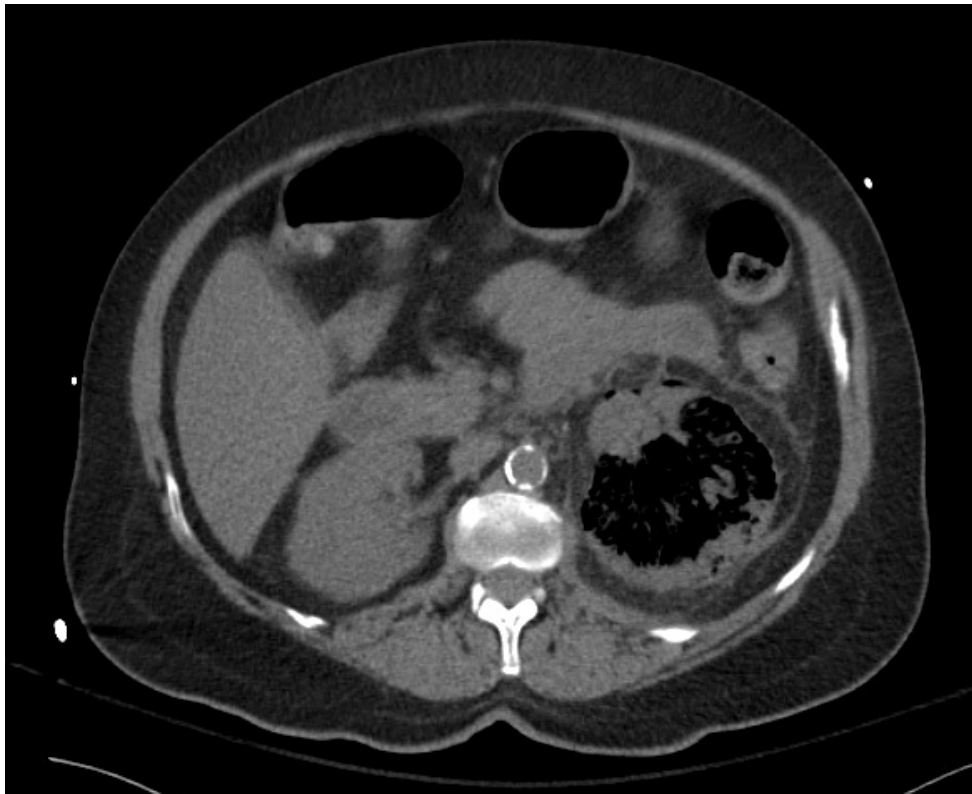
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A 52-year-old female known to have uncontrolled type 2 diabetes mellitus (hemoglobinated A1c level of 11.2%) and history of recurrent urinary tract infections was admitted with diabetic ketoacidosis and sepsis presumably secondary to a urinary infection. Physical examination was noteworthy for left flank tenderness. Computed tomography of the abdomen and pelvis revealed diffuse air throughout the parenchyma within Gerota's fascia consistent with emphysematous pyelonephritis (see image). The patient was started on broad-spectrum antibiotics and underwent left nephrectomy. Post-operatively, she required pressor agents for septic shock. A urine culture grew ceftriaxone-sensitive *Escherichia coli*. She was discharged to finish a 14-day course of intravenous antibiotics which she tolerated well with no other complications.

Discussion

Emphysematous pyelonephritis (EP) is an acute necrotizing infection complicated by gas formation within the renal parenchyma.¹ Four factors lead to risk for EP: high blood glucose, poor tissue perfusion, the presence of gas forming bacteria, and immunosuppression. *E. coli* is the pathogen in most cases. However, EP also has been described in association with infections by *Klebsiella*, *Proteus*, *Streptococcus*, and *Candida* species. The diagnosis usually is made radiologically with computed tomography being the modality of choice. EP is associated with high rates of morbidity and mortality.² Management is based on radiological classification and risk factors and ranges from conservative management (antibiotics and percutaneous drainage) to nephrectomy.

Physicians should consider the diagnosis of emphysematous pyelonephritis in the setting of diabetic ketoacidosis and abdominal pain.

References

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- ² Sharma PK, Sharma R, Vijay MK, Tiwari P, Goel A, Kundu AK. Emphysematous pyelonephritis: Our experience with conservative management in 14 cases. *Urol Ann* 2013; 5 (3):157-162. PMID: 24049377.

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