Case Report

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A Smoldering Case of Pyelonephritis

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Introduction/Background

Renal abscesses begin with urinary tract infections, which spread to the kidney, usually as a result of pyelonephritis. Patients are especially at risk for renal abscesses if they have anatomical abnormalities in the urinary tract, predisposing to infection. Other risk factors include pregnancy, diabetes mellitus, immunosuppression, renal calculi, or ureteral obstruction [3].

Case Description

Patient is a 19 year old female with a history of left sided ureteral obstruction status post pyeloplasty (at age 2) who presented to the emergency room with left sided flank pain for 3 days associated with fever, nausea, vomiting consistent with pyelonephritis. She was diagnosed with a urinary tract infection outpatient and tried on bactrim for 2 days and macrobid for 1 day. Ultrasound revealed severe chronic left sided hydronephrosis (Figure 1) with right kidney compensatory hypertrophy. Computerized tomography (CT) urogram showed severe chronic left sided hydronephrosis (Figure 2). Initial laboratory results on admission included WBC count of 11.1, and urinary analysis with positive nitrites.

On admission, patient was started on intravenous ceftriaxone 1 gram q24h. Urology was consulted given patient history of pyeloplasty and left sided hydronephrosis; they agreed with current management. On hospital day 3, leukocytosis remained uptrending and patient was continuing to spike fevers despite antibiotic therapy so antibiotic therapy was broadened. Blood and urine cultures remained negative. Infectious disease was consulted. After discussion with radiologist and infectious disease specialist, it was suggested that maybe the patient's initial CT revealed a pus filled left kidney as opposed to a urine filled left kidney. We started to suspect that patient may have a renal abscess and after a multidisciplinary discussion, it was agreed upon that a nephrostomy tube should be placed (Figure 3) to drain the renal abscess. Within the first 24 hours, patient drained 2 liters of purulent fluid (Figure 4) and subsequently, her fever and leukocytosis resolved. Patient became stable and was discharged on Amoxicillin/Clavulanate.

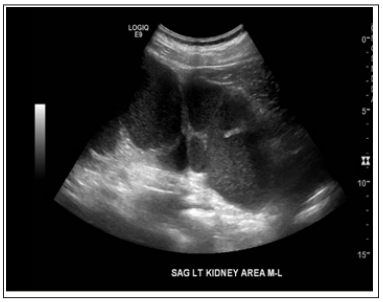

Figure 1: Renal ultrasound showing severe chronic left hydronephrosis.

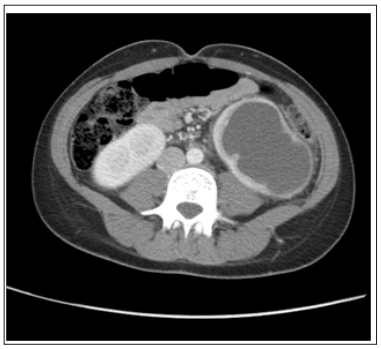

Figure 2: Computerized tomography showing severe chronic left sided hydronephrosis

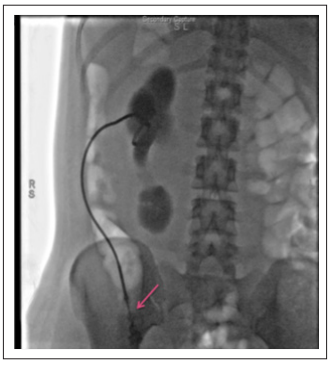

Figure 3: Left sided nephrostomy tube placement with red arrow indicating site of obstruction

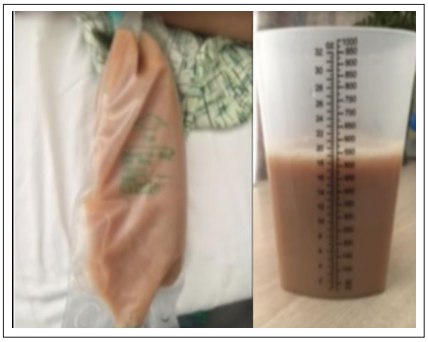

Figure 4: Purulent fluid drained from left sided nephrostomy tube.

Discussion

This case emphasizes the need for practicing physicians to have a low threshold for suspecting renal abscesses, especially in patients with prior urological surgeries. If the patient's fever is not resolving and leukocytosis holds steady despite appropriate antibiotics, the next appropriate course of action is review imaging and consider a renal abscess. If suspicion is high, it may be appropriate to place a nephrostomy tube, especially if the abscess measures >5 cm [1,2]. Placement of the tube can either drain the purulent fluid or obtain urine directly from the source to culture. The rate of cure with appropriate antibiotics in conjunction with percutaneous drainage is 63% [3]. Delay in diagnosis and treatment can subsequently lead to higher morbidity and mortality for the patient.

References

1. Wu, Ming-Jui (2014) Proper diagnosis and treatment of renal abscess: A case report. International Journal of Case Reports and Images (IJCRI)5:854.
2. Siegel, Judy Fried et al. (1996) Minimally Invasive Treatment of Renal Abscess. The Journal of Urology Jan155:52-55.
3. Yen, David Hung-Tsang et al. (1999) Renal Abscess: Early Diagnosis and Treatment. The American Journal of Emergency Medicine. Mar17:192-197.