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INTRODUCTION

- Acute urinary retention is a common urologic emergency, particularly in older men, and is most often related to bladder outlet obstruction, though infectious, iatrogenic, and neurogenic causes also occur. Management centers on timely bladder decompression, typically with catheterization.¹
- Clinical evidence emphasizes that even minimal increases in serum creatinine are linked to a dramatic impact on patient mortality risk.²
- Trimethoprim can cause reversible increases in serum creatinine by inhibiting renal tubular secretion without affecting the glomerular filtration rate. However, patients with normal renal function at baseline have only modest increases in serum creatinine concentrations.³

OBJECTIVES

- Analyze a rare clinical case of severe post-renal acute kidney injury (AKI) in a patient recovering from a urinary tract infection.
- Highlight the importance of early evaluation for urinary obstruction, particularly bladder scanning, in elderly patients presenting with unexplained AKI.

CASE DESCRIPTION

PRESENTATION

A 75-year-old male with a history of hypertension and no prior kidney disease presented to the emergency department with weakness and decreased appetite. The patient denied nausea, vomiting, abdominal pain, or urinary symptoms. One week prior, he had been diagnosed with a urinary tract infection and was treated with Bactrim (160 mg/800 mg PO BID for 5 days). Routine laboratory testing two weeks earlier showed a creatinine of 1.07 mg/dL.

CLINICAL COURSE

In the emergency department, vital signs were normal, and the patient had no neurologic deficits.

Laboratory findings:

WBC: 12.8 ×10⁹/L (4.5–11.0)
 Hemoglobin: 12.9 g/dL (13–17.7)
 Glucose: 96 mg/dL (60–99)
 Sodium: 128 mmol/L (135–145)
 Potassium: 5.6 mEq/L (3.5–5)
 CO₂: 16 mEq/L (23–30)
 Anion gap: 16 (8–16)
 Creatinine: 8.97 mg/dL (0.6–1.2)

Urinalysis showed no evidence of active infection.

Imaging:

Bladder scan: >1200 mL retained urine
 Renal ultrasound: bilateral hydronephrosis

INTERVENTIONS

- The patient was admitted and a Foley catheter was placed, draining >1500 mL of urine. Renal function improved rapidly following bladder decompression. Creatinine decreased to 1.26 mg/dL by discharge several days later. Electrolyte abnormalities also resolved:
 - Sodium: 136 mmol/L
 - Potassium: 3.8 mEq/L

Figure 1: Patient's Creatinine Levels

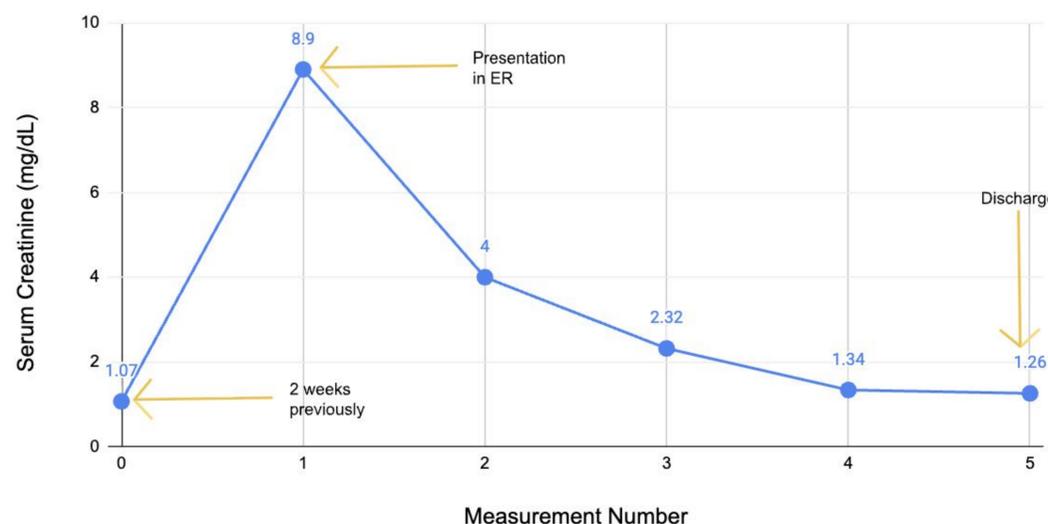


FIGURE 1.

Creatinine trend during hospitalization.

Baseline creatinine two weeks prior was 1.07 mg/dL. At presentation, creatinine was 8.9 mg/dL. Twelve hours after Foley catheter placement, creatinine decreased to 4 mg/dL, with continued decline over the following 24–48 hours. Creatinine at discharge was 1.26 mg/dL.

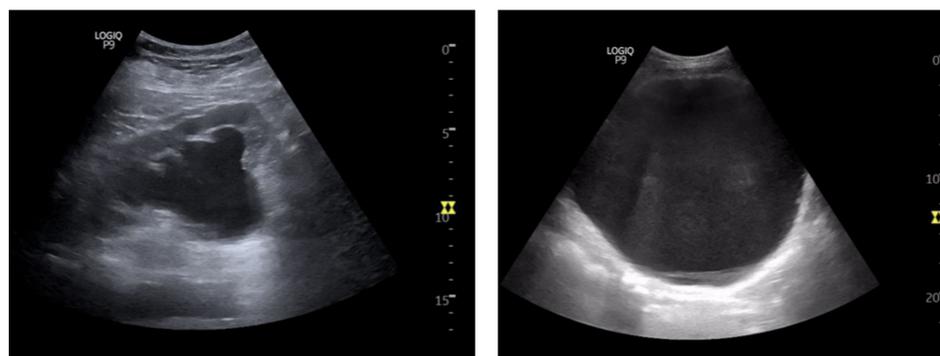


FIGURE 2.

Representative ultrasound images demonstrating hydronephrosis (left) and bladder distension (right), illustrating findings commonly seen in urinary obstruction and post-renal acute kidney injury.⁴

DISCUSSION

- Differential diagnosis: prostatitis, benign prostatic hyperplasia, kidney or ureteral stone, urinary tract infection, prostate malignancy, drug-induced bladder dysfunction
- Due to the markedly elevated creatinine, evaluation for urinary obstruction was performed with bladder scanning, which revealed significant urinary retention.
- The notable feature of this case was the rapid increase in creatinine from 1.0 to 9.0 mg/dL within two weeks in a patient with no prior kidney disease or urinary symptoms.
- The underlying cause of urinary retention was unclear in the emergency department but was suspected to be prostatitis or benign prostatic hyperplasia that would require urologic follow-up.
- Osteopathic manipulative treatment may be of tremendous benefit to hospitalized patients, regardless of their diagnoses.⁵ Potential OMM approaches that could have improved symptoms or accelerated recovery outcomes include: pelvic diaphragm redoming, treatment of pelvic and sacral somatic dysfunction, and addressing bladder/prostate viscerosomatic reflexes (T11-L2).

CONCLUSION

- Cases involving marked creatinine elevation in the absence of classic urinary symptoms are uncommon and may lead to diagnostic delay or unnecessary interventions. This case highlights the importance of early evaluation for urinary obstruction using bladder scanning in patients presenting with unexplained acute kidney injury.
- Prompt bladder decompression with Foley catheterization resulted in rapid improvement in renal function, and dialysis was not required.

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