



Case Report

Sloughed Renal Papilla - A Cause of Ureteral Obstruction after Renal Transplantation

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Abstract

This is a case of 31-year-old diabetic male patient, who underwent second renal transplant at our hospital. After renal transplant surgery, patient had urinary tract infection following which a sloughed papillae caused obstruction to the graft kidney.

Keywords: Infection; Obstruction; Papilla; Transplant; Uropathy

Introduction

Ureteric obstruction in renal transplant recipients is a less common but debilitating complication which compromises the graft functioning. A number of etiologies have been proposed. In our case, a sloughed papilla caused the obstructive uropathy. Since we could not retrieve the papilla endoscopically, open re-exploration was done to relieve obstruction.

Case Presentation

A 31-year-old male patient was diagnosed as ESRD in the year 2010. Patient underwent renal transplantation in November 2011. 3 years after his first transplant, he developed worsening serum creatinine and proteinuria for which renal graft biopsy was done twice in 2014 and 2016. However, biopsy did not reveal any significant findings. He was again initiated on hemodialysis in December 2020. The patient underwent second live related kidney transplant on 12.04.2021 at our hospital. Graft kidney had single renal artery and single renal vein. Kidney showed prompt diuresis after releasing vascular clamps. Ureter was anastomosed to the urinary bladder over DJ Stent by modified Leich Gregor technique. Anti-Thymocyte Globulin 2mg/kg was used for induction. Steroids, tacrolimus and mycophenolate mofetil were used as maintenance immunosuppression. His father was the donor whose medical evaluation was normal. Blood group of both donor and

recipient was A Positive. Patient is a known case of Hypothyroidism and Diabetes Mellitus. During his hospital stay, his creatinine showed following trend - 10.3 - 6.4 - 5.3 - 3.0 - 1.5 - 1.2 - 1.0 mg/dl. Routine first post operative day doppler USG showed good graft vascularity and normal doppler indices. Tacrolimus dose was adjusted as per his tacrolimus levels. Foley catheter and drain was removed on 5th and 6th postoperative day respectively. Patient was discharged on 7th post operative day with creatinine level of 1.0. He was advised to follow up in nephrology department on regular basis.

On 26.04.2021, patient was diagnosed as Acute Graft Dysfunction as his serum creatinine rose to 1.6mg/dl and had proteinuria of 0.96 g/day. Graft doppler ultrasound scan was grossly normal. He underwent graft renal biopsy and was given four doses of pulse steroids (Methylprednisolone 500 mg each) in view of suspicion of acute rejection. His biopsy report, however, subsequently did not show any features of rejection.

On 02.08 2021, patient was again admitted to the hospital with fever and loose stools. His serum creatinine rose to 7.2 mg/dl. His urine culture showed Enterococcus faecium. He was managed with culture directed antibiotics. In view of slow initial response and hyperkalemia, patient underwent two sessions of dialysis. Graft kidney biopsy was also done and steroid pulse therapy was given in view of suspicion of acute graft rejection. Histopathological examination showed features of pyelonephritis. Ultrasound scan showed increased graft kidney size with perinephric fat stranding and mild dilatation of pelvicalyceal system. Patient

was finally discharge with a serum creatinine of 1.7mg/dl. On 29.09.2021, patient was again admitted to the hospital with acute graft dysfunction. His serum creatinine rose to 2.8mg/dl. Graft kidney biopsy showed features of Acute Tubular Necrosis with no features of rejection. Ultrasound scan showed mild to moderate hydroureteronephrosis. EC Scan was done which showed mildly hyperperfused graft kidney with impaired cortical function and prolonged nephrogenic phase. The patient underwent Cystoscopy but retrograde DJ Stenting could not be done. Cystoscopy revealed something protruding from the graft kidney ureteric orifice (likely sloughed papilla), which did not allow the guide wire to pass into the graft kidney (Figure 1). Antegrade DJ Stenting was attempted but the sloughed papilla did not allow the guidewire to pass into the ureter. Percutaneous nephrostomy was therefore done. His serum creatinine gradually decreased to 1.8mg/dl.

