AMSER Case of the Month: November 2023

36-year-old woman with midline lower abdominal pain

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Patient Presentation

• HPI: 36-year-old woman presents to the ED with stabbing intermittent lower abdominal pain starting the day prior while eating dinner

• Pertinent Medical History: GERD, herpes, hiatal hernia, hypertension, lactose intolerance

• Medications: Atenolol 25mg, Irbesartan 150mg, Pantoprazole 40mg BID
Pertinent Labs

• Physical Exam
  • Abdomen: tender to touch midline below the umbilicus

• Labs
  • Auto WBC: 21.74
  • Absolute neutrophil count: 17.22
  • Glucose: 138
What Imaging Should We Order?
This imaging modality was ordered by the ER physician

<table>
<thead>
<tr>
<th>Variant 1:</th>
<th>Left lower quadrant pain. Initial imaging.</th>
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<tbody>
<tr>
<td>Procedure</td>
<td>Appropriateness Category</td>
</tr>
<tr>
<td>CT abdomen and pelvis with IV contrast</td>
<td>Usually Appropriate</td>
</tr>
<tr>
<td>US abdomen transabdominal</td>
<td>May Be Appropriate</td>
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<tr>
<td>US pelvis transvaginal</td>
<td>May Be Appropriate</td>
</tr>
<tr>
<td>Radiography abdomen and pelvis</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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<td>CT abdomen and pelvis without IV contrast</td>
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<td>Fluoroscopy contrast enema</td>
<td>Usually Not Appropriate</td>
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</table>
Findings CT Sagittal View Lung Window (unlabeled)
Findings CT Coronal View: (labeled)

Proximal to mid sigmoid colon with associated fat stranding and locules of free air

Hazy fat with adjacent diverticula = orange rectangle

Free air = blue arrow
Extraluminal air, as evidenced by the low attenuation material anterior to the liver (blue arrow) on the sagittal CT scan, is consistent with pneumoperitoneum from perforation of the sigmoid colon.
Final Dx:
Perforated Diverticulitis
Case Discussion

• Epidemiology / Risk Factors / Pathogenesis
  • Diverticulosis increases with age (50% > 60 years of age) with underlying poor nutritional habits. Perforation rate in an acute setting is 10%
  • Perforation influenced by:
    • High Fever (>38.5 degrees Celsius)
    • Left colon involvement in older patients
      • Right sided colon perforation was found in younger patients (40-60 years old)
    • Delayed diagnosis
Case Discussion

- Clinical features
  - Persistent pain in lower abdomen
  - High fever
  - Tachycardia
  - Arterial hypotension
  - Confusion
Case Discussion

• Diagnosis/Imaging
  • CT is imaging of choice
    • Perforation is classified by the dimensions of the abscess
    • Can detect paracolic fluid collection / intra-abdominal air which may indicate acute surgery
  • Hinchey Classification
    • Stage 1: Pericolic abscess or phlegmon
    • Stage 2: pelvic / intra-abdominal/retroperitoneal abscess
    • Stage 3: Generalized purulent peritonitis
    • Stage 4: Generalized fecal peritonitis
Case Discussion

• Management of perforated diverticulitis
  • Operative
    • Contained abscess = drain
    • Purulent peritonitis or feculent peritonitis = Hartmann procedure
  • Non-Operative
    • Contained perforation are treated with 7-10 days antibiotics and low residue diet
    • Most see resolution in 2-3 days, follow up with CT

• Prevention
  • Asymptomatic diverticulosis
    • High fiber and vegetarian diet
  • Uncomplicated diverticulitis
    • Giving fluids may be enough for patient with out other risk factor
References:

• acsearch.acr.org/docs/69356/Narrative/


