Cost effectiveness of routine necropsy renal histology

The recent work by Reid suggests that routine unselected necropsy histological examination is not cost effective for diagnostic purposes. I analysed the findings of the routine histological examination of kidneys in 50 consecutive necropsies performed in the department of pathology at this university. The results suggest a much lower level of cost effectiveness (as far as the kidneys are concerned) than was found by Reid. In Hong Kong cases referred to the coroner are: sudden death of unconfirmed cause; death as a result of accidents; homicides; death while in custody; suspected negligence. The coroner usually orders necropsies to be performed. Coroners' cases were chosen for this study as their clinical histories were usually brief and they were more likely to yield incidental but clinically important findings on necropsy. The request forms and clinical histories were reviewed; the complete necropsy reports and all the slides had already been prepared.

The total number of blocks sampled in the 50 cases studied was 890 (average 17.8 per case), of which 100 (average two per case) were of kidney tissue. Eight necropsies were on patients with a definite clinical history, for which histological examination of the kidneys was indicated. These included four patients who had a long history of diabetes mellitus; one in chronic renal failure who had been receiving haemodialysis for three years; one with suspected massive rhabdomyolysis, and finally, two heroin addicts, one of whom died of an overdose of heroin and alcohol and the other of fulminant pulmonary tuberculosis. Gross focal lesions were observed in four additional patients; these included a medullary fibroma 0.3 cm in diameter, acute pyelonephritis in a hydronephrotic kidney, pyonephrosis complicated by perinephric abscess and papillary necrosis, and the incidental finding of a 3 cm diameter renal cell carcinoma in a 60 year old man.

Asymmetrical coarse cortical scars were described in a further five patients; the scars were associated with distortion of renal calyces in one; the final diagnoses were nephrosclerosis in four patients, with no formal diagnosis given in the final report for the other patient. Congestion was the only remark made on gross examination of the kidneys in six other patients. Benign nephrosclerosis was diagnosed in nine patients; the gross finding in the kidneys of these patients was generalised cortical thinning. A small number of cortical cysts and cortical thinning were described in an additional three patients. In the remaining 18 patients the kidneys were considered to be normal on gross and microscopic examinations.

In the present study the number of patients showing grossly normal or near normal kidneys was 33, according to the criteria suggested by Reid. Patients with grossly abnormal kidneys or a clinical history indicating histological examination numbered 17. The corresponding figures reported by Reid were 77 and 83, respectively. The result of the two studies differed at a level of p < 0.05 (χ²). While I included the five patients with asymmetrical coarse renal scars among the cases indicated for renal histological examination; little useful information was obtained from this examination. If the five cases were to be deleted from the 17 cases indicated for renal histological examination, the difference in the results between the two studies would become more significant.

The results of the present study not only support the findings of Reid, they further suggest that an even greater increase in the cost effectiveness of necropsy histology may be achieved by selectivity than has been suggested. It is worth noting that the policy of non-selective necropsy histology has been considered to have contributed to the recent decline in the number of necropsies performed.

CS FENG

Department of Morbid Anatomy, Clinical Pathology Unit, Prince of Wales Hospital, Hong Kong

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K W Chan

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