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Thin Basement Membrane Nephropathy as a Cause of Kidney Injury in a Young Hypertensive Patient

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Case Study : Background: Thin basement membrane nephropathy is one of the most common but under-recognized causes of persistent glomerular bleeding in both children and adults, and it occurs in at least 1% of the population.[1,2] It is a genetic and often familial disorder caused by mutations in the genes encoding various chains of type IV collagen, which is the main component of the glomerular basement membrane (GBM).[1] Affected individuals in general, have normal urinary protein excretion and normal blood pressure with the characteristic manifestation of persistent or intermittent asymptomatic microscopic hematuria. [3] Young patients with elevated blood pressures must then be worked up for secondary causes of hypertension including glomerular diseases. Case Description: We present a 22-year old male, no known comorbids sought consult for evaluation of hematuria and renal insufficiency. Pertinent physical examination showed elevation of blood pressure at 150-160/90-100mmHg. Upon examination, urine analysis revealed negative for protein and occult blood was 4+. Patient was then subjected to urine RBC morphology which revealed 80% dysmorphic red blood cells. His serum creatinine was elevated at 1.21mg/dL with eGFR of 87ml/min. C3 was also elevated while fasting blood glucose and lipid profile showed normal results. KUB ultrasound was unremarkable. Patient was then subjected to kidney biopsy and demonstrated negative results for IgG and C1q, trace for IgA and 1+ for C3 and showed diffuse thinning of glomerular basement membrane on electron microscopy. Discussion: Normally, no glomerular deposits of immunoglobulins or complement are found on Thin Basement Membrane Nephropathy. Steffes et al. have defined normal ranges for adults as 373 +/- 42(males). Our patient has mean GBM of 210nm. Reports evaluating patients with isolated hematuria suggest that 20%to25% of such patients have TBMN. It is then prudent to subject patients on renal biopsy to come up with a specific diagnosis and provide optimized management.

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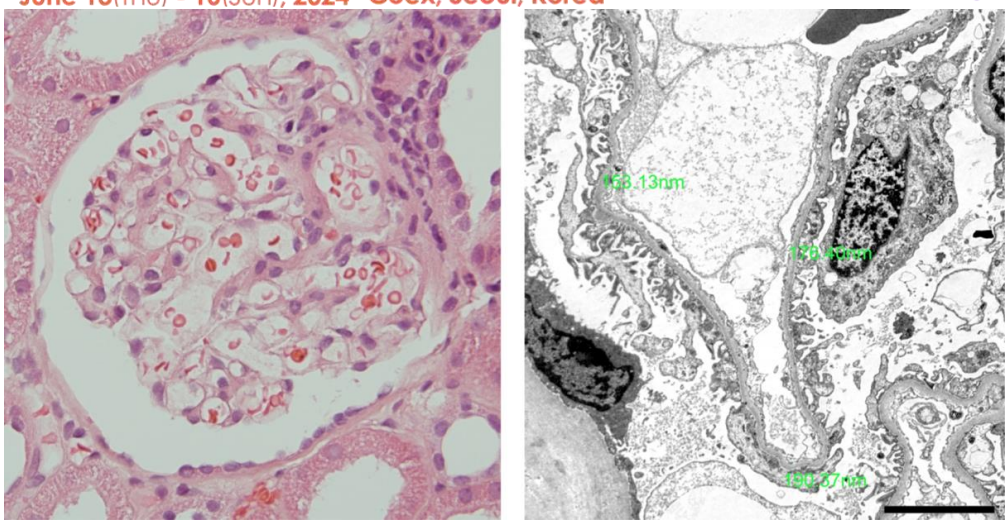

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