

A case of Emphysematous Pyelonephritis in Kidney Transplantation patient

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Introduction: Emphysematous pyelonephritis (EPN) is an acute purulent disease characterized by the presence of localized gas formation within the kidneys, showing rapid progression and multiple organ failure, resulting in a relatively high mortality. Kidney transplant recipients are at an increased risk of infections due to the immunosuppressive medications they receive. While EPN generally responds to antibiotic treatment, in some cases, it may necessitate nephrectomy. Studies have indicated that approximately 50% of transplant patients who develop EPN eventually require nephrectomy. We present a case of EPN that occurred in a kidney transplant patient.

Case: A 61-year-old female patient was transferred to the emergency room with a fever of 39.6 degrees Celsius. She had a medical history of type 2 diabetes, hypertension, and adrenal hyperplasia. Of particular note, she had undergone a kidney transplant 3 months prior to this hospitalization and subsequently developed acute pyelonephritis 14 days after the transplant. On ER admission, the patient had a blood pressure of 103/64 mmHg and a heart rate of 72 bpm. Lab results: WBC 8100 cells/ μ L, Hb 11.1 g/dL, BUN/Cr 33.0/1.68mg/dL, Tacrolimus TDM 33.4 ng/mL, CRP > 8.0 mg/L. Urine culture showed *Klebsiella pneumonia*. Enhanced abdomen CT scan showed emphysematous change and necrotic areas in the transplanted kidney. Additionally, *Klebsiella pneumonia* (ESBL+) was cultured from both the blood and urine. Based on susceptibility testing, the patient was treated with piperacillin/tazobactam and Amikacin. Due to decreased urine output (oliguria), regular hemodialysis was initiated during the treatment period. On 20th admission day, a subcapsular hematoma was discovered in the transplanted kidney through a follow-up CT scan. Consequently, percutaneous catheter drainage was performed, and the drainage fluid appeared dark and bloody. On 27th admission day, the urine output and eGFR were improved, and regular hemodialysis was discontinued. On 37th admission day, BUN/Cr were 14.6/0.77mg/dL respectively. the patient recovered the general performance fully and discharged.

