

Percutaneous intervention of an iatrogenic transplant renal artery dissection causing early allograft dysfunction



Rajesh Vijayvergiya^{1*}, DM; Ashish Sharma², MS; Ganesh Kasinadhuni¹, DM; Kunaal Makkar¹, DM; Yamasandi S. Shrimanth¹, DM

1. Department of Cardiology, Post Graduate Institute of Medical Education & Research, Chandigarh, India;

2. Department of Renal transplant Surgery, Post Graduate Institute of Medical Education & Research, Chandigarh, India

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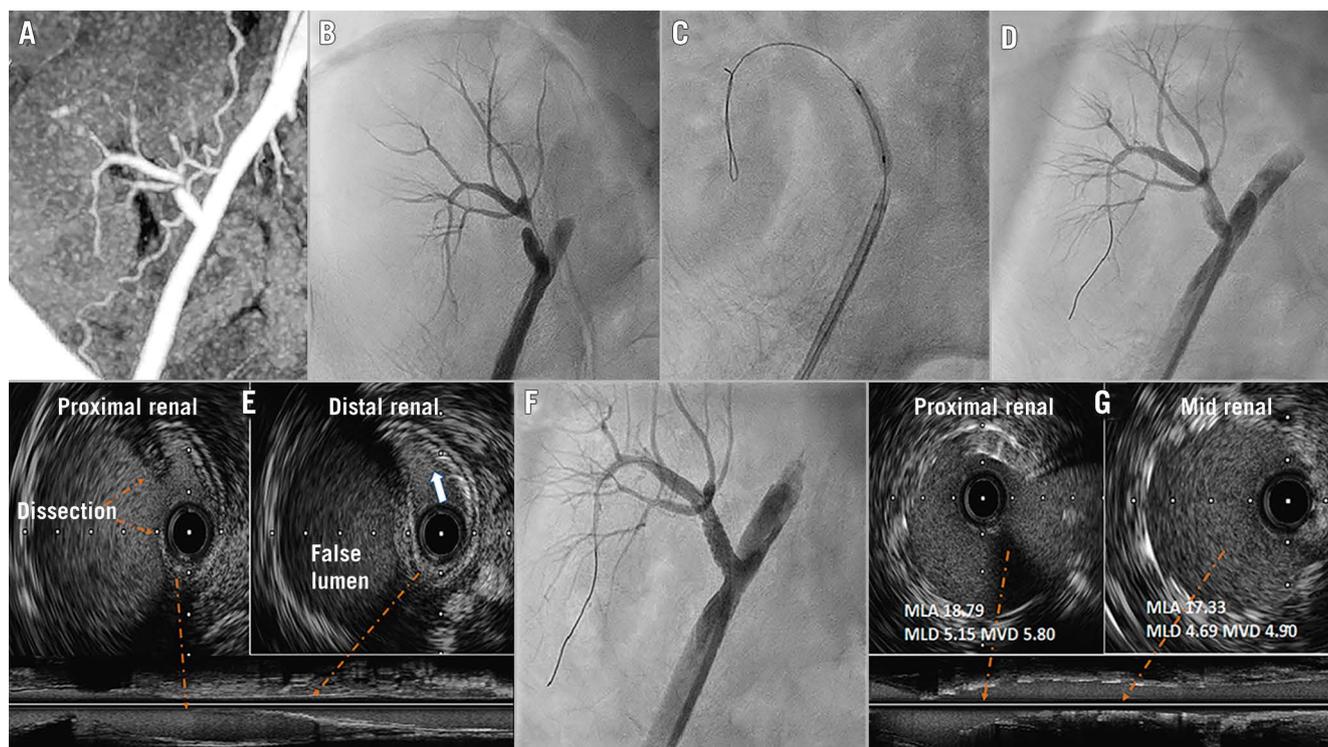


Figure 1. Percutaneous intervention of transplant renal artery stenosis. A) The tomography scan confirmed TRAS distal to the anastomotic site. B) Contrast angiography revealed narrowing of the true lumen and a diminished distal flow. C & D) The transplant renal artery was crossed with a 0.014 inch coronary guidewire and the lesion was dilated with a 2.5×15 mm balloon. E) Intravascular ultrasound (IVUS) showed dissection of the renal artery with the notably compressed true lumen. F) The stent was deployed and a good flow was achieved across the artery. G) IVUS showed a well-expanded and apposed stent. MLA: mean luminal area; MLD: mean luminal diameter; MVD: mean vessel diameter; TRAS: transplant renal artery stenosis

*Corresponding author: Department of Cardiology, Advanced Cardiac Centre, Post Graduate Institute of Medical Education & Research, Sector 12, Chandigarh, 160 012, India. E-mail: rajeshvijay999@hotmail.com

A 24-year-old man had a living relative-donor renal allograft transplant for underlying chronic kidney disease. After the kidney transplantation, he remained oliguric with a persistently raised serum creatinine of about 442.1 $\mu\text{mol/L}$, requiring maintenance on haemodialysis. A contrast computed tomography scan confirmed transplant renal artery stenosis (TRAS) distal to its anastomotic site (**Figure 1A**). He was referred to our department for percutaneous intervention of TRAS 2 months after surgery. A selective contrast angiogram via the right femoral artery showed dissection at the anastomotic site of the transplanted renal artery, which was extending into the proximal part, with a 95% narrowing of the true lumen and a diminished distal flow (**Figure 1B**). The transplanted renal artery was crossed with a 0.014 inch coronary guidewire and the lesion was dilated with a 2.5 \times 15 mm balloon (**Figure 1C, Figure 1D, Moving image 1**). An intravascular ultrasound (IVUS) (iLab; Boston Scientific) showed dissection of the renal artery with a notably compressed true lumen (**Figure 1E**, white arrow, **Moving image 2**). A 5 \times 18 mm balloon-expandable stent (Herculink Elite; Abbott Vascular) was deployed and a good flow was achieved across the artery (**Figure 1F, Moving image 1**). A repeat IVUS showed a well-expanded and apposed stent (**Moving image 3**) with a mean luminal diameter, mean luminal area and mean vessel diameter of 5.15 mm, 18.79 mm^2 and 5.80 mm, respectively at the proximal segment (**Figure 1G**). Post-intervention, the patient had improved urine output and his

blood pressure was better controlled. The serum creatinine had dropped to 97.26 $\mu\text{mol/L}$ at 3-month follow-up. This exemplary case demonstrates post-renal transplant allograft dysfunctions due to iatrogenic transplant renal artery dissection, which was successfully managed with an endovascular intervention using IVUS.

Conflict of interest statement

The authors have no conflicts of interest to declare with regards to this article.

Supplementary data

Moving image 1. Selective contrast angiography showing TRAS and a compressed true lumen with impaired distal blood flow. There was improved flow following angioplasty with a 2.5 mm balloon. After balloon-expandable stent implantation, the flow was restored across the artery.

Moving image 2. Intravascular ultrasound of the transplanted renal artery following balloon angioplasty showing major dissection and a compressed true lumen.

Moving image 3. IVUS of the transplanted renal artery after stent implantation showing a well apposed and expanded stent.

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