

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

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### Vascular Diseases Quiz – Case 6

A 64-year-old white female with a history of renal transplantation was admitted to our Hospital with increased blood pressure (185/100 mmHg) accompanied by peripheral edema and a creatinine level of 2.1 mg/dL. The patient had received a pediatric en bloc renal allograft due to end stage renal disease owing to diabetic nephropathy 3 years before current presentation. After transplantation, a stable baseline serum creatinine concentration of 1.2 mg/dL was achieved by maintenance immunosuppression therapy, while there were no episodes of acute rejection. Additionally, her baseline mean blood pressure was maintained at 120/65 mmHg with 2 antihypertensive medications.

Thirty months postoperatively, her serum creatinine and blood pressure started to rise progressively, while she had also an extending peripheral edema, despite increasing doses of furosemide. Congestive heart failure was excluded by echocardiography, which showed left ventricular ejection fraction of 68%. MRA of the iliac arteries and renal allograft revealed a tight (90%) stenosis (fig. 1) at proximal part of the transplant renal artery. The patient was treated successfully with angioplasty and stenting; within 2 weeks, blood pressure was normalized, edema was resolved and serum creatinine returned to baseline of 1.2 mg/dL.

#### Comments

*Hypertension after renal transplant represents a major risk factor for graft survival as well as for cardiovascular complications in the recipient, making its effective treatment mandatory. Thus, all potentially curable factors contributing to hypertension post-transplant should be looked for carefully and managed appropriately. Transplant renal artery stenosis (TRAS) represents one of the curable causes of post-transplant hypertension. Its incidence has been reported to vary from 1% to 23% in renal allografts. Several factors have been implicated in the etiology of TRAS including atheromatosis, faulty surgical technique, trauma to the renal artery during surgery, disturbed hemodynamics and potentially immune related damage.*

*Clinical features that should raise the suspicion of TRAS include recent onset hypertension, a new bruit over the transplanted*

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**Figure 1.** Magnetic resonance angiography demonstrating a tight stenosis at the proximal part of the transplant renal artery.

*kidney, or a marked change in the character of a pre-existing bruit, unexplained deterioration of allograft function and recurrent unexplained peripheral and/or pulmonary edema. Most commonly these occur within the first 2 years after transplantation. Color Doppler ultrasound is frequently being used as a screening tool for TRAS, but angiography remains the gold standard diagnosis. A stenosis  $\geq 60\%$  is considered significant and requires treatment in an attempt to extend graft and recipient survival. Percutaneous transluminal angioplasty (PTA) with stenting is the treatment of choice for most cases, improving both blood pressure control and kidney perfusion. Surgical approaches are currently reserved in cases of unsuccessful PTA or for lesions not accessible to PTA.*

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*Diagnosis: Transplant renal artery stenosis*

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