

EXPECTED RENAL FUNCTION IN POST-KIDNEY TRANSPLANTATION NOT ACHIEVED DUE TO RENAL ARTERY STENOSIS. A CASE REPORT

Authors: Melideo Matías, Anticura D, Betas R, Castro D, Galardi G, Moreno J, Ramirez M, Sepulvera O,,

Introduction

Transplant renal artery stenosis (TRAS) is a well-recognized vascular complication after kidney transplant. It occurs most frequently in the first 6 months after kidney transplant, and is one of the major causes of graft loss and premature death in transplant recipients. Prompt diagnosis and treatment of TRAS can prevent allograft damage. The renal hypoperfusion actives the renin–angiotensin–aldosterone system and it leads to sodium and fluid retention, and patients may develop edema, hypertension and occasionally congestive heart failure. Percutaneous transluminal angioplasty with stent placement is generally the first-line therapy. We present two cases of TRAS with different clinical presentation

Case 1:

39 yo man, 10 years on hemodialysis (CKD unknown cause), HT controlled, receives a cadaveric donor transplant (donor: 50-year-old man, cause of death: stroke, pre-ablation Cr 0.7 mg/dl) Histocompatibility: PRA 0%, Mismatch 3 (0/1/2), CDC Crossmatch and Flow cytometry was negative. The cold ischemia time (CIT) was 19 hours. The induction therapy was: thymoglobulin 4mg/kg (total dose), steroids, MMF and tacrolimus. On back table, vascular anastomosis was performed from the polar renal artery to the renal artery. There're not post-surgery complications, and the patient had Delayed graft function (DGF). He progressively recovered diuresis (2500 ml/d), but without a total decrease in uremic toxins (cr: 5mg/dl). Two weeks later, a renal biopsy was performed, which showed mild acute tubular necrosis. On the other hand, he needs more medications to control hypertension with edema in the lower limbs. In the Doppler ultrasound he had RI 0.7-0.8 in discordance with graft dysfunction. Angiotomography was performed with evidence of severe stenosis close to the anastomosis (1 cm). The diagnosis was confirmed by angiography and a stent was successfully placed, with subsequent recovery of renal function (cr 2mg/dl) and control of hypertension. Furthermore, in the first 3 months he presented ureter stenosis and cellular rejection 1A (Banff), which were resolved (fig 1,2,3)



Figures: 1: angioTC. 2, 3: Percutaneous transluminal angioplasty (PTA) with stent

Case 2:

41-yo man, 10 years on hemodialysis (unknown cause) receives KT from cadaveric donor: SCD, 21 years old, brain death due to head trauma, preablation Cr 0.7 mg/dl, CIT 17 hours. Histocompatibility: PRA 0%, Mismatch 4 (2/2/0). On back table, vascular anastomosis was performed: polar renal artery - the renal artery, without post-surgery complications. It had DGF with gradual recovery of kidney function, reaching after 1 month creatinine 1.9 mg/dl (eGFR 45 ml/min/1,73 m2. Screening BKV and DSA was negative. Urine culture and proteinuria were also negative and the Doppler examination of the graft was normal. Because the kidney function was not as expected, a kidney biopsy was performed, and it was normal. Two months after transplant, he presented obstructive AKI, due to ureteral striscture. On angiotomography, the finding was stenosis of the polar renal artery. A stent was placed by angiography, improving renal function (cr 1.6 mg/dl). The ureteral stricture required nephrostomy for 3 months, and after that it resolved spontaneously (fig 4,5,6,7).



Figures: 4: angioTC 5:isotopic renogram 6,7: PTA

Conclusions:

Two cases with different clinical presentations are presented. Diagnosis requires a high index of suspicion, a multidisciplinary team and ruling out other prevalent pathologies. Unexpected DGF or when optimal kidney function is not achieved alerts for study. The ischemic factor may have contributed to the ureteral stricture. It is always important to test the solution by angiography.