Diagnostic Images

Renal and hepatic angiomyolipoma

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The patient

A woman age 26 years, complaining of right upper abdominal pain for one week with frequency of micturition and vomiting for two days. Erythrocyte sedimentation rate was 71 mm/h. Following treatment of an *Escherichia coli* urinary infection she became asymptomatic.

Following investigations (Figures 1–3) examination of the patient's face revealed multiple small, brown raised nodules of adenoma sebaceum. The patient was normal mentally and intellectually.

Comment

It is now common practice to undertake ultrasonography as the initial investigation of the renal tract but the finding of multiple hyperechoic tumours was quite unexpected. Such marked hyperechogenicity indicates a markedly fatty or fibrous consistency and excludes multiple cystic disease. Multiple well defined tumours in both kidneys is very suggestive of angiomyolipomas, a benign hamartomatous tumour most commonly associated with tuberose sclerosis.

The diagnosis can be proved either by the pathognomonic arteriographic appearances or by computed tomography. The latter examination shows the adipose nature of the tumours as low density areas. The adenoma sebaceum on the face may not be remarkable when small, particularly in dark skin, and furthermore may occur in mentally normal individuals. Associated angiomyolipomas in the liver are uncommon but recognized.

Diagnosis of this condition is important, particularly when the tumour is confined to one kidney, as surgery is unnecessary in this benign condition unless there is a complication such as haemorrhage.

(Arteriography by Dr K. Mourad, Consultant Radiologist, Newham General Hospital and ultrasonography by Dr P. Guggiana, Newham General Hospital).

References

LEE, T.G., HENDERSON, J.C., FREENY, P.C., RASKIN, M.M., BENSON, E.P. & PEARSE, H.D. (1978). Ultrasound findings of renal angiomyolipoma. *Journal of Clinical Ultrasound*, **6**, 150.

HANSEN, G.C., HOFFMAN, R.B., SAMPLE, W.F. & BECKER, R. (1978). Computed tomography diagnosis of renal angiomyolipoma. *Radiology*, **128**, 789.

Figure 1 Ultrasonography (a) Liver contains small rounded, hyperechoic nodules found in right and left lobes. (L = liver; D = diaphragm). (b) & (c): The kidneys contained similar multiple small hyperechoic nodules (arrows). (L = liver; K = kidney). (d) Normal examination of the liver and right kidney for comparison on another patient. (L = liver; K = kidney).

Figure 2 Intravenous urogram showing a large marginal filling defect on the medial aspect of the pelvis and proximal ureter (arrow) and slight clubbing of the minor calyces on the left.

Figure 3 (a) Late arteriographic phase with multiple hypervascular tumours affecting both kidneys. (b) Selective arteriogram of left kidney showing multiple tiny vascular 'sponge-like' spaces clearly visible in one of the tumours adjacent to the pelvis and ureter (arrow). (c) Late phase of coeliac axis arteriogram with similar tumours in the liver (arrows).