AMSER Case of the Month
February 2018

73 year old female with abdominal pain

Jenna Van Dusen, MS3
Lake Erie College of Osteopathic Medicine

Dr. Matthew Hartman
Medical Student Coordinator; AHN Health System
HPI and Medical History

- **CC/HPI:** 73 yr old female presents with constant lower abdominal pain and aching (1 week), with decreased flatulence.
- **Past Medical Hx:** diabetes
- **Past Surgical Hx:** bilateral below the knee amputations
- **Vitals:** BP: 182/78, HR: 95, Temp: 99.2 F (oral), RR: 18, SpO2: 100%, Height: 5’2, BMI: 53.81 kg/m²
Physical Exam

- **Abdomen**: Moderately distended and diffusely tender; no rebounding or guarding
- Otherwise physical exam is non-contributory
What radiologic study should we order?
ACR Appropriateness criteria for Acute Abdominal Pain and Fever

This imaging modality was ordered by the ER physician

<table>
<thead>
<tr>
<th>Radiologic Procedure</th>
<th>Rating</th>
<th>Comments</th>
<th>RRL*</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT abdomen and pelvis with IV contrast</td>
<td>8</td>
<td></td>
<td>5++++</td>
</tr>
<tr>
<td>CT abdomen and pelvis without IV contrast</td>
<td>6</td>
<td></td>
<td>4++++</td>
</tr>
<tr>
<td>US abdomen</td>
<td>6</td>
<td></td>
<td>3+++</td>
</tr>
<tr>
<td>X-ray abdomen</td>
<td>6</td>
<td>To evaluate for bowel perforation.</td>
<td>2++</td>
</tr>
<tr>
<td>MRI abdomen and pelvis without IV contrast</td>
<td>5</td>
<td></td>
<td>1+++</td>
</tr>
<tr>
<td>MRI abdomen and pelvis without and with IV contrast</td>
<td>5</td>
<td></td>
<td>1+++</td>
</tr>
<tr>
<td>X-ray upper GI series with small bowel follow-through</td>
<td>4</td>
<td></td>
<td>4+++</td>
</tr>
<tr>
<td>X-ray contrast enema</td>
<td>4</td>
<td></td>
<td>4+++</td>
</tr>
<tr>
<td>CT abdomen and pelvis without and with IV contrast</td>
<td>3</td>
<td>May be helpful in select cases but should be used with caution because of increased radiation dose.</td>
<td>7+++</td>
</tr>
<tr>
<td>Ga-67 scan abdomen</td>
<td>3</td>
<td></td>
<td>7+++</td>
</tr>
<tr>
<td>Tc-99m WBC scan abdomen and pelvis</td>
<td>3</td>
<td></td>
<td>7+++</td>
</tr>
<tr>
<td>In-111 WBC scan abdomen and pelvis</td>
<td>3</td>
<td></td>
<td>7+++</td>
</tr>
</tbody>
</table>

Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate

https://acsearch.acr.org/docs/69467/Narrative/
Scout Tomogram from the CT Scan
Coffee Bean sign
(cleft points toward LUQ)

Pearl: CT scout view is an essential part of the study
Coronal CT demonstrates birds beak narrowing (arrow) of the sigmoid colon with swirling of the mesentery.
Additional Images:

Axial CT shows swirling of the mesentery (arrow)
Sagittal CT demonstrates birds beak narrowing (arrow) of the sigmoid colon with upstream colonic dilation.
Diagnosis:

Sigmoid Volvulus

Differential diagnosis:

- Cecal volvulus
- Colon cancer with obstruction
- Ogilvie syndrome
Sigmoid Volvulus

• Definition
  • sigmoid colon twists around the sigmoid mesentery
  • causes large bowel obstruction (torsion exceeds 180 degrees)
  • causes impairment of vascular perfusion (torsion > 360 degrees)

• Symptoms:
  • constipation
  • abdominal bloating/pain (continuous and severe)
  • nausea/vomiting

• Complications:
  • ischemia
  • perforation

• Causes:
  • old age/TMB--too many birthdays (mean age of 70 years old)
  • chronic constipation (may cause elongation of sigmoid)

• Treatment and prognosis
  • Rectal tube insertion successfully treats 90% cases
  • Mortality rate 20-25%, usually related to ischemia
Sigmoid Volvulus vs Cecal Volvulus

Can be a challenging diagnosis on plain film

CT and or gastrografin enema can be performed to better define the level of the volvulus

Companion case: Gastrografin enema showed filling of the rectum (R) and distal sigmoid colon to the level of the volvulus/bird beak narrowing (arrow)
References

• UP- TO-DATE:

• RADIOPEDIA:

• ACR:

• MD SAVE: