

RADY 401 Case Presentation

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Initial patient history and workup

- Jane Doe is a 38-year-old female with no significant PMH who initially presented to the emergency department with abdominal pain and mild leukocytosis, discharged without imaging or intervention.
- Re-presented five days later with right lower quadrant abdominal pain
- Vitals: T 97.9 F | BP 100/62 | HR 83
- Physical exam
 - Abdomen soft, RLQ tenderness just above McBurney point. Guarding and rebound tenderness present.
- Lab data
 - WBC **13.1**
 - Beta HCG negative

Imaging studies obtained

- CT Abdomen/Pelvis with IV Contrast

Imaging studies obtained



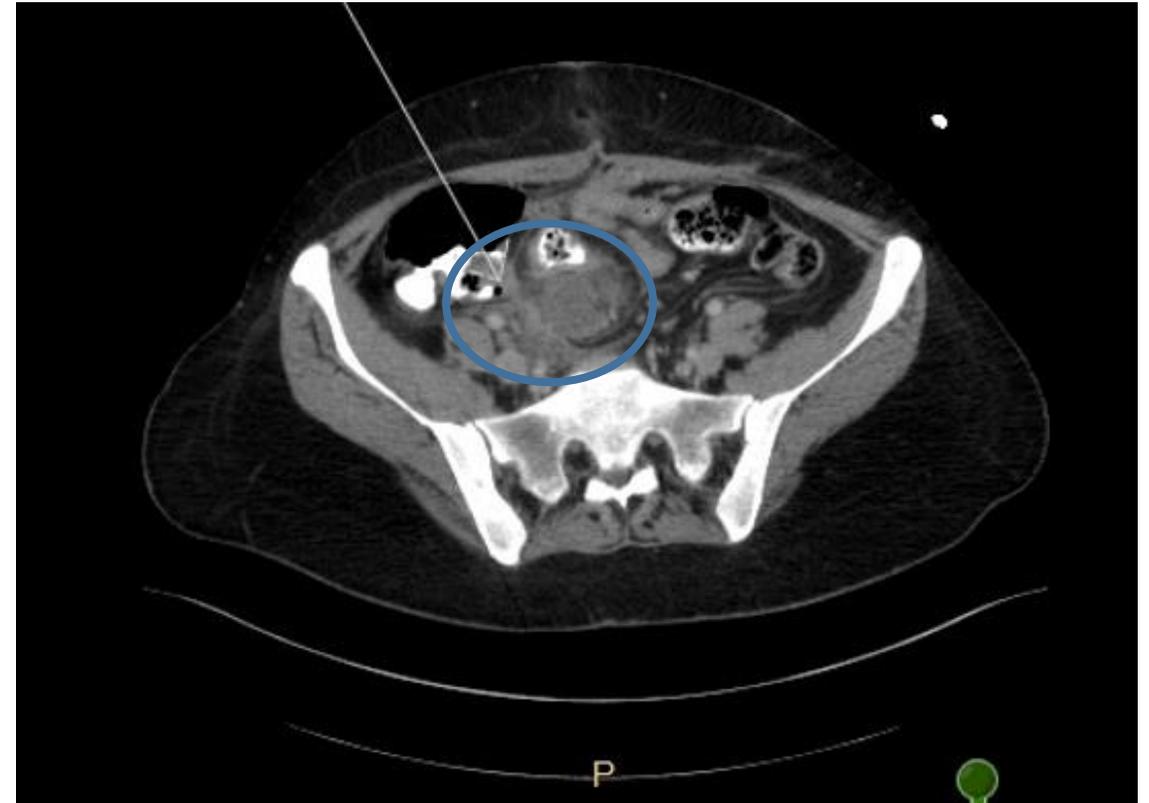
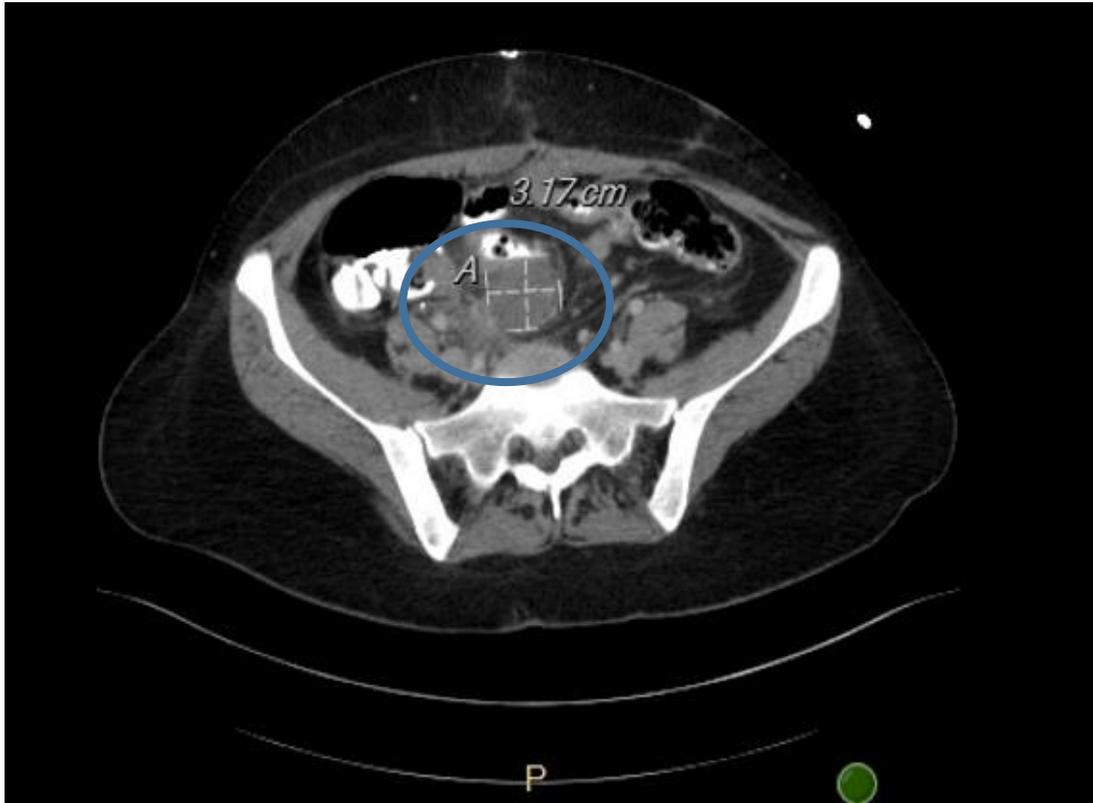
CT Abdomen/Pelvis with IV contrast, axial planes

