LATE RECOVERY OF RENAL FUNCTION AFTER BILATERAL CORTICAL NECROSIS

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During the past ten years several cases of acute cortical necrosis with survival have been described. They have usually followed obstetric accidents but the following case was due to trauma.

E.H., age 13, schoolboy

This boy was admitted to the Royal Victoria Infirmary unconscious after being involved in a motor accident on 3rd December, 1964. No bony injury was found and 200 ml of dark blood-stained urine was drained by catheterisation. During the next 24 hours he complained of increasing abdominal pain and at laparotomy a large retroperitoneal haematoma was found. This was drained but the patient became anuric. On 6th December, 1964 his blood urea had risen to 322 mg%, Na 135 mEq/l, K 5.2 mEq/l, CO₂ 15 mEq/l. On 7th December, 1964 he was transferred to the Artificial Kidney Unit and had his first dialysis on a Kolff machine using a twin-coil.

Fig. 1. Renal biopsy. H. and E. × 300.

On 31st December, 1964 he had a retrograde pyelogram which showed normal calyceal outlines and ureters. On 23rd January, 1965 a percutaneous renal biopsy was performed (Figs. 1 and 2) and revealed the changes of acute cortical necrosis.

No calcification was ever found in his kidneys on abdominal X-ray.
During this time he was dialysed according to his rising blood urea and discharged on 6th February, 1965 on a 40 g protein diet, 350 ml free fluid and Aldomet 250 mg on alternate days. He then attended twice-weekly for intermittent dialysis. During this time his blood pressure was elevated to 190/120.

As time went by his pre-dialysis blood urea estimations were gradually falling and it was decided to delay dialysis (16-9-1965) to see whether there had been any recovery of renal function. Since that time his blood urea has remained stable at 80-90 mg% (Fig. 3). Whilst on intermittent dialysis his urinary output was approximately 350 ml/24 hours and without dialysis on free fluid allowance it has risen to 1500 ml/24 hours. He is now on 40 g protein diet and free fluid allowance but requires Resonium A 15 g daily to combat his hyperkalaemia. He is normotensive and able to carry out full activities at school. His creatinine clearance is 8 ml/min and urinary urea is 950 mg%.
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Comment

This case illustrates three points of interest. The first is that some recovery of renal function may take place even with acute cortical necrosis if the patient is kept alive with some form of intermittent dialysis. The second point is that our patient appears to be the only one who has survived when trauma has been the causative agent. The third point is that the hypertension associated with renal cortical necrosis is reversible, if renal function improves.