HEMATURIA

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ORDIBEHESHT 98

- A 66-year-old woman presented to the emergency department with low grade fever, dysuria and frequency.

- She had a history of HTN and IHD.

- Her medications included amlodipine, losartan and low-dose aspirin.

- V/S :

  BP: 135/90

  PR : 88/min

  RR : 16/min

  T : 37.8

P/E : No pathologic finding

Dx : UTI

Lab test : U/A U/C

Tx : Ciprofluxacin 500 mg BD

U/A :

SG : 1.014

PH : 6

Protein : Neg

Suger : Neg

Nitrite : Pos

WBC : 10-12

RBC : 8-10

Cast : Neg

Crystal : Neg

U/C :

E.coli

After 6 weeks of treatment :

U/A :

SG : 1.016

PH : 6

Pr : Neg

Nitrite : Neg

WBC : 1-2

RBC : 14-16

Cast : Neg

Crystal : Neg

- Kidneys, Ureters, Bladder sonography: Nl

- Cystoscopy & Biopsy :

  Malignancy

CASE 2

- A 75-year-old woman who received a deceased donor kidney transplant 3 months previously was admitted to the hospital for vomiting, diarrhea, and gross hematuria

- Serum creatinine level was 3.3 mg/dL, from a baseline serum creatinine level of 0.8 mg/dL 2 weeks earlier

- PH : Chronic kidney failure due to trimethoprim-sulfamethoxazole–induced interstitial nephritis

- DH : tacrolimus and mycophenolate

The patient was seropositive for Epstein-Barr virus and cytomegalovirus and had completed 3 months of valganciclovir prophylaxis

- The patient was admitted and given intravenous fluids without improvement in serum creatinine level.

- During the first week of hospitalization, the patient was febrile without other new symptoms or hypotension.

- Mild elevation of liver enzyme levels
- Results of blood and urine bacterial cultures,

  respiratory viral panel,

  tests for Clostridium difficile

  tests for cytomegalovirus

  were negative.

- Urine and plasma BK viral loads were 462,000 copies/mL and 3,700 copies/ mL, respectively.

- An ultrasound of the kidney showed diffuse thickening of the uroepithelium in the renal pelvis and proximal ureter.

- Computed tomography of the chest/abdomen/pelvis had unremarkable findings.

- Cystoscopy revealed normal bladder mucosa with fresh blood at the transplant ureteral orifice.

- What is your differential diagnosis of the patient's hematuria and acute decrement in kidney function and how would you investigate further?

- Gross hematuria can result from many disorders, such as:

  primary glomerulopathies

  urinary tract infection

  ruptured renal cysts

  nephrolithiasis

  genitourinary malignancies

  arteriovenous malformations

- In kidney transplant recipients, hematuria should also raise suspicion for opportunistic infections

- Occasionally, severe allograft rejection, often in the setting of weaning or discontinuation of immunosuppression, can induce hematuria.

- Our patient had BK viruria (4.6 ×105 copies/mL) with low-level viremia, but BK virus infection was not thought to be the cause of hematuria given the absence of the typical hemorrhagic cystitis on cystoscopy.

- Subsequent assays for adenovirus were positive in both urine (3 ×108 copies/mL) and plasma (>5.6 ×105 copies/mL), indicating active systemic adenovirus infection.

- Urine cytology (Fig 2) showed atypical cells that stained positive for adenovirus antigen on immunohistochemistry, suggesting adenovirus nephritis.

- DX : Adenovirus infection

- Tx : Immunosuppression reduction
  Cidofovir

Final Diagnosis

- Adenovirus nephritis presenting as fever, reduced glomerular filtration rate, and gross hematuria in a kidney transplant recipient.