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Editorials

Original Articles

Acute Kidney Injury and ICU Nephrology

Chronic Kidney Disease

Clinical Nephrology

Reviews

On the Cover

What is the diagnosis?

A 66-year-old male with a history of low-grade lymphoplasmacytic lymphoma status post autologous stem cell transplant, hypertension, diabetes mellitus, and CKD stage 4 secondary to biopsy-proven AL amyloidosis and longstanding hydronephrosis secondary to retroperitoneal lymphadenopathy presented to the hospital with diarrhea and fatigue accompanied by decreased oral intake and cloudy urine output. He was found to have AKI with a serum creatinine of 5.0 mg/dl, sodium of 125 meq/L, and potassium of 6.3 meq/L.

Image Description:

Axial abdominal computerized tomography (left) shows extensive pararenal and retroperitoneal calcifications secondary to the patient's known AL amyloidosis and lymphoma. There is cortical thinning of the right kidney from chronic atrophy and bilateral hydronephrosis. The kidney ultrasound (right) shows hydronephrosis of the right kidney that is atrophic from the lymphadenopathy. Both images depict the compressive effects of the lymphadenopathy.

Coronal abdominal computerized tomography shows parenchymal thinning of the kidney due to chronic obstruction and hydronephrosis. The coronal computerized tomography image shows retroperitoneal and para-aortic obstructive lymphadenopathy.

Teaching Points:

The patient had hemodynamic instability and sepsis from a urinary tract infection that was complicated by extensive calcifications causing compressive and obstructive uropathy. Ultimately, the patient underwent bilateral percutaneous nephrostomy to relieve the urinary obstruction. This case demonstrates that patients with diseases such as amyloidosis and lymphoma are susceptible to obstructive uropathy from compressive lymphadenopathy. Patients present with a variety of symptoms, including palpable mass, palpable bladder, flank pain, or anuria. Additionally, they can present with laboratory abnormality consistent with an obstructive renal tubular acidosis, such as nonanion gap metabolic acidosis with hyperkalemia. Treatment of an obstructive AKI requires relief of the obstruction either through ureteral stenting or percutaneous nephrostomy.

(*Images and text provided by Samuel Aaron Lazoff, Bobak Sharifi, and Amanda Renaghan, University of Virginia, Nephrology, Charlottesville, Virginia*)