AMSER Case of the Month September 2020

HPI: 66 year old man presents with 5 day history of nausea, vomiting bowel movements, and diffuse abdominal pain.

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Patient Presentation

HPI: 66 year old male presents to ED with a 5 day history of nausea, vomiting, anorexia, and diffuse abdominal pain. He was seen in the ED 4 days prior and sent home with a diagnosis of gasteroenteritis. He had noted some blood in his emesis. Wife noted a gallstone was found incidentally on work up for stem cell transplant 1 year prior.

Medical :Acute Myeloid Leukemia

Surgical: 1.Hickmann placement 2. Bone marrow transplant in 2005

Medications: 1.Nexium 2.Oxycodone

Vitals: T:99.2 BP:130/85 P:85 RR:18 SpO2:97% in

Physical Exam

General: Moderate distress

Abdomen : Distended, tympanic, no bowel sounds present. Mildly tender to palpation diffusely. No masses or peritoneal signs.

Rectal: Normal rectal sphincter tone, stool was heme-negative.

Labs: WBC 4.8 Hgb:9.6 Plt; 48

What Imaging Should We Order?

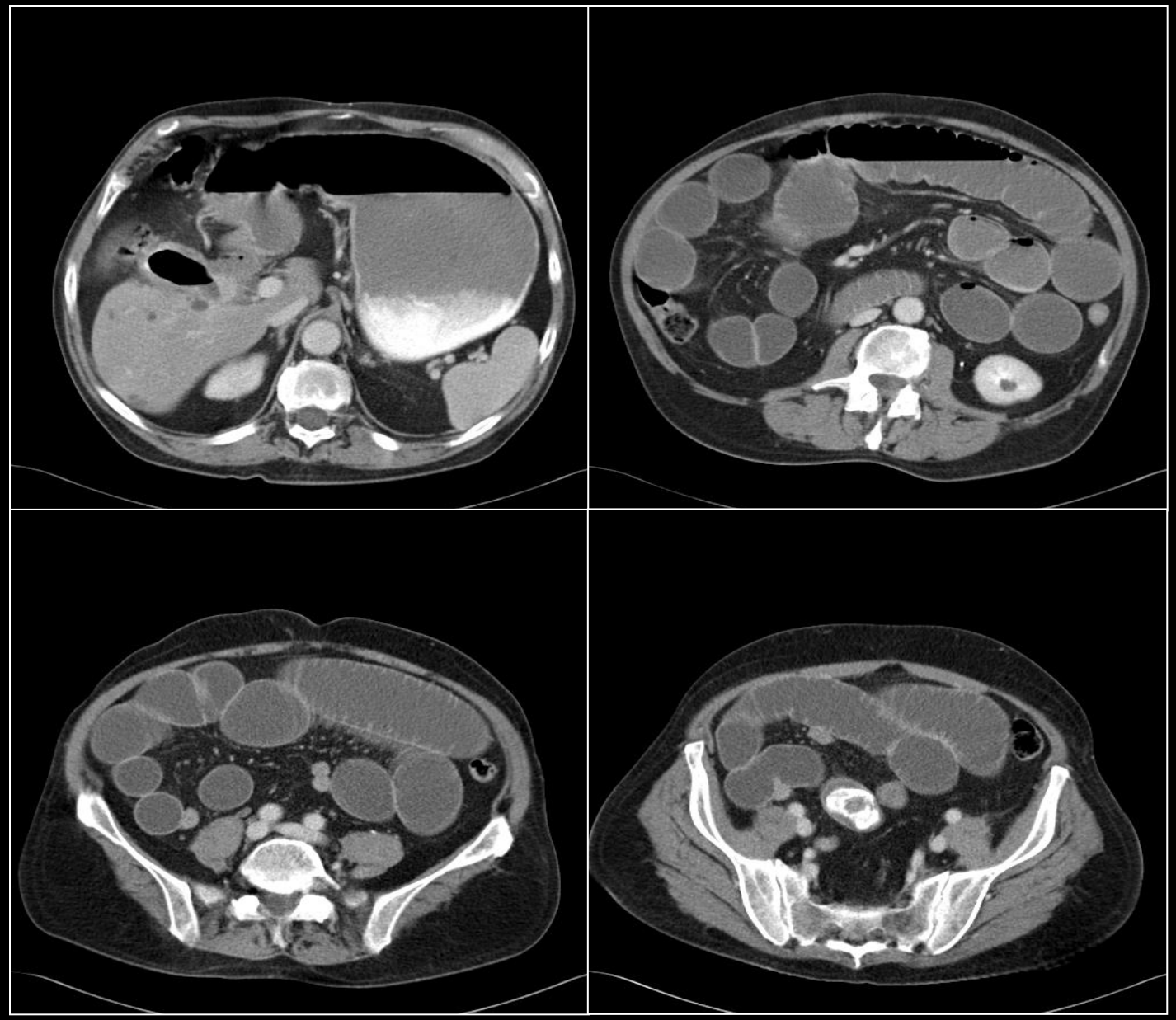
ACR appropriate criteria for Acute non localized abdominal pain without fever.