GI Tract Findings: Edematous and dilated appendix with luminal discontinuity at the tip and adjacent free air.

Re-presentation to ED following appendectomy

- Initial outcome: Patient underwent laparoscopic converted to open appendectomy secondary to significant inflammation. Completed four days of Zosyn and was not reimaged prior to discharge 8 days later
- Four days after discharge, returned to emergency department with 2 days of lower abdominal pain and pressure and subjective fever
- Afebrile, BP 95/61
- **WBC 17.5**
- Physical exam: mildly tender to palpation in bilateral lower abdominal quadrants, incisions clean, dry and intact with no swelling or erythema

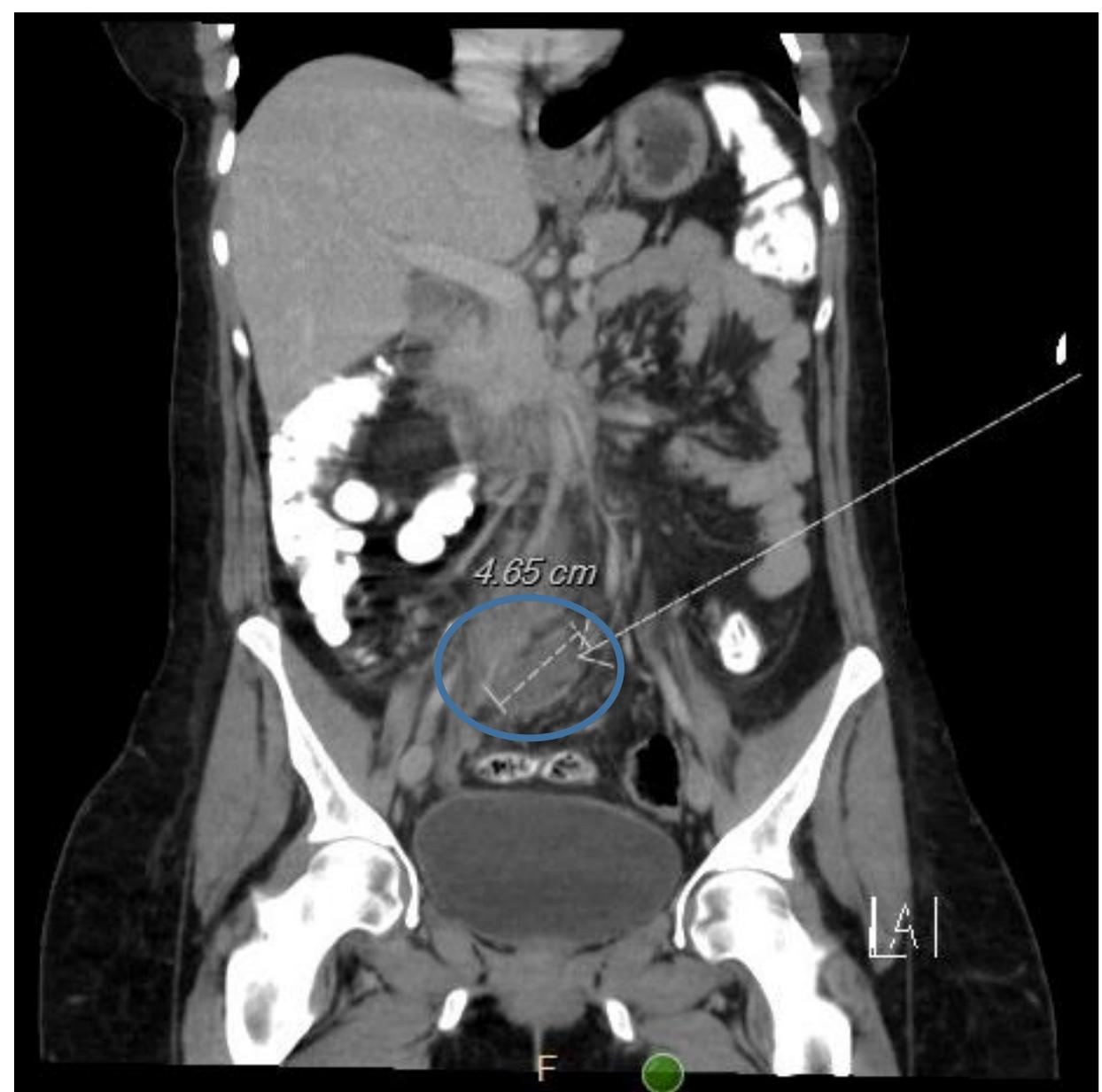
Imaging studies obtained



CT Abdomen/Pelvis with IV contrast, axial planes

Findings: Sequelae of recent appendectomy with phlegmonous changes along the mesentery of the mid-pelvis with mild peripheral enhancement, mesenteric stranding and free fluid along the site of the appendectomy with tiny locules of extraluminal gas.

