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IMAGES IN EMERGENCY MEDICINE

Urology

A case of life-threatening hematuria

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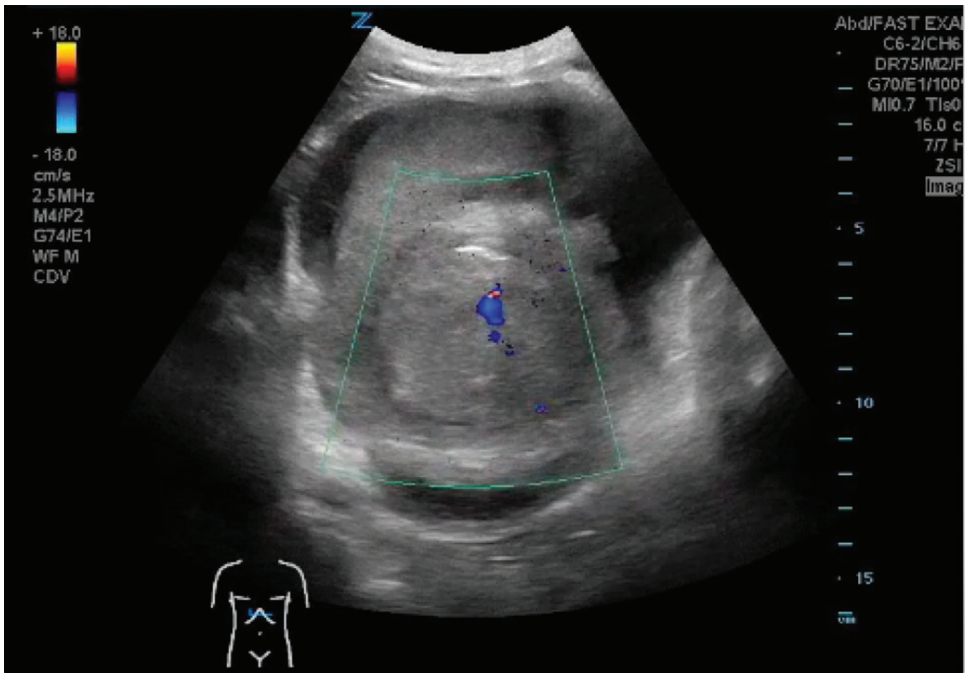
1 | PATIENT PRESENTATION

A 66-year-old male with a past medical history of hypertension and benign prostatic hypertrophy, not on anticoagulation, presented with difficulty voiding and hematuria. He was seen at an outside hospital earlier in the day and received a straight catheterization for urinary retention, he was prescribed antibiotics for a urinary infection, and he was discharged home. Subsequently, after discharge, he developed



VIDEO 1 POCUS clip of the lower abdomen, using a curvilinear probe in transverse orientation, showing evidence of a distended bladder with mixed echogenicities representing a clot. Color flow was visualized within the mixed echogenicities in the bladder, indicating active bleeding.

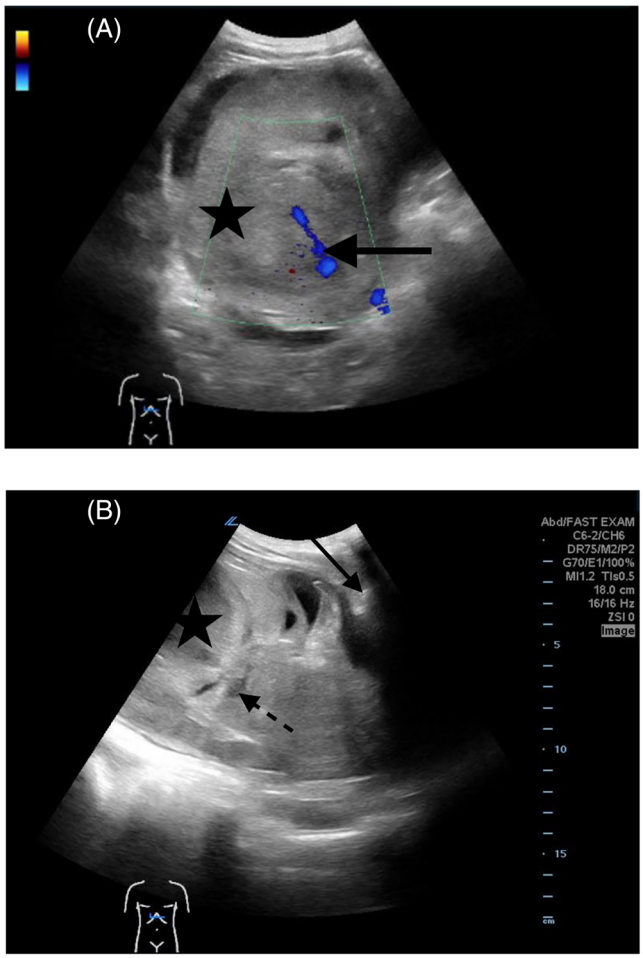


FIGURE 1 (A) POCUS showing turbulent Doppler flow within the bladder indicating active bleeding. (B) Clot at various stages within the distended bladder with mixed echogenicities.

hematuria with inability to void, prompting a visit to our emergency department (ED). On arrival, the patient was uncomfortable appearing, tachycardic with a heart rate of 116 beats per minute and a blood pressure of 114/67 mm Hg. His lower abdomen was tender to palpation. A point-of-care ultrasound (POCUS) of the bladder was performed.

2 | DIAGNOSIS

2.1 | Acute hematuria due to active hemorrhage from the left prostatic artery

The ultrasound demonstrated a distended-appearing bladder containing a large area of layering mixed echogenicity with intrinsic turbulent Doppler signal (Video 1). The patient had a three-way Foley catheter placed in the ED for continuous bladder irrigation. He had a computerized tomography (CT) angiography of the abdomen and pelvis that did not reveal any active hemorrhage. He also had a CT urogram. Initially, the hematuria improved, however, following the abnormal ultrasound Doppler images, the patient was admitted to the urology service. Although he was admitted, his hemoglobin declined from 12 to 7.9 g/dL, and he suffered a cardiac arrest. The reason for the arrest was presumed to be from hemorrhagic shock. There was return of spontaneous circulation after initiation of massive transfusion protocol. He underwent cystoscopy showing an enlarged median prostate lobe with active extravasation, requiring embolization of the prostatic artery by interventional radiology (IR).

Hematuria and urinary obstruction are common causes of ED visits with multiple underlying etiologies.[1] Emergency physicians are tasked with the challenge of determining which patients can be managed as outpatients. In this case, gross hematuria from an actively bleeding prostate led to the hemorrhagic shock requiring multiple transfusions and need for IR embolization. The most common etiologies of prostatic hematuria are benign prostatic hyperplasia, iatrogenic urologic trauma, prostate cancer, and radiation therapy.[2] In this patient, POCUS showed turbulent Doppler flow within the bladder (Figure 1A), which was concerning for active bleeding, and ultimately led to the patient's admission and emergent urologic consultation. Additionally, the POCUS also showed layering mixed echogenicities seen within the distended bladder, indicating a clot at various stages (Figure 1B). This case illustrates the importance of considering POCUS in patients with urinary retention and hematuria, especially in the setting of recent catheter placement.

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