Variant 4: **Acute nonlocalized abdominal pain. Not otherwise specified. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
CT abdomen and pelvis with IV contrast	Usually Appropriate	☢☢☢
CT abdomen and pelvis without IV contrast	Usually Appropriate	☢☢☢
MRI abdomen and pelvis without and with IV contrast	Usually Appropriate	O
US abdomen	May Be Appropriate	O
MRI abdomen and pelvis without IV contrast	May Be Appropriate	O
CT abdomen and pelvis without and with IV contrast	May Be Appropriate	☢☢☢☢
Radiography abdomen	May Be Appropriate	☢☢
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☢☢☢☢
WBC scan abdomen and pelvis	Usually Not Appropriate	☢☢☢☢
Nuclear medicine scan gallbladder	Usually Not Appropriate	☢☢
Fluoroscopy upper GI series with small bowel follow-through	Usually Not Appropriate	☢☢☢
Fluoroscopy contrast enema	Usually Not Appropriate	☢☢☢

This imaging modality was ordered by the ER physician

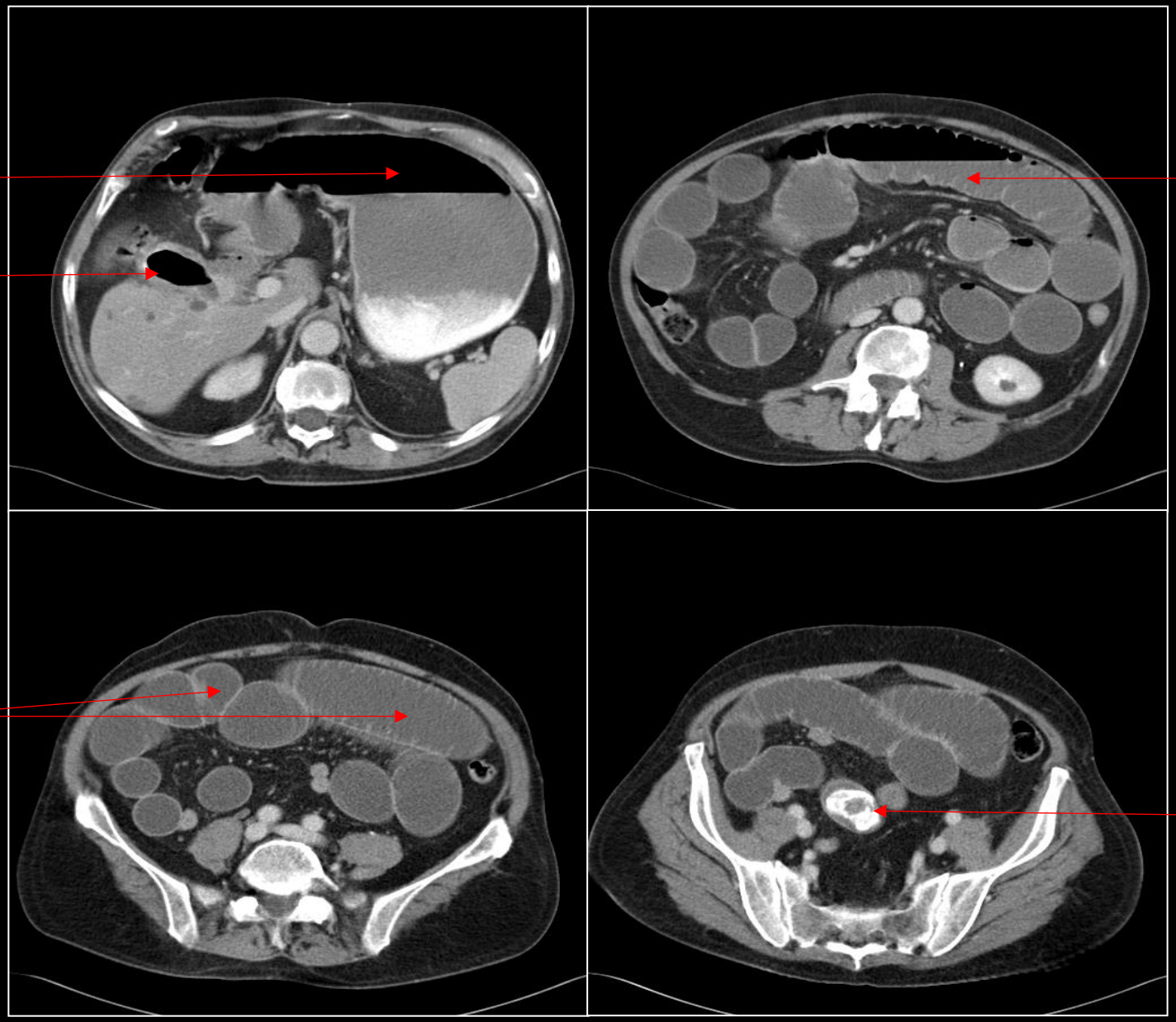
CT Abdomen and Pelvis Findings:unlabeled



