

## Page kidney: successful radiological management of acute renal failure

Sir,

Page kidney is the external compression of a kidney. The condition is usually caused by a subcapsular haematoma, associated with high blood pressure and occasional renal failure, as described by Irwin Page in an animal model with cellophane papers wrapped round the kidney in 1939 and, subsequently, clinically in 1955 [1,2]. The present case illustrates, in a patient with a single functioning kidney, the successful management of a spontaneous subcapsular haematoma that was causing both acute renal failure and hypertension.

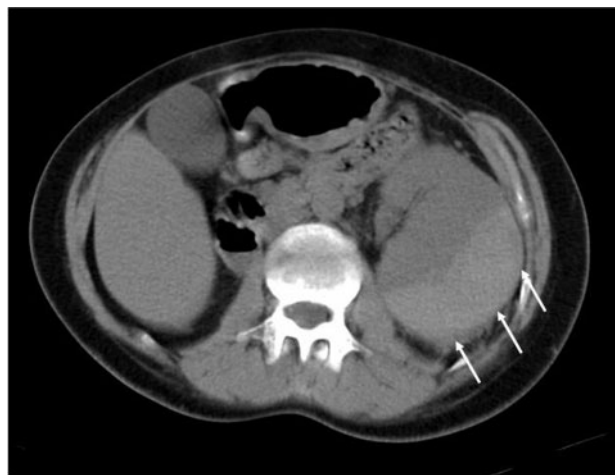
A 36-year-old female presented with a left-sided loin pain. At the age of 2 years she had undergone right nephrectomy for a Wilm's tumour and left-sided lower lobectomy for pulmonary metastatic disease, followed by chemotherapy and radiotherapy. Six months before presentation, following her first pregnancy, she was diagnosed with dilated cardiomyopathy, for which she was given candesartan, carvedilol and warfarin.

She was in pain, with tenderness over the left costo-vertebral angle. Her blood pressure was 94/57 mmHg. Investigation showed INR 2.7, C-reactive protein 20 mg/l and serum creatinine 136 µmol/l.

An ultrasound scan revealed a mixed reflective collection, adjacent to the postero-lateral aspect of her left kidney. Spectral Doppler analysis of the segmental arteries within the kidney showed a high-resistance pattern with complete loss of normal diastolic flow; but the renal vein was patent. A non-contrast computed tomography (CT) scan confirmed the finding of a subcapsular haematoma (Figure 1).

In the following 48 h she became hypertensive, oliguric and her serum creatinine rose to 508 µmol/l. Drainage was arranged.

After reversal of anticoagulation, an 8F pigtail catheter was inserted percutaneously into the haematoma under ultrasound guidance and 100 ml sero-sanguineous fluid was drained. Ultrasound after 24 h showed a reduction in size



**Fig. 1.** Non-contrast CT slice through the solitary left kidney, showing relatively fresh subcapsular haematoma (arrows) as a high-attenuation mass that is displacing the kidney anteriorly.

of the haematoma and an improvement in diastolic blood flow within the kidney. Over the subsequent week, the creatinine fell to 102 µmol/l, with further improvement in diastolic flow. The patient's blood pressure, however, remained high (180/100 mmHg), requiring more antihypertensive medications. A renal angiogram, performed subsequently, was normal.

Her acute renal failure was presumably due to a decreased perfusion of the single kidney as a result of pressure exerted by the subcapsular haematoma. Pre-existing warfarin therapy may have been a contributory factor [3]. Relief of the pressure and restoration of blood flow by percutaneous drainage led to the recovery of renal function.

Previously, the treatment of Page kidney has been exclusively surgical, but recently, laparoscopy- and radiology-assisted drainage has been used successfully [4,5]. However, radiology-assisted drainage of a subcapsular haematoma in a single functioning kidney has not been reported previously.

Management of hypertension with Page kidney has often involved nephrectomy [6], which we were able to avoid, in this patient with a single kidney, by using more antihypertensives and careful fluid management.

*Conflict of interest statement.* None declared.

<sup>1</sup>Department of Renal Medicine

Rebecca Suckling<sup>1</sup>

<sup>2</sup>Department of Radiology

Fhorkan Uddin<sup>1</sup>

St George's

James Pilcher<sup>2</sup>

University of London

Iain A. M. MacPhee<sup>1</sup>

London, UK

John B. Eastwood<sup>1</sup>

Email:

Debasish Banerjee<sup>1</sup>

Debasish.Banerjee@stgeorges.nhs.uk

1. Page I. The production of persistent arterial hypertension by cellophane perinephritis. *JAMA* 1939; 113: 2046–2048
2. Engel WJ, Page I. Hypertension due to renal compression resulting from subcapsular hematoma. *J Urol* 1955; 73: 735–739
3. Mabjeesh NJ, Matzkin H. Spontaneous subcapsular renal hematoma secondary to anticoagulant therapy. *J Urol* 2001; 165: 1201
4. Moriarty KP, Lipkowitz GS, Germain MJ. Capsulectomy: a cure for the Page kidney. *J Pediatr Surg* 1997; 32: 831–833
5. Kato K, Takashi M, Narita H, Kondo A. Renal hypertension secondary to perirenal pseudocyst: resolution by percutaneous drainage. *J Urol* 1985; 134: 942–943
6. Sterns RH, Rabinowitz R, Segal AJ, Spitzer RM. 'Page kidney'. Hypertension caused by chronic subcapsular hematoma. *Arch Intern Med* 1985; 145: 169–171

doi:10.1093/ndt/gfk044

Advance Access publication 22 December 2005

## Long-term lamivudine therapy is not reasonable for HBV-associated nephropathy

Sir,

With the article by Izzedine *et al.* [1] recently published in *Nephrology Dialysis Transplantation*, we feel the continued treatment with lamivudine for as long as possible after initial remission is not reasonable, because the proportion of patients with a documented lamivudine-resistant mutation increases from 23% in year 1 to 65% in year 5 [2,3]. Patients with lamivudine-resistant mutations experienced significantly