Imaging studies obtained



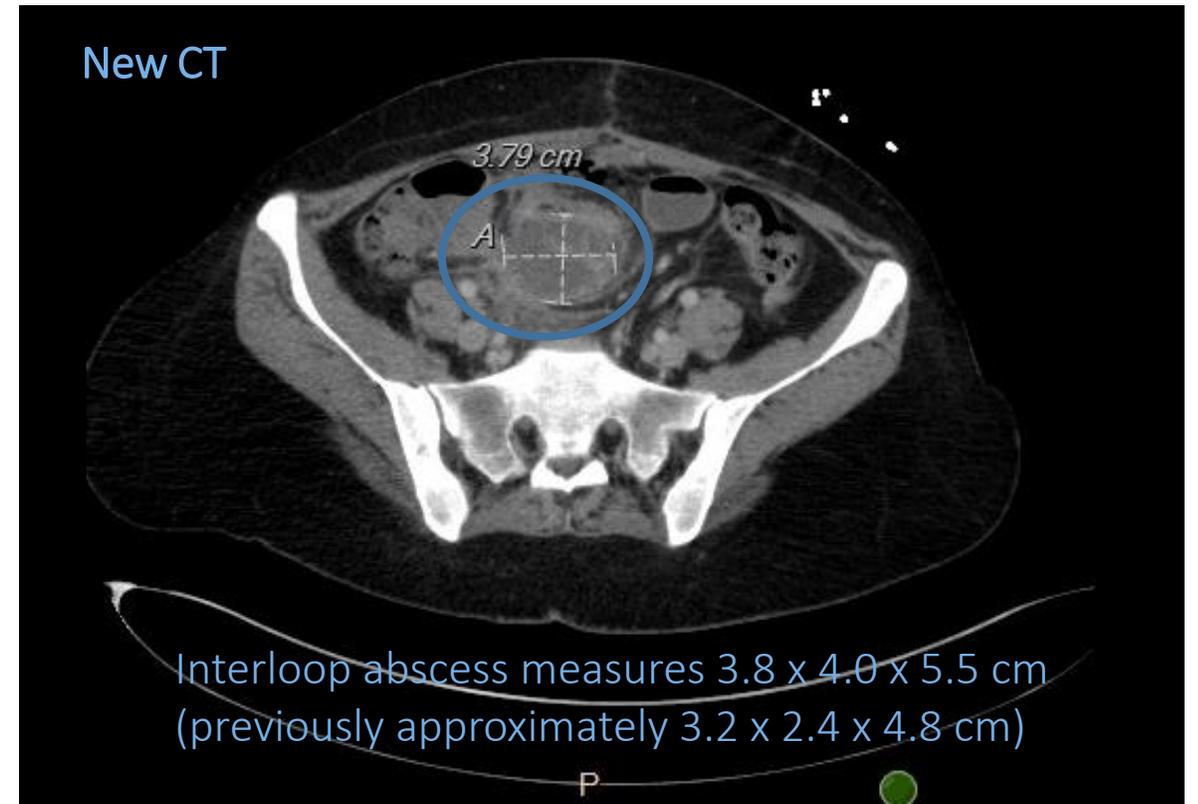
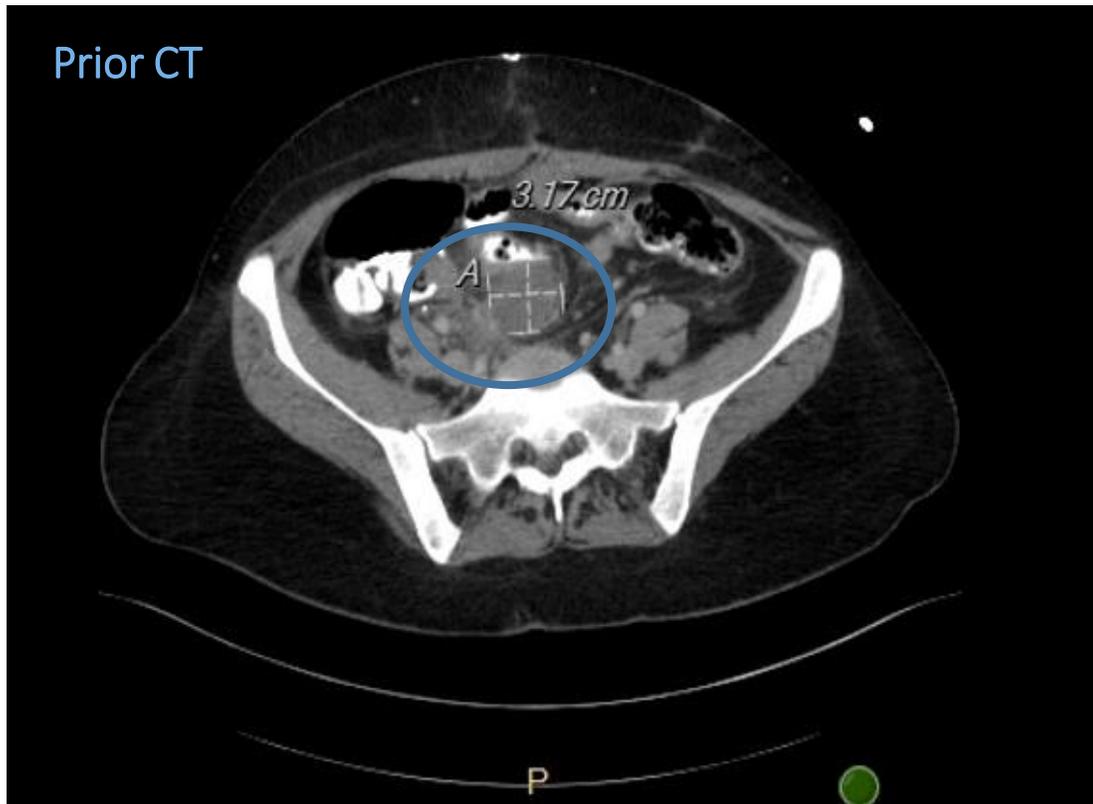
CT Abdomen/Pelvis with IV contrast, coronal plane

