



Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care

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Acute Suppurative Tubulointerstitial Nephritis Leading to Irreversible Allograft Loss Following Deceased-Donor Renal Transplantation: A Case Report

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Objectives : Renal transplantation remains the most effective renal replacement therapy for end-stage renal disease (ESRD). Long-term immunosuppression, however, renders recipients highly susceptible to infectious complications. Acute suppurative tubulointerstitial nephritis (ASTIN), characterized by bacterial invasion of the renal parenchyma with frank microabscess formation within the tubules and interstitium, is a rare but potentially catastrophic complication in immunocompromised transplant recipients. Patients with diabetic nephropathy carry additional risk due to pre-existing immune dysregulation and inherent susceptibility to urinary tract infections (UTIs). We report a case of recurrent *Klebsiella pneumoniae* UTI progressing to ASTIN with irreversible allograft failure in a diabetic deceased-donor renal transplant recipient.

Methods : A 62-year-old male with ESRD secondary to diabetic nephropathy underwent deceased-donor renal transplantation (DDKT) in May 2024. He was maintained on triple immunosuppression with tacrolimus, mycophenolate mofetil, and prednisolone. Initial post-transplant allograft function was satisfactory with serum creatinine (sCr) stabilizing at 1.5 mg/dL. In July and August 2024, the patient developed recurrent UTIs with urine cultures consistently yielding *Klebsiella pneumoniae*, for which antibiotic therapy was administered. A further episode of *K. pneumoniae* bacteriuria was documented in November 2024. Despite antibiotic treatment, allograft function progressively deteriorated, with sCr rising to 2.0 mg/dL by October 2024. In February 2025, the patient was admitted with markedly deteriorated allograft function (sCr 10.0 mg/dL), necessitating initiation of hemodialysis. Contrast-enhanced CT of the allograft demonstrated multiple hypodense lesions within the renal parenchyma consistent with microabscess formation. Allograft biopsy was performed.

Results : The overall histopathological findings were diagnostic of acute suppurative tubulointerstitial nephritis without evidence of concurrent rejection. Prolonged pathogen-directed intravenous antibiotic therapy was administered; however, allograft function failed to recover. The patient remains hemodialysis-dependent at the time of this report.

Conclusions : Early and aggressive microbiological surveillance, prompt pathogen-directed therapy, and timely allograft biopsy are essential for allograft preservation in this vulnerable population.

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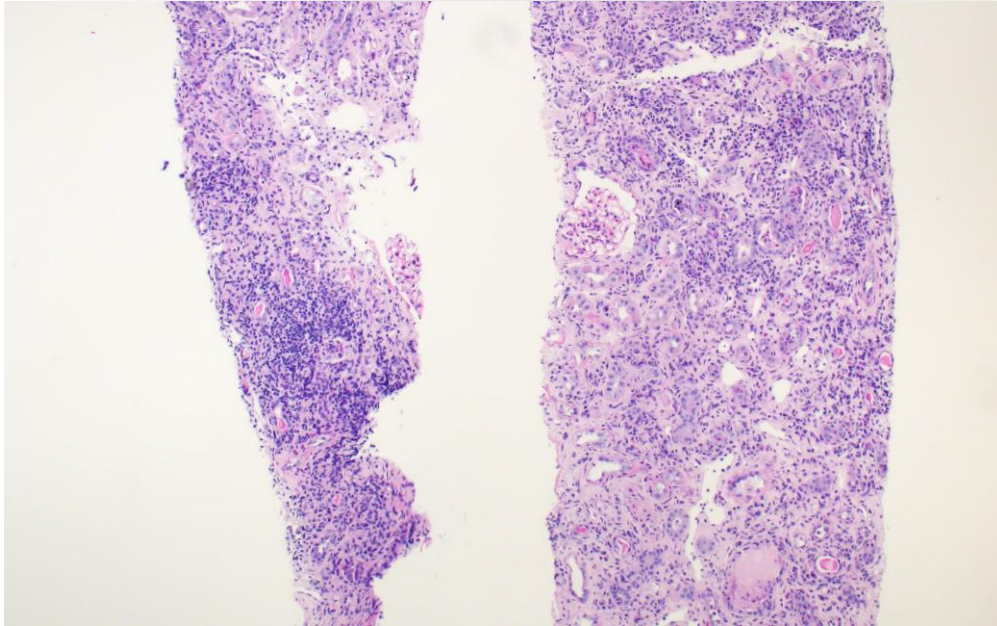
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