AMSER Case of the Month: September 2019

Acute Right Flank Pain

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Patient Presentation

• EL is a 39 year old male presenting to the ED with acute onset 7/10, stabbing, right flank pain that started 4 days ago when he was at rest. He also reports mild N/V.

• PMH: Type 1 DM, IV drug use, CAD, nephrolithiasis

• PSH: Cardiac Catherization with stent placement 1 year ago

• SH: Current smoker with 10 pack-year history, does not drink alcohol, occasionally smokes marijuana. Currently using 13 bags of heroin per day

• PE: Normal with the exception of right CVA tenderness

• Vitals: BP: 131/82, Temp: 100°F
Pertinent Labs

- WBC: 22.5, Percent granulocytes: 86.9, Percent lymphocytes: 5.9
- HbA1c: 17.5
- UA: Specific gravity 1.020, 4+ glucose, 1+ leukocyte esterase, with 20 WBC per hpf (H), 5 RBC per hpf (H). Trace blood with no protein or ketones
What Imaging Should We Order?
Select the applicable ACR Appropriateness Criteria

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT abdomen and pelvis with IV contrast</td>
<td>Usually Appropriate</td>
<td>★★★★</td>
</tr>
<tr>
<td>CT abdomen and pelvis without and with IV contrast</td>
<td>Usually Appropriate</td>
<td>★★★★</td>
</tr>
<tr>
<td>MRI abdomen without and with IV contrast</td>
<td>May Be Appropriate</td>
<td>O</td>
</tr>
<tr>
<td>CT abdomen and pelvis without IV contrast</td>
<td>May Be Appropriate</td>
<td>★★★★</td>
</tr>
<tr>
<td>MRI abdomen and pelvis without and with IV contrast</td>
<td>May Be Appropriate (Disagreement)</td>
<td>O</td>
</tr>
<tr>
<td>MRI abdomen and pelvis without IV contrast</td>
<td>May Be Appropriate</td>
<td>O</td>
</tr>
<tr>
<td>MRI abdomen without IV contrast</td>
<td>May Be Appropriate</td>
<td>O</td>
</tr>
<tr>
<td>US color Doppler kidneys and bladder retroperitoneal</td>
<td>May Be Appropriate</td>
<td>★★</td>
</tr>
<tr>
<td>Tc-99m DMSA scan kidney</td>
<td>May Be Appropriate</td>
<td>★★★★</td>
</tr>
<tr>
<td>Fluoroscopy voiding cystourethrography</td>
<td>Usually Not Appropriate</td>
<td>★★</td>
</tr>
<tr>
<td>Radiography abdomen and pelvis (KUB)</td>
<td>Usually Not Appropriate</td>
<td>★★</td>
</tr>
<tr>
<td>Fluoroscopy antegrade pyelography</td>
<td>Usually Not Appropriate</td>
<td>★★★</td>
</tr>
<tr>
<td>Radiography intravenous urography</td>
<td>Usually Not Appropriate</td>
<td>★★★</td>
</tr>
</tbody>
</table>

This imaging modality was ordered by the ER physician.
Findings: (unlabeled)
Findings (labeled)

Anteriorly displaced renal parenchyma of right kidney

Heterogeneous, peripherally enhancing, right subcapsular fluid collection compatible with a renal abscess.

Left Kidney
Final Dx:
Renal Abscess
Case Discussion

- Renal Abscess
  - Localized collection of pus due to suppurative necrosis in the kidney
  - Etiology
    - most commonly from ascending infection of urinary tract as a complication of pyelonephritis. More likely to be uropathogenic species
    - can also be from hematogenous spread. More likely to be Staph Aureus
  - Risk Factors
    - diabetes mellitus, nephrolithiasis, ureteral obstruction
  - Complications
    - Abscess rupture
Case Discussion

• Renal Abscess Treatment

→ Broad spectrum abx
→ An abscess >5cm usually warrants percutaneous drainage using CT or US guidance
→ in severe cases nephrectomy may be necessary
**Case Discussion**

- A drain was placed by IR after diagnosis was made and 90cc of pus was drained.
- Cultures were positive for MRSA so he was started on vancomycin.
- Patient then left AMA with drain still in place.
- The drain was removed when the patient returned over a month later.

Follow up imaging prior to drain removal showing significant reduction in size of abscess.
References:


Glenn G. Fort. Ferri's Clinical Advisor 2019, 1184-1184.e1

Thomas Hooton, Comprehensive Clinical Nephrology, 51, 626-638.e1