NDT Plus (2008) 1: 53–54
doi: 10.1093/ndtplus/sfm014
Advance Access publication 19 December 2007

NDT PLUS
Nephrology Dialysis Transplantation

Images in Nephrology
(Section Editor: G. H. Neild)

Sudden loss of consciousness and right flank pain associated with renal infarction

Yi-Lung Lin[1], Chun-Ming Shih[2] and Tzen-Wen Chen[1]

[1]Division of Nephrology and [2]Division of Cardiology, Department of Internal Medicine, Taipei Medical University and Hospital, Taipei, Taiwan

Keywords: renal artery stenosis; renal infarction; stroke

While at home, a 77-year-old woman with atrial fibrillation (Af), coronary artery disease, hypertension and a 10-year history of hyperlipidaemia experienced a loss of consciousness combined with sudden onset of right flank pain and fell on the ground. She was brought to our hospital where brain computerized tomography (CT) revealed an acute infarction over the left middle cerebral artery and posterior cerebral artery. Electrocardiography showed Af with a ventricular rate of 116 beats per minute. Her blood pressure was 130/70 mmHg, and her heart beat was irregular. She had normal pupil size and light reflex. There was a throbbing pain over her right costo-vertebral angle but no local abdominal tenderness was seen. No bruit was heard. Her white blood cell count was 20420/cumm, haemoglobin 12.5 g/dL and platelets 208 $\times$ 10^3/cumm. Her serum lactate dehydrogenase was 1000 IU/dL, creatinine 2.1 mg/dL, urea nitrogen 24 mg/dL and potassium 3.2 mmol/L. Urine analysis revealed protein 2+, red cell 2–5/ high power field (HPF) and white cell 1–3/ HPF. Markers for anticardiolipin antibody, lupus anticoagulant, anti-thrombin III, and protein C and S were unremarkable. Abdominal contrast with CT revealed a markedly less-enhanced right renal parenchyma (Figure 1). An enhancement of the left kidney was also noted. There were no stones and no perinephric inflammatory stranding. Renal arterial angiography (Figure 2A) revealed total occlusion of the right renal artery and complete disappearance of right renal blood flow (white arrow). A well-preserved left renal blood flow was noted (Figure 2A, black arrow). A diagnosis of acute infarction in the right kidney was made. The patient accepted intra-arterial thrombolytic therapy with urokinase, angioplasty and balloon thrombectomy of the right renal artery. Angiography showed good recovery of right renal blood flow. Although a few residual thrombi remained, they had no major impact on right renal blood flow (Figure 2B). Her renal function gradually recovered and returned to baseline levels at 1 week later. Her proteinuria disappeared as well. She was maintained on anticoagulation and anti-arrhythmic therapy.

Renal artery embolism is an infrequent but important cause of renal infarction. Renal infarctions from renal artery emboli usually arise from a cardiac source such as Af. The main complications are renal insufficiency and signs of systemic embolism, including stroke. Wedge-shaped hypo-dense renal parenchyma on contrast CT provides the most characteristic sign of renal infarction. In addition, renal angiography may display filling defects during renal artery occlusion. Urgent treatment is necessary because ischaemia can cause irreversible kidney damage within a few hours. Current therapeutic options including anticoagulation, intra-arterial thrombolysis, angioplasty and surgical revascularization have proven to be useful.

Conflict of interest statement. None declared.

Received for publication: 7.9.07
Accepted in revised form: 10.10.07

Correspondence and offprint requests to: Tzen-Wen Chen, 252 Wu-Hsing Street, Division of Nephrology, Department of Internal Medicine, Taipei Medical University and Hospital, Taipei 110, Taiwan. Tel: +886-2-27372181 ext.—3330; Fax: +886-2-27363051; E-mail: yilunglin@ntu.edu.tw

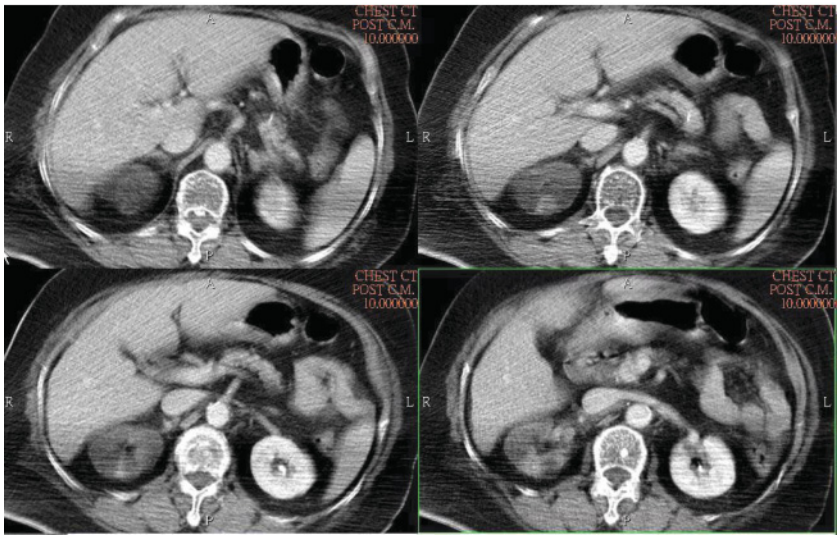

Fig. 1. There was a markedly less- enhanced right renal parenchyma. An enhancement of the left kidney was also noted. There were no stones and no perinephric inflammatory stranding.

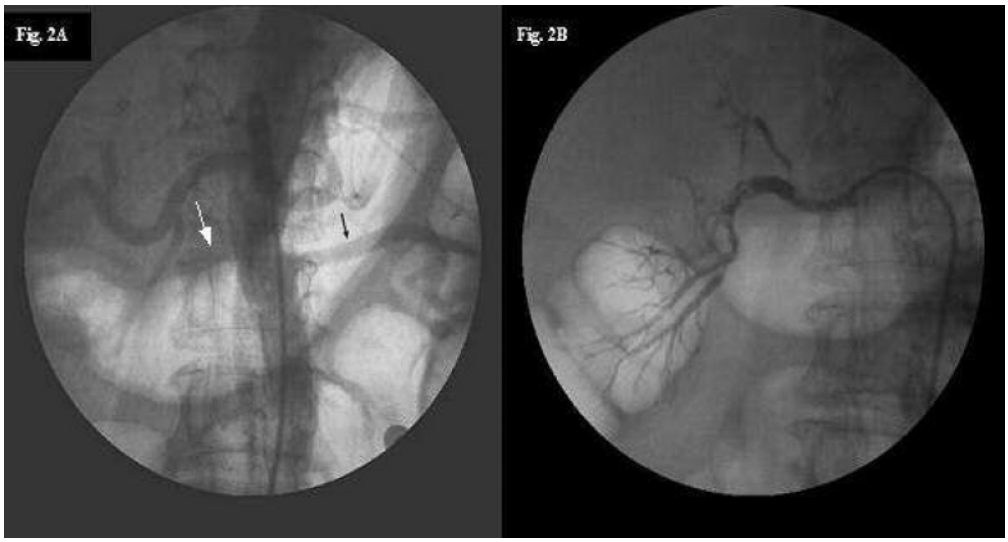

Fig. 2. (**A**) Arterial angiography revealed total occlusion of the right renal artery and complete disappearance of right renal blood flow (white arrow). A well-preserved left renal blood flow was noted (black arrow). (**B**) Good recovery of blood flow was shown after intra-renal artery infusion of urokinase, percutaneous transluminal angioplasty and balloon thrombectomy of the right renal artery. A few residual thrombi remained but caused no major impact on right renal blood flow.