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Allograft dysfunction by transplant renal artery stenosis due to posttransplantation subcapsular hematoma removal operation

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Background: Transplant renal artery stenosis(TRAS) is one of etiology of allograft dysfunction. If TRAS was diagnosed early, it can be cured. But, when diagnosis is delayed, TRAS causes parenchymal necrosis.
Methods: 40-year-old woman, who has end stage renal disease due to IgA nephropathy, underwent kidney transplantation with her elder sister. HLA typing shows no mismatch. Total ischemic time was 110 min. POD 2, Urine output was decreased sharply. We checked non enhanced abdominal CT(Figure 1), that shows subcapsular hematoma and pelvic cavity hematoma. She underwent secondary surgery for hematoma removal. In operation room, renal upper polar capsulotomy was done, then mash material was sutured that site. Bleeding control was successful, but serum creatinine level was still high. At POD 25, abdomen MR angiography(Figure 2) shows anatomotic site between renal artery and internal iliac artery showing acute angle with focal stenosis, and focal hypoperfusion lesion.
Results: Percutaneous transluminal angioplasty(PTA) was implemented. Significant stenosis(>80%) was detected at anastomotic site(Figure 3), then 5mm stent was inserted at stenotic lesion, 5mm balloon angioplasty was done(Figure 4). Renal arterial diameter and blood flow was normalized. At POD 5month, DMSA scan shows multiple focal radioisotope defect, that means graft parenchymal function insufficiency(Figure 5).
Conclusion: 8 month after renal transplantation, serum creatinine level was 3.1mg/dl and GFR was 20ml/min. TRAS was cause of parenchymal necrosis and allograft dysfunction.
Table:
Figures:



Fig.1. Abdomen CT(-): White arrow shows subcapsular and peribladder hematoma



Fig.2. Abdomen MR angiography: White arrow shows transplant renal artery stenosis, about 80%. Yellow arrow shows focal hypoperfusion area



Fig.3. Renal angiography: White arrow shows anastomotic area stenosis, 80%.



Fig.4. PTA: White arrow shows normal arterial diameter after 5mm stent insertion and balloon angioplasty

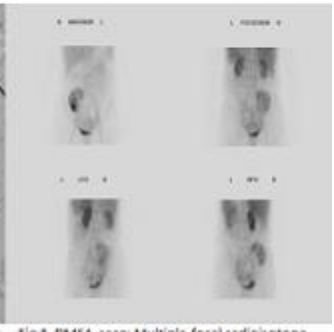


Fig.5. DMSA scan: Multiple focal radioisotope defect.

Keywords: KTP, transplant renal artery stenosis, PTA