



An easily overlooked cause of acute kidney injury: Questions

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Question

A 17-year-old girl was admitted because of progressive fatigue, weakness, and involuntary weight gain (6 kg in the last 4 months). She complained of long-lasting constipation. She had amenorrhea for the last 3 months and loin pain for 2 weeks. She had been diagnosed with congenital hypothyroidism since 1 month of age, but she had not adhered to her medications for the last couple of months. She was a non-smoker and did not consume alcohol. She did not complain of any change in urine color, smell, or output. Except for parental consanguinity, her family history was unremarkable.

On physical examination, she had pale and dry skin, her weight was 66 kg (75–90 percentile), height was 160 cm (25–50 percentile), and BMI was 25.8 kg/m². Blood pressure was 100/60 mmHg, heart rate 78/min. Pretibial 2+ non-pitting edema was detected. The thyroid gland was diffusely and symmetrically enlarged. She also had tenderness on bilateral costovertebral angle. She did not have hepatosplenomegaly or lymphadenopathy; neurological and cardiological examinations and other systemic examinations were all normal.

Laboratory investigations revealed normal urine analysis without proteinuria, hematuria, or pyuria. Urine culture was sterile, and acute phase reactants were not elevated. She had mild anemia on complete blood count with hemoglobin level 10.5 g/dL and mean corpuscular volume 90 fL. Blood urea nitrogen was 24 mg/dL, creatinine 1.15 mg/dL (estimated GFR 59 ml/dk/1.73 m²), uric acid 3.9 mg/dL, albumin 4.8 g/dL, sodium 139 mEq/L, potassium 4.9 mEq/L, and phosphorus 4.7 mg/dL. Arterial blood gas was normal. Liver enzymes were in normal limits. Total cholesterol was 143 mg/dL and triglycerides level was 75 mg/dL. Serum-free thyroxine (FT₄) was 0.26 ng/dL (0.83–1.43), free triiodothyronine (FT₃) was 1.39 ng/mL (3–4.7), and thyroid-stimulating hormone was 145.72 mU/L (0.51–4.94). Kidney and bladder ultrasound was normal. Thyroid ultrasound revealed slightly enlarged thyroid gland with fibrous bands on parenchymal tissue.

Questions

1. What is the best description of the clinical picture of this patient?
2. Which additional tests would you perform to identify the underlying pathophysiology?
3. How should this patient be managed?

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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