

## Horseshoe Kidney and Minimal Change Disease

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Almost one third of all patients with a horseshoe kidney remain asymptomatic. Urinary tract infection, hydronephrosis and calculus formation are all known as common related complications of a horseshoe kidney. Rarely has glomerulonephritis been reported in this anomaly. The following case study will review, to our knowledge, the first case of a horseshoe kidney which was incidentally found in a minimal change disease (MCD).

**Case:** A 18-year-old man was referred to our nephrology section with generalized edema, abdominal distension and weight gain on the assumed diagnosis of nephrotic syndrome. On examination, pretibial pitting edema (4 positive) was noted. Blood chemistry revealed a total serum protein of 3.3 g/dl, albumin 1.2 g/dl, AST 31 U/L, ALT 25 U/L, triglyceride 196 mg/dl, cholesterol 506 mg/dl, BUN 23 mg/dl, and creatinine 1.0 mg/dl with normal serum electrolyte. The serum Ig A was 229 mg/dl, Ig G 124.7 mg/dl and Ig M 257 mg/dl. The serum C3 and C4 were 130.3, and 20.7 mg/dl, respectively. In a 24-hour specimen of urine, 12,948.7 mg of protein and 1038.5 mg of creatinine were found. Hepatitis B surface antibody was positive. The tests for antistreptolysin O, ANA, VDRL, hepatitis B surface antigen and rheumatoid factor were all negative. Radiologic studies including intravenous pyelogram, renal scan and abdominal CT scan, revealed a horseshoe kidney. There was no evidence of vesicoureteral reflux. A ultrasound guided renal biopsy was performed under the impression of horseshoe kidney with glomerulonephritis. The pathologic diagnosis was minimal change disease. We began treatment with high dose steroid therapy (prednisolone 60 mg/day). Ten days later, laboratory findings showed decreased proteinuria (2 positive) and increased serum protein (5.2 g/dl) and serum albumin (2.3 g/dl). His generalized edema and ascites was markedly diminished.