

Renocolonic Fistula, A Rare Complication of Emphysematous Pyelonephritis

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1. Clinical Image

A 62-year-old lady with history of left renal stones, hypertension and impaired fasting glycemia was emergently admitted because of acute onset of abdominal pain. Physical examinations found left-sided abdominal tenderness and ballotable left kidney. Laboratory investigations found impaired renal function and leukocytosis. The serum creatinine elevated to 351 $\mu\text{mol/L}$ (more than two-fold increase from the baseline level) and serum white cell count reached $30.3 \times 10^9/\text{L}$ despite antibiotic therapy. Urinalysis found persistent pyuria but there was no positive bacterial culture. Contrast-enhanced computed tomography (CT) showed left emphysematous pyelonephritis, multiple left calcific renal stones, left reno-colonic fistula and gross hydro pneumoperitoneum. (Figures 1 and 2) Emergency laparotomies found grossly enlarged left kidney containing multiple stones and large cysts with pustular content, severely inflamed descending colon with perforation into one of the anterior left renal cysts. Microbiological culture of the resected left kidney found multiple organisms including *Escherichia coli*, *Enterococcus* and *Bacteroides fragilis*. Peritoneal swab culture found *Enterococcus avium*.

Reno-intestinal fistulae are rare [1]. Recognized iatrogenic causes are percutaneous nephrolithotomy [2] and cryoablation of renal cell carcinoma [3]. Other causes include malignancy (such as colonic and renal cell carcinoma), trauma and chronic infection (such as tuberculosis). The diagnosis concomitant reno-colonic fistula and emphysematous pyelonephritis require high index of clinical suspicion. CT, with multiplanar reformatted imaging, is the optimal investigation to demonstrate the anatomical extents and the causes of emphysematous pyelonephritis.

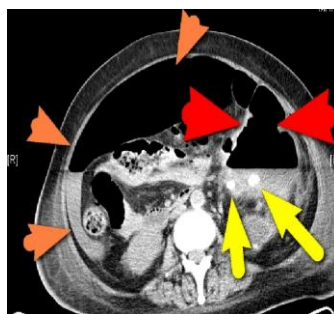
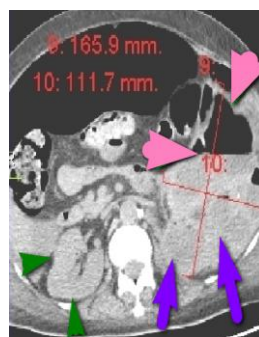


Figure 1 & 2: Axial CT images showed the left kidney filled with cystic lesions (purple arrows), INTRA-RENAL GAS (pink arrowheads), large hydro pneumoperitoneum (orange arrowheads), calcific renal stones (yellow arrows), fistulous communication between the anterior left kidney and the descending colon (red arrowheads). The right kidney (green arrows) was normal.

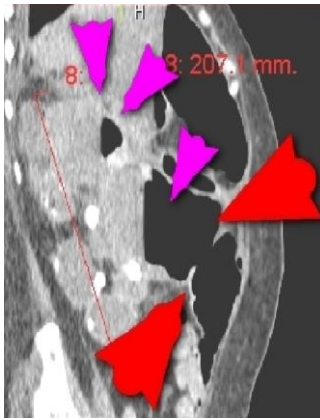


Figure 3: A sagittal CT image showed markedly enlarged kidney (around 20.7 cm in craniocaudal length), small left intra-renal gas (pink arrowheads) and the left reno-colonic fistula (red arrowheads).

References

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