Transplant renal artery kinking: a rare cause of early graft dysfunction

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A 50-year-old man with end-stage renal failure due to adult polycystic kidney disease underwent a cadaveric renal transplant. The renal transplant was uneventful and the right kidney was transplanted into the right iliac fossa. There was a single artery, vein and ureter. The kidney reperfused well but there was no primary function.

In the first 24 h he only made 69 ml of urine and the serum creatinine climbed from 616 to 757 mmol/l. A Doppler ultrasound of the transplant kidney was undertaken and this revealed a tardus and parvus abnormality of prolonged acceleration time, diminished acceleration index and loss of the normal early systolic compliance peak/reflective wave complex [1]. A repeat ultrasound later showed the same abnormality with an increased velocity of the main transplant renal artery indicating a high-grade renal artery stenosis. An angiography demonstrated two kinks in the renal artery (Figure 1). The kinks were treated by two stents, 6 mm in diameter and 1.7 cm in length (Figure 2). The patient was heparinized for the next 24 h and then started on clopidogrel.

Transplant renal artery kinking is a rare cause of early graft dysfunction [2]. This is usually due to
malposition of the graft and is more common with the right kidney as the right renal vein is much shorter than the artery and kinking can occur if the vascular anastomoses are inappropriately placed. This can be diagnosed by duplex ultrasonography of the transplant kidney and confirmed by angiography. The treatment options vary and can be a simple nephropexy, a rerouting of the vascular anastomosis or intra-arterial stenting. Our case responded well to an intra-arterial stenting.

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References