

Clinical Image*Open Access, Volume 6***Normotensive acute kidney injury****Jesmith Perumbalath^{1*}; Arvind Ponnusamy²**¹Internal Medicine Trainee (IMT2), Royal Preston Hospital, Preston, UK.²Consultant Nephrologist, Royal Preston Hospital, Preston, UK.***Corresponding Author: Jesmith Perumbalath**Internal Medicine Trainee (IMT2), Royal Preston
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Keywords: Normotensive acute kidney injury; Renal Artery Stenosis; Renal Artery Stenting; Acute Kidney Injury.**Abbreviations:** AKI: Acute Kidney Injury; EGFR: Estimated Glomerular Filtration Rate**Description**

67 year-old female with chronic kidney disease, refractory hypertension and right sided renal artery stenosis was admitted for renal artery stenting. The angiogram (Figure 1) showed severe focal right proximal renal artery stenosis. Her blood pressure (BP) in the community was about 160/73 mm Hg, and systolic BP prior to the procedure was 200 mm Hg. Proximal right renal artery stenting was done; however, no enhancement was seen in the right renal cortex as shown in Figure 2. The stent position was satisfactory, and this persisted despite trial of fibrinolytics and vasodilators to mitigate any thrombus or spasm. However, her BP had dropped to 120/59 mm Hg after the stent placement. Subsequently, she developed anuria and AKI, with a drop in eGFR to 7 from 24. CT angiogram showed right sided renal infarction without any active extravasation of the blood. She was initially treated conservatively but had to undergo sessions of hemodialysis to improve her renal function [1].

This represents normotensive AKI, a pre-renal ischemic renal failure in the absence of frank hypotension. Although there was no dramatic decrease in blood pressure and within the normal range, renal ischemia developed due to impaired perfusion pressures. In normal autoregulation, eGFR is maintained until the mean arterial pressure (MAP) falls below 80mm Hg. However, in patients with impaired autoregulation, eGFR drops, even while the MAP is within normal range due to increased susceptibility to modest reduction in renal perfusion. This vulnerability to ischemia is caused by factors affecting afferent and efferent arteriolar resistance including old age, atherosclerosis, chronic hypertension, chronic kidney disease, malignant or accelerated hypertension, medications such as NSAIDs, ACEIs/ARBs.

This type of ischemic renal failure, with apparent normal BP is often overlooked. Recognition of factors increasing the vulnerability to renal hypoperfusion and low perfusion states ensures renal hemodynamics are reestablished promptly.

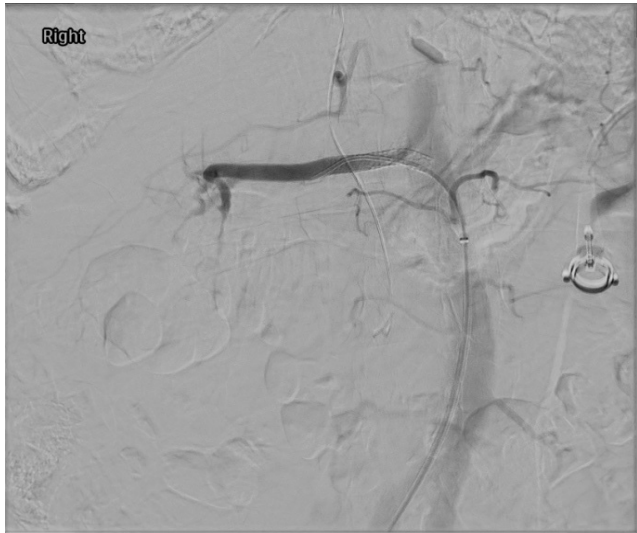


Figure 1

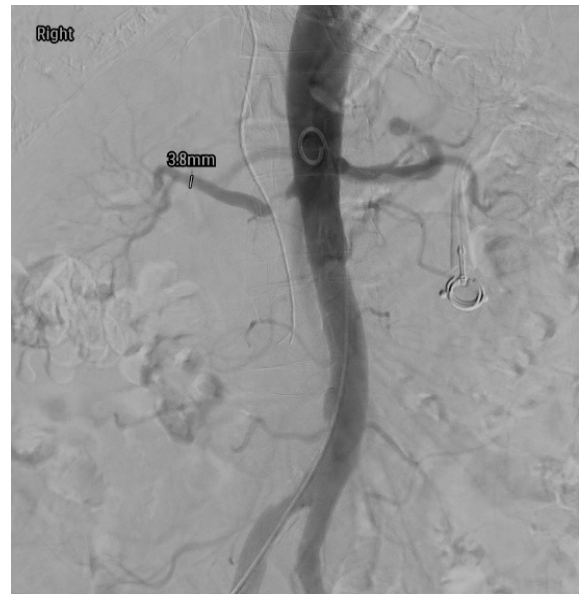


Figure 2

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