Infant with gross hematuria and nephrotic syndrome: questions

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Case summary

A 9-month old girl presented to the emergency room with brown urine and generalized edema. She had been born at full term with normal growth and development. Her parents were unrelated and had no other children. She had been in good health until she developed brown urine 4 days prior to

presentation and was noted to have edema 1 day prior to being seen in emergency department. Her physical exam was remarkable for moderate generalized edema, mild pallor, and irritability. Vital signs were within normal limits except for elevated blood pressure (115/63 mmHg). Her urine specimen was turbid and brown. Microscopic exam showed red blood cells (RBC) too numerous to count, 2–5 white blood cells (WBC), and 5–10 squamous epithelial cells per high power field. No RBC casts were seen. Urine protein/creatinine ratio was 17. Renal function panel revealed normal electrolytes, elevated serum creatinine at 0.49 mg/dl (estimated glomerular filtration rate Schwartz 63 ml/min/1.73 m²), and low serum albumin at 1.9 g/dl. Complete blood count showed mild anemia with hemoglobin 8.9 g/dl, platelet count 273,000/mm³, and WBC 13,900/mm³. Renal ultrasound showed bilaterally enlarged kidneys with increased cortical echogenicity. Chest X-ray was within normal limits. The infant was admitted to the hospital.

The answer to these questions can be found at <http://dx.doi.org/10.1007/s00467-011-1968-9>

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Questions

1. What is the differential diagnosis of gross hematuria and nephrotic syndrome in this infant?
2. What diagnostic tests would be performed?
3. What is the management of this problem?