

## THICKENING OF THE PERITUBULAR CAPILLARY BASEMENT MEMBRANE IN CHRONIC RENAL ALLOGRAFT REJECTION

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**Objectives:** Chronic rejection of kidney allografts progressively damages the peritubular capillaries (PTCs), and transplant capillaropathy (TxC) develops. The ultrastructural features of TxC include circumferential multiplication and splitting of the basement membrane, seen as a thick, ribbon-like layer in semithin plastic sections. Our aim was to study whether the degree of basement membrane thickening of PTCs graded on a 0-2+ scale in PAS-stained slides can be used for chronic rejection diagnosis.

**Methods:** Grade 2 was scored when most PTCs had a basement membrane as thick as that of the distal tubules, and the chain-like change in the PTC basement membrane was identified in at least 4 high-power fields. The sampling area consisted of the tubulointerstitial space around 8 non-sclerosed glomeruli. 78 consecutive biopsies involving a chronic dysfunction, all searched for TxC, were evaluated. 49 biopsies displayed features of chronic rejection (TxC on 34 occasions).

**Results:** Grade 2 thickening was observed in 30 biopsies involving chronic rejection, and in 3 biopsies without chronic rejection, 2 of which exhibited acute T-cell-mediated rejection and chronic allograft nephropathy or glomerulonephritis, and 1 resolving acute pyelonephritis.

**Conclusions:** Since grade 2 thickening furnished an excellent interobserver concordance rate (kappa value: 0.808), and its sensitivity and specificity were acceptable, it is recommended as a marker of chronic rejection.