

A Patient with New Onset Azotemia

You are called by the surgical intern to see a 68 yr old man in the surgical ICU because of new onset azotemia. He has a history of smoking, hypertension, osteoarthritis, and peripheral vascular disease, and was admitted 3 days earlier for unstable angina. His pain was refractory to maximal medical therapy, so he underwent cardiac cath and subsequently 3 vessel coronary bypass grafting 48 hours prior to your call from the intern. His post-operative course was complicated by a subendocardial infarction but was otherwise unremarkable until yesterday when his urine output began to diminish (total of 150 cc over 24 hrs), and his serum creatinine was noted to be 3.5 mg/dl (previous creatinine was 1.2 on admission). The patient is intubated and can give no history. Medications include lasix, lisinopril, intravenous nitroglycerin, ibuprofen, and perioperative cefazolin.

PE reveals an intubated alert man in no acute distress. T 97.3, P 96, R 12, BP 110/86. SKIN - no rash or lesions noted; normal turgor. LN - none palp. HEENT - conjunctivae are benign; Fundi reveal grade 2 hypertensive changes; oropharynx is intubated and poorly visualized. CHEST - clear on the ventilator; sternotomy incision looks normal; COR - RRR with distant heart sounds; no murmurs or rubs. ABD - soft nontender, without organomegaly; no flank tenderness; bowel sounds are diminished. G/R - Foley catheter in place; rectal normal; heme negative. NEURO - nonfocal. EXT - saphenous vein harvest site benign; no edema.

LABS Na 133, K 4.5, Cl 100, HCO₃ 20, Cr 3.5, glu 132
Hb 13.6, Hct 40.2, WBC 8.6, plts 400K
UA: clear/1.015/no protein, glucose or ketones/sediment reveals occasional hyaline casts, moderate pigmented granular casts and many renal epithelial cells. There are few RBC and rare WBC.
EKG: NSR 90/nl axis and intervals; inverted T waves are noted in the anterior leads.
CXR - normal heart size; no CHF or infiltrates noted.

1. What broad categories of diagnostic possibilities need to be considered in a patient with acute renal failure?
2. What unique aspects of this individual patient place him at risk for prerenal, post renal and intrinsic renal etiologies for his acute renal failure?

3. How does the urinalysis help in your differential diagnosis? What other diagnostic information would you request at this point?

4. Does this patient need a renal biopsy? Explain why or why not?

5. What complications can ensue in a patient with acute renal failure? What would be general indications for dialysis in this setting?