AMSER Case of the Month
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50-year-old male with painless hematuria

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Patient Presentation

• **HPI:** Patient presented to his PCP after noticing blood in his urine (for an unknown duration). He was otherwise asymptomatic.

• **PMHx:** Asthma

• **PSHx:** Left meniscal repair, right clavicle surgery

• **SHx:** Reported never smoking, drinking alcohol “at times,” and no other substance use.

• **ROS:** Negative

• **Vitals:** WNL
What Imaging Should We Order?
Select the applicable ACR Appropriateness Criteria

Variant 4: Gross hematuria. Initial imaging.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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</thead>
<tbody>
<tr>
<td>CTU without and with IV contrast</td>
<td>Usually Appropriate</td>
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<tr>
<td>MRU without and with IV contrast</td>
<td>Usually Appropriate</td>
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<tr>
<td>CT abdomen and pelvis without and with IV contrast</td>
<td>May Be Appropriate</td>
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<tr>
<td>MRI abdomen and pelvis without and with IV contrast</td>
<td>May Be Appropriate</td>
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<tr>
<td>MRI abdomen and pelvis without IV contrast</td>
<td>May Be Appropriate</td>
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<tr>
<td>US kidneys and bladder retroperitoneal</td>
<td>May Be Appropriate</td>
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<tr>
<td>CT abdomen and pelvis with IV contrast</td>
<td>May Be Appropriate</td>
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<tr>
<td>CT abdomen and pelvis without IV contrast</td>
<td>May Be Appropriate</td>
<td>🌟🌟🌟</td>
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<tr>
<td>Radiography abdomen and pelvis (KUB)</td>
<td>Usually Not Appropriate</td>
<td>🌟🌟</td>
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<tr>
<td>Arteriography kidney</td>
<td>Usually Not Appropriate</td>
<td>🌟🌟🌟</td>
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<tr>
<td>Radiography intravenous urography</td>
<td>Usually Not Appropriate</td>
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This imaging modality was ordered by the PCP
Findings (unlabeled)
Findings (labeled)

Enlarged, heterogeneously enhancing seminal vesicles bilaterally.
Case Progression

• Cystoscopy and urine cytology were found to be normal, and the patient’s symptoms spontaneously resolved.

• After recurrence of hematuria and developing a new sensation of perianal fullness and pelvic pressure, the patient was treated with a course of antibiotics for presumed vesiculitis/prostatitis. His symptoms again resolved.

• Approximately 10 months after initially presenting, the patient’s symptoms recurred with increased intensity.
  – MRI without and with IV contrast was ordered to further evaluate.
Findings (unlabeled)
Findings (labeled)

Overall: Large heterogeneous mass, likely related to the seminal vesicles, composed of both cystic and solid components.

- **Hyperintense T1/T2**: likely proteinaceous fluid or blood, possibly fat, within cystic component
- **Hypointense T1/T2**: soft tissue (solid) component
- **Heterogeneous intermediate intensity T1/T2**: soft tissue (solid) component possibly with edema, necrosis
- **Hypointense T1, Hyperintense T2**: simple fluid intensity in cystic component
- **Septations and T1 signal delineating locules of complex fluid (hemorrhagic, proteinaceous, fat) in cystic component**
- **Fluid-fluid levels**
Final Dx:

Sarcoma of the Seminal Vesicles
Case Discussion

• Seminal Vesiculitis may be seen in up to 24% of patients with other GU infections.¹

• Given the initial imaging and the resolution of the patient’s symptoms after a course of antibiotics, infection as the underlying etiology was forefront on the differential.

• After recurrence of the patient’s symptoms, chronic vesiculitis or abscess was a strong possibility secondary to the highly convoluted structure of the seminal vesicles and their low vascularity (leading to low drug/antibiotic concentration).²
Case Discussion

• Although primary neoplasms of the SVs are rare, secondary involvement of the SVs, particularly from prostatic adenocarcinoma, is common.³

• Previous cases of sarcoma of the SVs have been noted to grow locally and compress adjacent pelvic organs, such as the prostate, bladder, and rectum.⁴ This is clearly demonstrated in this patient’s initial and secondary imaging, as well as in his history and chief complaints.

• This patient ultimately received resection of the SVs with adjuvant radiation to the operative bed. After recurrence/metastasis was noted, the patient began chemotherapy. He ultimately passed away ~1.5 years after initial presentation.
Case Discussion

On the left is a coronal T1 from an imaging study taken shortly before this patient’s death. Hypointense lesions are seen throughout the abdomen, representing extensive peritoneal metastasis with involvement of the hepatic capsule (arrows). Both extrinsic mass effect on the liver and displacement/invasion of bowel loops are present.
References:


5. American College of Radiology ACR Appropriateness Criteria Gross Hematuria https://acsearch.acr.org/docs/69490/Narrative/