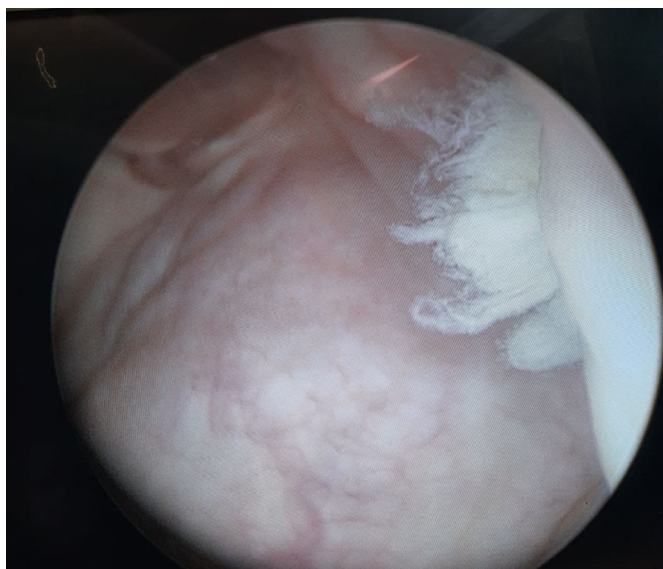


Figure 1: Sloughed papilla seen on cystoscopy.

On 18.10.2021, patient underwent exploration, dense adhesions were found around the graft kidney and ureter due to which lower half of graft ureter couldn't be dissected. Native ureter was dissected and upper part of graft ureter was anastomosed to the native ureter in an end to side fashion over a DJ Stent after wide spatulation. Patient tolerated the post operative period well. He was discharged with a serum creatinine level of 1.6mg/dl on 9th post operative day. His Foley catheter was removed on 14th post operative day and PCN was clamped. The patient did well in the subsequent days and therefore DJ stent, drain and PCN were subsequently removed.

Discussion

Ureteric obstruction in post renal transplant recipient patients is an uncommon but very debilitating complication which

compromises the graft functioning. Many etiologies have been proposed. [1] Ischemia, infections, calculi, external compression and faulty surgical technique are among the common causes. Papillary necrosis is common in diabetic patients with pyelonephritis. Our patient was also diabetic and developed ureteric obstruction secondary to papillary necrosis following an episode of urinary tract obstruction. [2] Ultrasonography is an excellent tool to detect hydroureteronephrosis. Computed Tomography scan is used to aid the diagnosis especially if extrinsic compression is suspected. In some cases, MRI or renal scan may be needed to aid in the diagnosis. [3] Management options for ureteric obstruction in post renal transplant recipients include endoscopic or open surgical procedures. Percutaneous nephrostomy or DJ Stenting is an excellent procedure for temporary stabilization and recovery of graft function. [4,5] We could neither do retrograde nor antegrade DJ Stenting as guide wire could not be negotiated across the ureteric orifice which was blocked by the sloughed papilla. Kamath et al [6] described a case where they have removed the sloughed papilla from a transplant kidney through percutaneous approach. We attempted to remove the papilla using a flexible scope but it was not successful. We finally did a percutaneous nephrostomy and planned the patient for definitive repair. Surgical options in such patients include implantation of the normal healthy ureter to the bladder, ureteroureteric anastomosis using the recipient ipsilateral ureter or pyeloureterostomy between the donor renal pelvis and recipient ureter. Creation of Boari flap or small bowel interposition may be necessary in some cases. [7] Due to dense adhesions around the distal half of ureter, we preferred to dissect out the native ureter and create a uretero-ureterostomy over a DJ Stent after wide spatulation.

Conclusion

Urinary tract infection in a patient with history of renal transplant poses a heightened risk of complications. Ureteral obstruction due to a fragment of papillary necrosis should be suspected if there is a progressive deterioration in renal function. Prompt and aggressive management should be carried out to prevent any permanent graft damage

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