Peritubular capillary lesions in post-streptococcal acute glomerulonephritis

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Case

A 72-year-old male patient, suffering from suppurative cellulitis of the skin and myositis during the previous 3 weeks, was hospitalized at our facility because of acute renal failure with coke-coloured haematuria and severe hypertension. His serum creatinine was 700.2 μmol/L and his anti-streptolysin-O titre was ×340 (normal range: ×20–150). Serum C3 was 59 mg/dL (normal range: 79–140) and serum C4 was 26 mg/dL (normal range: 13–35). Anti-neutrophil cytoplasmic antibodies (ANCA) of myeloperoxidase and proteinase-3 were negative. We suspected that he had post-streptococcal acute glomerulonephritis (PSAGN) and performed a renal biopsy.

Fifteen glomeruli including three sclerosed ones revealed global endocapillary hypercellularity with numerous neutrophils on light microscopy (left side in Figure 1). These glomerular lesions were compatible with PSAGN. Immunofluorescence studies revealed numerous granules of C3 in capillary loops and mesangium. Weak immunoreaction with IgG and IgA was also found. Interstitial oedema with foci of inflammation was found. In the renal microvasculature, arterioles showed mild hyaline deposits but not arteriolitis or venuitis. However, numerous inflammatory cells, including neutrophils, occupied the lumens of some peritubular capillaries, such as the glomerular capillaries (square in Figure 1). An electronmicrograph showed no basement membrane reduplication of PTCs in allograft or fibrinoid necrosis in ANCA associated renal vasculitis, but the lumen of PTC was totally occupied by inflammatory and endothelial cells (Figure 2).

The patient was treated with intermittent haemodialysis and corticosteroid (prednisolone 30 mg daily). His renal function recovered gradually, and he was able to discontinue renal replacement therapy.

Discussion

PTC lesions are often observed in antibody-mediated humoral rejection after renal transplantation [1], but there is no previous report of them appearing in a patient with PSAGN. We had not experienced PTC lesions in the 42 previous cases of PSAGN at our institution. The PTC lesion was a rare but notable complication of PSAGN.

Conflicts of interest statement. None declared.

Reference


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Fig. 1. Light microscopy (haematoxylin and eosin stained, magnification ×200) shows diffuse endocapillary hypercellularity in a glomerulus, and fulfilled cells including neutrophils in PTCs (square).

Fig. 2. Electronmicroscopic finding (magnification ×3000) shows numerous monocytes and endothelial cells in a PTC.