RADY 401 Case Presentation:
Spontaneous Perinephric Hematoma

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History of Present Illness

• 49 yo F presented 2 mo ago to OSH with L-sided flank pain, found to have 11cm L-sided renal hematoma on CT A/P; followed by local urologist outpatient

• Presented to UNC from OSH due to worsening flank pain, decreased appetite, 40lb weight loss, subjective low-grade fevers

Past Medical History

• T2DM, HTN, recurrent UTI, atrophic right renal unit, and right duplex collecting system s/p open ureteroureterostomy (1984)

Vitals

HR 103 | BP 136/79 | Temp 36.9 °C | SpO2 97%

Pertinent Physical Exam

Cardiac: Mild tachycardia.
Abdomen: Soft, nontender, nondistended.
GU: Left CVA tenderness.

Pertinent Labs

WBC 11.7
H&H 9.9/31.4
Cr 0.66
Imaging Workup During Hospital Course

1. CT A/P with and without contrast (at OSH)
2. CT angiogram - abdomen
3. MRI abdomen
4. MAG-3 Lasix renal scan
Initial CT A/P

- Left perinephric hematoma
  15.3cm of unknown etiology
CTA Abdomen – 2 days later

- Interval enlargement of fluid collection to 15.7cm
- No foci of active extravasation
MRI Abdomen

• Following CT findings, IR consulted for evaluation and drainage; requested MRI for further characterization
• T1 hypointense, T2 hyperintense heterogeneous mass with enhancing internal septations
• Concern for possible cystic malignancy; features less typical of subcapsular/perinephric hematoma
Lasix Renal Scan

- **Reason for exam:**
  - history of atrophic R renal unit and consideration surgical intervention for L kidney

- **Split function**
  - 77.3% R kidney
  - 22.7% L kidney
Patient Outcome

- IR completed bx and aspiration → specimen did not survive processing, but fluid grew Klebsiella
- Given pain, weight loss, and uneven split function, decision made to undergo radical nephrectomy instead of conservative measures or washout
- Intraop, mass was consistent with perinephric abscess confirmed by U/S, needle aspiration, and Gram stain → abscess unroofed and JP drain placed
  - Surgical pathology negative for malignancy
- Postop course uncomplicated
  - Pain controlled, diet advanced, intraop culture consistent with preop culture (discharged on abx x10d), discharged with JP drain and 1 week follow-up
Spontaneous Renal Hemorrhage (Wunderlich Syndrome)

• Rare condition (~552 known published cases from 1933 to 2016)\(^1\)

• Classically presents as Lenk’s triad: 1) acute onset flank pain, 2) palpable abdominal mass, 3) hypovolemic shock

• Many cases in the literature report non-specific symptoms
  • Nausea, vomiting, headache, fever, weight loss, anemia and macroscopic hematuria

• Etiologies: renal neoplasm, vascular, infection, other\(^1,2\)
Preferred Imaging of Renal Hematoma

- **Ultrasound** found to have 56% sensitivity for identifying spontaneous hemorrhage compared to **CT** with 100% sensitivity\(^2\)
  - Etiology correctly identified with sensitivity and specificity of 11% and 33% for ultrasound and 57% and 82% for CT, respectively

- **CT angiography** recommended if initial CT scan fails to reveal the underlying cause, especially given likelihood of vascular etiology\(^3\)

- **MRI** may have advantage over CT for diagnosing small tumors\(^4\)
Classic CT Findings of Perinephric Hematoma

Video scan clip case courtesy of Dr Mohammad Taghi Niknejad, Radiopaedia.org, rID: 20509

Imaging Costs & Relevant Radiation Concerns

1. CT A/P with and without contrast at OSH
   • $3208 at UNC
   • ~20 mSv (7 years of background radiation)

2. CT angiogram abdomen
   • $3,322 at UNC
   • ~10 mSv (3 years of background radiation)

3. MRI abdomen
   • $3,520 at UNC

4. MAG-3 Lasix renal scan
   • $2,984 at UNC
Management of Perinephric Hematoma

Hemodynamically stable:
- Conservative management with fluids, transfusion, and observation

Hemodynamically unstable:
- Trans-arterial angioembolization
- Radical nephrectomy
- Partial nephrectomy
- Exploration/washout

Conservative management with fluids, transfusion, and observation
Top 3 Take Home Points

• CT is the most appropriate imaging tool for identifying spontaneous renal hemorrhage and associated etiology.

• Interventional radiology’s expertise is highly valued in management of patients with suspected renal bleeds.

• Imaging may not give the whole story.
References


6. American College of Radiology. Radiation Dose to Adults From Common Imaging Examinations.