



Images In Medicine

Acute Renal Failure from a Pelvic Arteriovenous Malformation

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INTRODUCTION

Pelvic arteriovenous malformations (AVM) are rare and may be congenital or acquired and commonly mimic more common disorders. We describe a young adult male with pulmonary complaints who was found to have acute renal failure, hydronephrosis, congestive heart failure and multiple midline pelvic varices secondary to pelvic AVMs. We report this case to alert physicians to the diverse spectrum and diagnostic difficulties of pelvic AVMs.

CASE DESCRIPTION

A 31 year old male presented with four days of cough and dyspnea. Physical exam: dry mucous membranes, systolic ejection murmur at the right base. Labs: acute renal failure with creatinine 3.17 and BUN 99 (units). CXR: left lower airspace disease. Renal ultrasound (Figure 1): mild bilateral hydronephrosis and numerous midline pelvic varices. Abdominal CT without contrast: bilateral hydronephrosis, no renal calculi, thickened bladder wall. CT-confirmed left lower lobe pneumonia. He was treated for community-acquired pneumonia.

Respiratory symptoms improved, renal function normalized after Foley catheter placement. Repeat CT without and with intravenous contrast (Figure 2): varices of the pelvic veins causing low grade obstruction of ureters. The right common iliac artery, internal and common iliac vein and IVC were dilated;

cardiomegaly was noted. Angiogram (Figure 3): large complex right pelvic AVM supplied from the right internal iliac artery branches with drainage into enlarged, tortuous bilateral iliac veins and IVC.

Cystogram: extrinsic compression with bladder narrowing. Bladder mucosa was hypervascular with mild ridging of the trigone mucosa. Since he had an elongated prostatic urethra and elevated post-void residuals, he was started on alpha blockade and instructed to double void. Ultrasound 6 months later: resolved hydronephrosis, improved post-void residual.

Cardiology consultation felt cardiomegaly was related to chronic shunting from pelvic AVM and he has been scheduled for endovascular embolization.

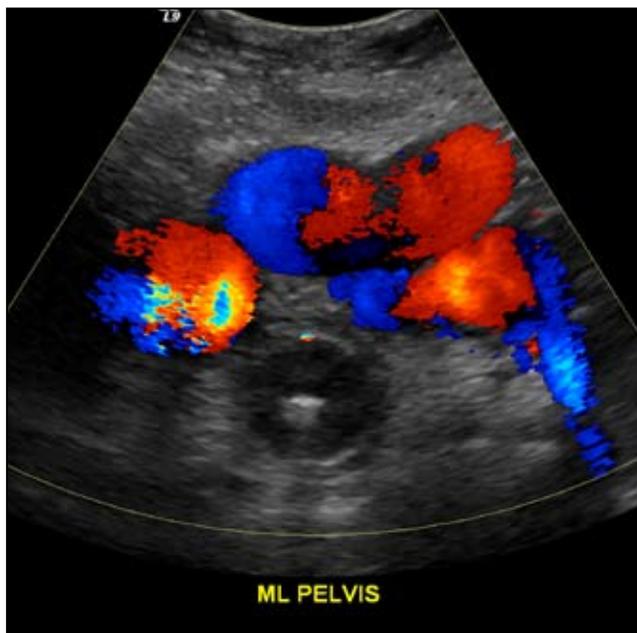


Figure 1. Midline transverse ultrasound over the bladder demonstrates dilated pelvic varices anterior to the bladder containing a Foley catheter.

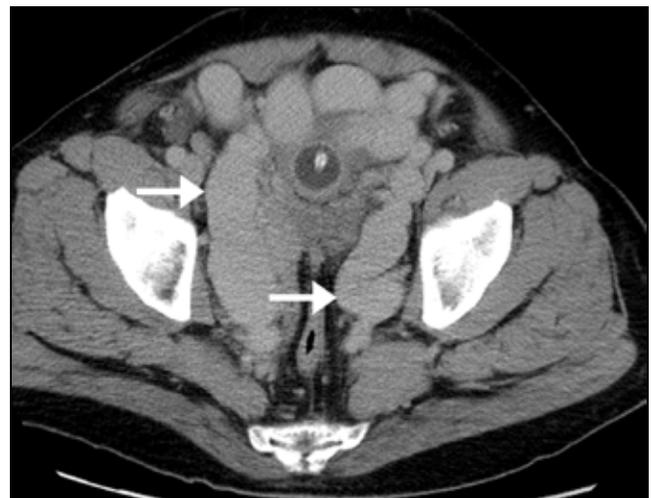


Figure 2. CT examination before (top) and after (bottom) intravenous contrast show multiple enhancing dilated pelvic varices (arrows).



Figure 3. Image from pelvic angiogram during right internal iliac artery catheter injection shows a large tangle of abnormal vessels and early filling of a draining vein (arrow).

DISCUSSION

Pelvic AVMs in men are rare; less than 20 case reports have been described in the world literature. AV malformations can either be congenital or acquired after surgery or trauma.

Many lesions are asymptomatic, discovered incidentally during evaluation for unassociated complaints, as in our patient with pneumonia. Typical manifestations are lower abdominal discomfort, vaginal or rectal bleeding, gross hematuria, urinary frequency or incontinence, impotence in men, lower back pain or rarely heart failure. Uncommonly a pelvic mass may be detected on pelvic or rectal exam; rarely a groin bruit or palpable groin thrill is appreciated. Non specific signs and symptoms mimicking more common disorders may lead to misdiagnosis or delay in diagnosis.

Ultrasonography may reveal anechoic tubular structures with results on color Doppler depending on amount of blood flow. Pelvic CT and MRI can demonstrate extent of disease to plan therapy. Angiography best delineate flow characteristics of lesions, feeding vessels, draining veins, and relationship to normal circulation and can often be therapeutic.

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Disclosure of Financial Interests

The authors and/or spouses/significant others have no financial interests to disclose.

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