Echo-free renal masses on ultrasound: the stethoscope as an adjunct to their diagnosis

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Summary: A patient with an intrarenal arteriovenous malformation is described. Ultrasound suggested this to be a renal cyst but auscultation revealed a loud bruit and, on the basis of this, arteriography rather than cyst puncture was carried out.

Introduction

Renal cysts are common and increase in frequency with age (Laucks & McLachlan, 1951). In those patients who are found to have a renal mass on intravenous urography (IVU), ultrasound of the kidneys is the next investigation of choice (Pollack *et al.*, 1974). Whether an apparently benign cyst should be punctured to confirm the diagnosis is open to debate, but the procedure is commonly carried out and is relatively free of complications (Lang, 1977).

However, not all echo-free renal masses are simple cysts and the differential diagnosis includes hydro-nephrosis, abscess, haematoma and vascular abnormalities (Green *et al.*, 1976). We report a case where timely use of the stethoscope altered the radiological management of such a lesion.

Case report

A fit 53 year old female was referred with a history of painless haematuria. On examination she was found to be normotensive and the right kidney was palpable. An IVU (Figure 1) revealed a right parapelvic renal mass with distortion of the renal pelvis and lower calyces. Ultrasound showed an anechoic lesion in keeping with a cyst and the patient was admitted at a later date for cyst puncture. Auscultation of the abdomen on this occasion revealed a loud abdominal bruit maximal over the right kidney. In view of this, arteriography was performed rather than cyst punc-

Figure 1 IVU film showing distortion of right pelvicalyceal system.

Figure 2 Aortogram showing vascular mass in right kidney.

ture (Figure 2). Selective catheterization of the right renal artery showed fibromuscular hyperplasia of the extra renal portion and a large intra-renal arterioven-

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ous fistula. This was subsequently confirmed at histology following right nephrectomy. No other cause for the bleeding was identified and there was no further haematuria post-operatively.

Discussion

Intrarenal arteriovenous fistulae are uncommon and generally diagnosed by arteriography (Cho & Stanley, 1978). More recently Subramanyam *et al.* (1983) have diagnosed these lesions prospectively with real-time ultrasound by showing a tubular anechoic lumen, possibly with thrombosis, and an enlarged main renal artery and vein confirming increased renal bloodflow.

Although not all renal arteriovenous fistulae produce an abdominal bruit, McAlhany *et al.* (1971), in their review of the subject, give the incidence of this sign as 74%. We suggest that, particularly in parapelvic echo-free renal lesions, auscultation may prevent a surprise at cyst puncture (Hantman *et al.*, 1982).

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Figure 3 Subtraction film following selective right renal catheterization, showing the fistula and fibromuscular hyperplasia of the extrarenal artery.