



A bizarre abdominal XR in a patient with fever and dysuria

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Case Report

A 50 year old Chinese male with no known past medical history presented with dysuria and fever for 3 days. On presentation at the emergency department, he was febrile with temperature of 39°C, tachycardic with heart rate of 110 beats per minute, and blood pressure of 90mmHg systolic 50mmHg diastolic. On examination, there was fullness in the right upper quadrant of his abdomen with associated tenderness on palpation. Renal punch was positive on the right.

White cell count and C-reactive protein were elevated at $25.09 \times 10^9/L$ and 221.9mg/L respectively. Liver function test and renal panel were unremarkable and within normal range. Urine microscopic examination showed pyuria of 120 white cells/uL. Blood culture and midstream urine culture was negative. An abdominal X-ray was performed (Figure 1), showing a 13.1 x 11.3cm locule of

gas in right mid abdomen.

Further evaluation with computer tomography of abdomen and pelvis (Figure 2) revealed a 9.8 x 9.1 infected right renal cyst with air-fluid level. There was no hydronephrosis or gas within the renal pelvis. The liver was normal and this was supported by a normal liver panel. The bowel loops were of normal caliber. Patient was given fluid boluses in view of borderline bloods pressure. Intravenous augmentin was commenced and he underwent emergent percutaneous drainage of the infected renal cyst. Fluid culture was positive for pansensitive Escherichia coli. His temperature and inflammatory markers down-trended after percutaneous drainage, and blood pressure improved with fluid boluses. Repeat computer tomography imaging of the kidneys post-drainage showed improvement. Patient was discharged on day 4 with a two week course of oral augmentin. He was clinically well when reviewed in clinic on day 10 for drain removal.



Figure 1: Abdominal radiograph (supine view): 13.1 x 11.3cm locule of gas in right mid abdomen

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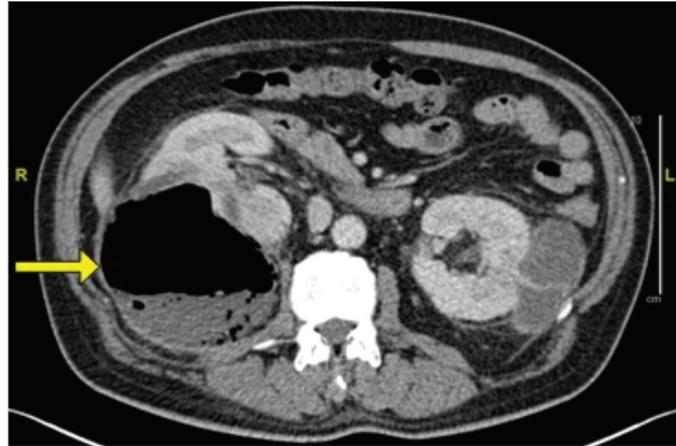


Figure 2: Computer tomography of abdomen and pelvis (axial view): yellow arrow indicating suppurative renal cyst with air-fluid level

Discussion

Emphysematous infections of the kidney are emergencies that should be attended to in a timely manner as patients can deteriorate quickly. The occurrence of renal cysts are common in the general population, however emphysematous infection and suppuration of solitary renal cysts are extremely rare. Even when infection of a renal cyst occurs, it usually occurs in the context of polycystic kidney disease. Cystic infection accounts for approximately 10% of hospitalization cases in patients with adult polycystic kidney disease. To the best of our knowledge, this is the ninth case of a emphysematous infection of a renal cyst being reported in the literature.

Emphysematous renal cyst infections are more commonly associated with autosomal dominant polycystic kidney on a background of multiple renal cysts [1]. Suppuration of a solitary renal cyst is rare. It results from hematogenous bacterial spread or transmission through the cyst wall from a site of pyelonephritis [2,3]. Another mode of suppuration would be iatrogenic germ inoculation[2,3] if the patient had undergone a prior percutaneous puncture. Emphysematous pyelonephritis (EPN) is a reasonable differential owing to the prominent size of gas collection on the AXR. EPN refers to acute necrotizing gas-forming infection of the renal parenchyma. It affects individuals with diabetes or are immunocompromised [2,3], none of which fulfilled by our patient. It presents usually presents unilaterally,

but may be bilateral in 10% of cases. The mainstay of treatment of emphysematous kidney infections is percutaneous drainage and culture-directed antibiotics [3,4]. Nephrectomy is reserved for extensive disease with a fulminant course and poor response to drainage and antibiotics [3,4]. or if the cyst has features of malignancy (e.g. Bosniak 3, 4 cysts).

Disclosure statement

There are no conflicts of interest to disclose.

Consent

Informed consent has been obtained from patient for usage of radiograph images.

References

1. Sallée M, Rafat C., Zahar JR. Cyst infections in patients with autosomal dominant polycystic kidney disease. *Clin J Am Soc Nephrol.* 2009;4:1183–9
2. Ayari Y, Sellami A, Boussaffa H, Taktak T, Ben Rhouma S, Nouira Y. Emphysematous infection of a solitary renal cyst: A case report and literature review. *Urol Case Rep.* 2018;22:1-2
3. McGowan AJ, Jr., Ippolito J.J. Infected solitary renal cyst. *J Urol.* 1965;93(5):559–561
4. Mohamed A, Quhal F. Ruptured emphysematous renal cyst. *Urol Ann.* 2016;8(4)