Clinical Image
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Horseshoe Kidney in an 80 Year Old with Chronic Kidney Disease

FIGURE 1. This transverse CT section of the abdomen shows complete fusion of the lower poles of the kidneys with a clear isthmus. The fused kidneys are sitting lower in the pelvis compared to the location of normal kidneys.

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A horseshoe kidney is the most common renal fusion anomaly, with an incidence of 1/400 worldwide and a male-to-female ratio of 2:1. One theory of the abnormal fusion of the kidneys is that a variation in

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growth of pelvic structures brings the metanephric blastemas close together before renal capsule maturation, resulting in fusion. Consequently, the normal embryonic ascent of the fused kidney is disrupted by the inferior mesenteric artery, leaving the adult horseshoe kidney in a lower position than normal. About 90% of the time, the lower poles are fused and the excretory renal units and ureters are maintained separately. In the pediatric setting, 90% of patients are asymptomatic and the most common presentation is a urinary tract infection (UTI). One-third of cases are associated with other congenital or chromosomal anomalies. About one-third of all patients with a horseshoe kidney are asymptomatic. Common complications of a horseshoe kidney abnormality include uretropelvic junction obstruction, recurrent renal calculi, recurrent infections secondary to urine stasis and vesicoureteric reflux, and an increased incidence of renal tumors.

We describe the clinical image of an 80-year-old man with a history of type II diabetes, hypertension, and chronic kidney disease (CKD) who was being evaluated for abdominal pain. A computerized tomography (CT) scan (Fig. 1) of the abdomen was requested and revealed the presence of a horseshoe kidney. A horseshoe kidney does not cause progressive kidney disease. This patient, however, had CKD (estimated GFR of about 20 ml/min), most likely associated with type II diabetes and hypertension, and that was unrelated to the horseshoe kidney, which was an incidental finding.

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