nephrotoxic effect of paracetamol or its metabolites has also been suggested. Histology is compatible with either hypothesis.

As in previous reports all patients in this series had evidence of liver damage, although in at least one (case 6) the changes were slight, and in nearly all patients the prothrombin time was near normal or at least improving when renal failure became fully established. There is clearly a poor correlation between the severity of liver damage and the development of renal failure.

Thus, although liver failure remains the major cause of death from paracetamol overdose, this study emphasises that acute renal failure may occur in the absence of fulminating liver failure and is a source of considerable morbidity in these patients.


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Bilateral renal carcinoma

Renal carcinoma may rarely present simultaneously in both kidneys. We report a case of bilateral renal carcinoma treated by bilateral nephrectomy. After resection one kidney was preserved by hypothermia; the upper-pole tumour was excised while the kidney was cold and the healthy lower pole then reimplemented.

Case report

A 47-year-old woman presented with intermittent swelling in the neck. Examination showed no abnormality, but a palpable mass was detected in the right side of the abdomen. Excretion urography and renal ultrasound examinations disclosed a space-occupying lesion in both kidneys. Arteriography showed a tumour in the lower two-thirds of the right kidney and a further tumour in the upper pole of the left kidney (figure). No evidence of tumour spread was detected by chest radiography, and serum biochemistry or by bone and liver radioisotope scans.

At operation large tumours were found in both kidneys with no evidence of metastasis. Diuresis was promoted with intravenous fluids and frusemide. Bilateral radical nephrectomy was undertaken, but the right adrenal gland was conserved and the left ureter divided at the pelvic brim. The left kidney was cooled by perivascular irrigation and immersion in ice-cold Sacks’s solution. Under hypothermic conditions the perinephric fat and the adrenal gland were removed from the kidney and the vessels carefully identified. The tumour, with a margin of normal renal tissue, was excised leaving about half the original normal kidney. The defect in the pelvicicalus system was closed. The open ends of arteries and venous sinuses were oversewn and the capsular defect closed. The lower pole of the left kidney was reimplemented into the right iliac fossa, with anastomosis of the renal artery with the internal iliac artery and of the renal vein with the external iliac vein. The ureter was reimplemented into the bladder. Intravenous mannitol 10 g was administered.

She recovered satisfactorily from the anaesthetic, but by the third post-operative day she had passed a total of only 507 ml of urine and serum creatinine concentration had risen to 579 μmol/l (6.5 mg/100 ml). A technetium-99m renal scan showed adequate renal perfusion but no excretion. Haemodialysis was started and repeated on the sixth postoperative day. The urine output recovered and by the 18th day serum creatinine concentration was 140 μmol/l (1.6 mg/100 ml). When at three months she returned to work her serum creatinine concentration was 128 μmol/l (1.4 mg/100 ml). At six months excretion urography showed no evidence of recurrent tumour or ureteric obstruction: a chest radiograph remained clear and the serum creatinine concentration unchanged.

Comment

Nephrectomy is the treatment of choice for renal carcinoma. In the few cases in which tumours arose simultaneously in both kidneys resection with preservation of enough renal tissue to sustain normal life is the only practical alternative to bilateral nephrectomy and long-term dialysis. A review of the treatment of bilateral tumours showed that all patients treated by means other than surgery died in less than six months. Those treated by nephrectomy with contralateral partial nephrectomy or by bilateral partial nephrectomy survived longer.

In most cases partial nephrectomy may be undertaken in vivo under hypothermic conditions quite satisfactorily. In this case, however, the large upper-pole tumour made access within the abdomen difficult. Since the tumour occupied half of the kidney the approach to the hilar vessels was further limited. The improved access gained in the isolated organ allowed the vascular supply to the healthy lower pole to be safeguarded. In addition the procedure enabled radical resection of the kidney and surrounding perinephric tissues to be undertaken, and only after this had been satisfactorily achieved was the healthy tissue isolated and reimplemented. In view of the increased hazard of the ex-vivo technique it should be reserved for more difficult tumour resections.

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Correction

Prognosis of isolated seizures in adult life

An error occurred in this paper by Dr P G Cleland and others (21 November, p 1364). In the third paragraph of the Subjects, methods, and results the second sentence should have read: “In five (12.5%) of the former and six of the latter group…”