CT Abdomen and Pelvis Findings: Labled

Axial Slice, Distended stomach with air fluid levels.

Thickened gallbladder wall, air within gallbladder and biliary tract



Axial slice, Dilated loops of bowel with air fluid levels.

Axial Slice, Small bowel dilation

Axial Slice, 33x23mm gallstone within lumen of small bowel at Ileocecal valve.

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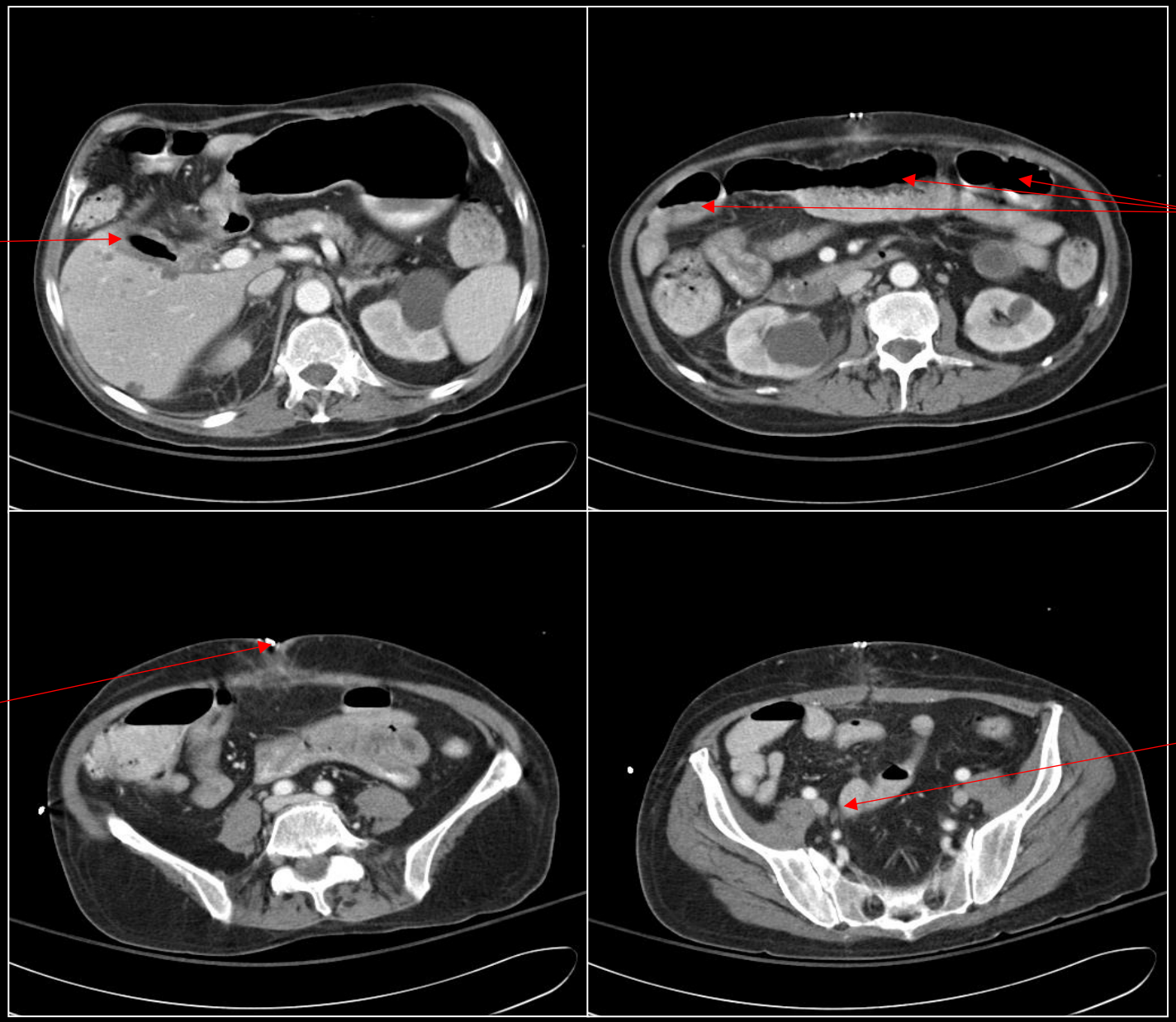
Post-Op CT