Findings: Sequelae of recent appendectomy with phlegmonous changes along the mesentery of the mid-pelvis with mild peripheral enhancement, mesenteric stranding and free fluid along the site of the appendectomy with tiny locules of extraluminal gas.

Small bowel inter-loop abscess – Patient course

- Readmitted to SRH and started on Zosyn
- VIR consult – no safe window for aspiration of ill-defined abdominal fluid collection, consider repeat imaging and consultation if patient acutely worsened
- Discharged on hospital day 4 with improved symptoms and leukocytosis with a one-week course of Augmentin
- Readmitted two weeks later with same symptoms and leukocytosis to 18.5

Imaging studies obtained



CT Abdomen/Pelvis with IV contrast, axial planes

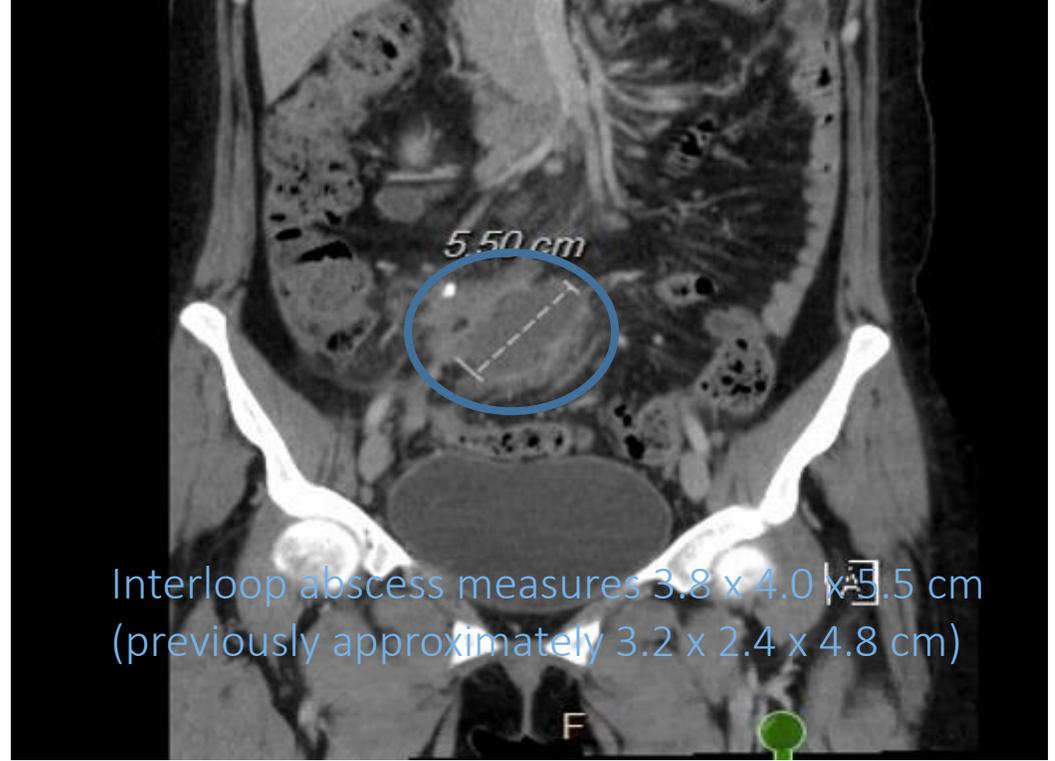
Impression: Interval increase in size of the known interloop abscess adjacent to the postappendectomy surgical line with associated mesenteric stranding and peritoneal thickening and enhancement; mildly increased free fluid within the pelvis.

