

## Autotransplantation of a solitary kidney for recurrent Renal Artery Stenosis in a patient with Zinner's syndrome

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Renal artery stenosis (RAS) is defined by narrowing of the renal arteries which is primarily caused by atherosclerotic disease or fibromuscular dysplasia. Current ESC and AHA guidelines, recommend medical therapy to optimise blood pressure control as primary management. Where medical management does not lead to acceptable clinical status or fails to halt progression of stenosis; endovascular revascularisation is routinely considered as a treatment option. Such patients are at a risk of developing in-stent stenosis which rarely can become recurrent. Neither of these guidelines discuss the prospects of definitive revascularisation via renal autotransplantation as a treatment option; reflecting how infrequently this technique is utilised.

We present an interesting and complex case of severe recurrent RAS in a 47 year old male patient with a solitary right kidney due to ipsilateral agenesis; in relation to a congenital seminal vesicle cyst and unexplained early onset atherosclerotic vascular disease. He had severe resistant hypertension uncontrolled on multiple (7) antihypertensive medications. He first underwent angioplasty and stenting to the right renal artery aged 37 years in 2005. Despite being on dual anti-platelet therapy, he developed recurrent episodes of in-stent stenosis requiring repeated angioplasty and stent insertions up to 2015 (9 episodes). His serum creatinine remained within the normal range throughout. However the time interval between recurrent in-stent stenosis was shortening, leading to concerns of complete occlusion or major complications during interventional procedures. The patient was aware that sudden occlusion could lead to established renal disease requiring replacement therapy and was therefore counselled by our Kidney Choices team. This was in addition to risks from persistent uncontrolled resistant hypertension. We considered all options and referred to a renal transplant surgeon for elective renal autotransplantation. Autotransplantation in a solitary kidney can be more challenging with little room for error, with the risk of patient ending up on dialysis in the event of technical failure. The proposed procedure involved nephrectomy, excision of stenosis which is complicated by an in-situ stent and reconstruction with an internal iliac artery graft. An open nephrectomy approach was used in this case due to the presence of the endoluminal stent in the renal artery.

Thankfully he underwent successful renal autotransplantation in 2016. He required HDU post-operatively owing to Hospital Acquired pneumonia. He was discharged on bisoprolol alone to manage palpitations with no anti-hypertensives for blood pressure control. His renal function remains normal to date and no additional blood pressure control has been required. This case supports elective renal autotransplantation as a potentially viable and beneficial option in management of patients suffering from complex cases of renal artery stenosis.