Continued gallbladder wall thickening and pnuemobilia with biliary enteric fistula



Resolved bowel distension

Surgical scar from enterlithotomy

No gallstone at the ileocecal valve after surgical removal.

Final Dx:

Gallstone ileus

Case Discussion

Gallstone ileus is rare but serious cause of mechanical bowel obstruction. It is caused by impaction of a gallstone in the small bowel, most commonly the ileum. The stone enters the small bowel through a biliary-enteric fistula. Diagnosis can be delayed due to experiecing intermittent symptoms for for a few days. Curavtive treatment is surgical removal of the obstructing stone after resuscitating the patient. Gallstone ileus is associated with relatively high rates of morbidity and mortality.

Clinical Presentation:

-Symptoms of episodic subacute obstruction as a result of the stone tumbling through the bowel lumen.
-Transient gallstone impaction produces diffuse abdominal pain and vomiting, which subside as the gallstone becomes disimpacted, only to recur again as the stone lodges in the more distal bowel lumen.
-Vague and intermittent symptoms may be present for some days prior to evaluation.
-Mean symptom duration before hospital admission is approximately five days

Case Discussion

Radiographic features:

-CT is the most widely used imaging modality.
-If CT is not available, MRI, plain films or ultrasound can been used.
-Findings on CT include: Gallbladder wall thickening, pneumobilia, Intestinal obstruction, Obstructing gallstones
-In patients presenting with nontraumatic abdominal pain, CT was shown to change the diagnosis, improve diagnostic certainty, and affect potential patient management decisions

Case Discussion

Treatment:

- The treatment for gallstone ileus is primarily surgical.
- Gallstone ileus involves three key elements: 1.cholelithiasis 2. biliary-enteric fistula 3.intestinal obstruction.
- Intestinal obstruction is typically addressed with an enterolithotomy (ie, enterotomy with stone removal).
- Cholelithiasis and biliary-enteric fistula are typically addressed together with a combined biliary procedure involving cholecystectomy and fistula closure.

Our patient:

The gallstone ileus was resolved by surgical removal of the stone through enterolithotomy. He did not undergo cholesytectomy and repair of the cholecyst-enteric fistula at the time of his operation. Prior to discharge, he had full return of bowel function and was tolerating a normal diet.

References:

American College of Radiology. ACR Appropriateness Criteria®. Available at https://acsearch.acr.org/list Accessed July 7, 2020

van Hillo M, van der Vliet JA, Wiggers T, Obertop H, Terpstra OT, Greep JM. Gallstone obstruction of the intestine: an analysis of ten patients and a review of the literature. *Surgery*. 1987;101(3):273-276.

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