Imaging studies obtained

Prior CT



New CT



Interloop abscess measures 3.8 x 4.0 x 5.5 cm
(previously approximately 3.2 x 2.4 x 4.8 cm)

CT Abdomen/Pelvis with IV contrast, coronal planes

Impression: Interval increase in size of the known interloop abscess adjacent to the postappendectomy surgical line with associated mesenteric stranding and peritoneal thickening and enhancement; mildly increased free fluid within the pelvis.

Follow up Outcome



- Discharged on 2 weeks of Flagyl and Augmentin.
- Plan for 2 week follow up imaging in clinic to determine definitive treatment.
- Two week CT: Interval decrease in size of known interloop abscess, now measuring a maximum dimension of 3 cm, with surrounding mesenteric stranding.

Abdominal abscess

- ACR: CT Abdomen/Pelvis with IV contrast **usually appropriate** for acute, nonlocalized abdominal pain
- Generally avoided in post-operative patients as fluid collections are often present but not infected and may lead to unnecessary treatment
- Ultrasound
 - Fast, avoids ionizing radiation, good for evaluation of more complex collections
 - Limited use for deeper soft tissue infections or for collections adjacent to bowel
 - Used to screen for superficial fluid collections or for collections adjacent to solid organs
- CT
 - Usually first-line modality in patients with fever of unknown origin
 - Used to detect deeper collections with IV and/or oral contrast to help distinguish from adjacent bowel or vasculature
 - *CT: 300 to 5000 dollars, ultrasound closer to 250*
 - *Radiation: CT 5-10 mSv, ultrasound none*
 - *No exact sensitivity and specificity reported due to such a varied presentation*

Abdominal abscess: typical CT findings³

- Will typically have a low-attenuation central necrotic component
- Well-defined capsule that may be thicker and more irregular than a typical cystic wall
- Capsular ring enhancement with contrast
- Surrounding peritoneal fat stranding
- Mass effect with adjacent structures



Treatment options

- Varies based on patient status and body habitus, institution, size and location of the collection, etc.
- Antibiotics and supportive treatment +/- needle aspiration of fluid collection for drainage or to narrow antibiotic regimen
- Percutaneous drainage
 - Usual treatment for large (>4-5 cm) collections, if possible
- Endoscopic drainage
- Immediate or delayed surgery

Take-home points

- Routine imaging of post-operative patients is not encouraged
- Ultrasound is fast and does not utilize ionizing radiation; however, it is not useful for deep infections or collections adjacent to loops of bowel and CT should be used for these cases
- Abscesses can be extremely difficult to resolve and options for treatment include IR-guided percutaneous drainage, surgery, and antibiotics

References

1. ACR Appropriateness Criteria – Acute Nonlocalized Abdominal Pain. Available at acsearch.acr.org/docs/69467/Narrative. American College of Radiology. Accessed 19 August 2019.
2. ACR Appropriateness Criteria - Radiologic Management of Infected Fluid Collections. Available at acsearch.acr.org/docs/69345/Narrative. American College of Radiology. Accessed 19 August 2019.
3. Bell, Daniel J. and Frank Galliard, et al. “Abscess.” Radiopaedia. Available at radiopaedia.org/articles/abscess?lang=us. Accessed 19 August 2019.