

AMSER Case of the Month

July 2024

HPI: 56-year-old female presents with abdominal pain, nausea, and vomiting

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Patient Presentation

- **HPI:** 56 y.o female presents to the ED with intermittent but worsening abdominal pain with N/V for several weeks and diarrhea for 2 months.
- **Past Medical Hx:** HTN, OSA, RA, COPD, PTSD, IBS-Constipation dominant
- **Surgical Hx:** None
- **Vitals:** AFVSS
- **ROS:** +SOB, abdominal pain, nausea, vomiting, diarrhea
- **Physical Exam:** Abdominal exam with tenderness to palpation in the RUQ, LUQ, and epigastric area, no scleral icterus
- **Pertinent Labs:** CMP-K+ 2.7, Chloride 88, CO2 35, BUN 29, albumin 2.5.
CBC-WBC 10.5, CRP- 11.01, Fecal Calprotectin- 224

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

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	○
US abdomen	May Be Appropriate	○
MRI abdomen and pelvis without IV contrast	May Be Appropriate	○
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	⊕⊕⊕⊕

These imaging modalities were ordered by the ER physician

Findings: (unlabeled)

5 Abd Renal

C5-1

25Hz

≡ NORTH

2D

53%

Dyn R 55

P Low

HGen

56Y/F

TIS0.2 MI 1

Stu



Long Pancreas Area

16cm

X3

Findings: (labeled)

Abd Renal
C5-1
25Hz
NORTH

56Y/F

TIS0.2 MI 1
Stu

2D
53%
Dyn R 55
P Low
HGen

Well-defined hypoechoic structure with mild internal echogenic debris and single hyperechoic septation found to be dilated fluid-filled gastric antrum.

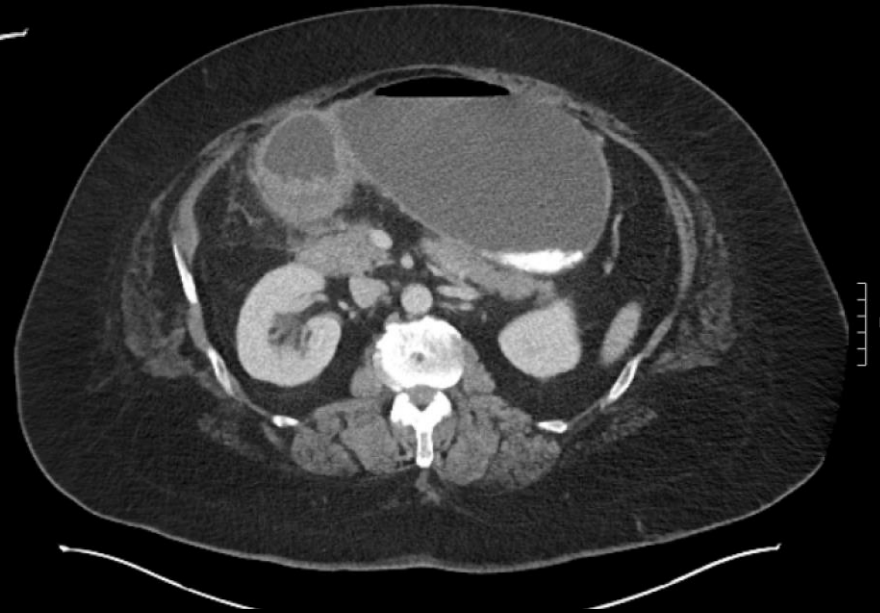
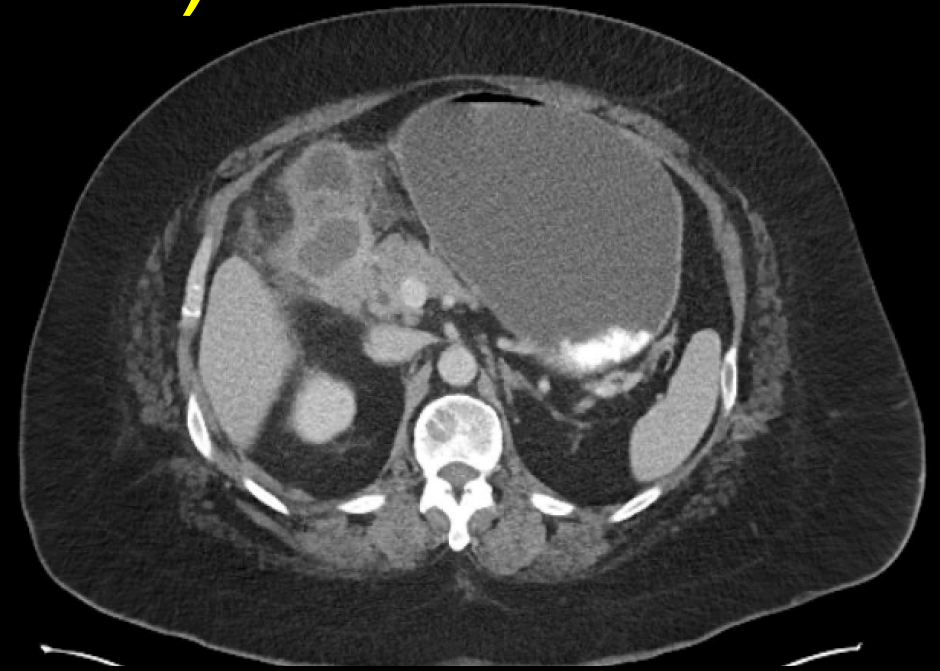
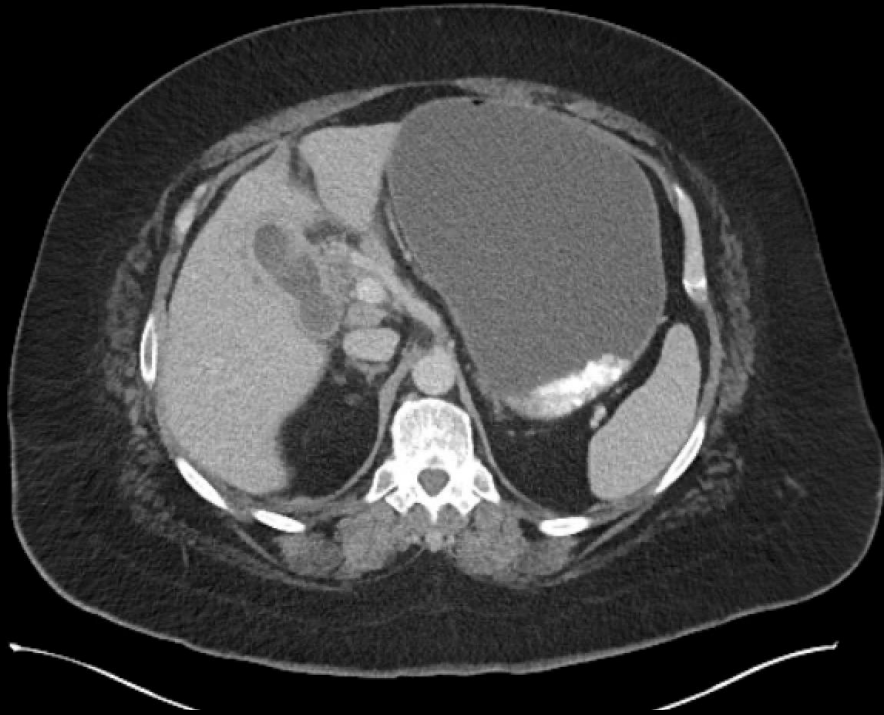


+ Dist 8.70 cm
x Dist 8.59 cm

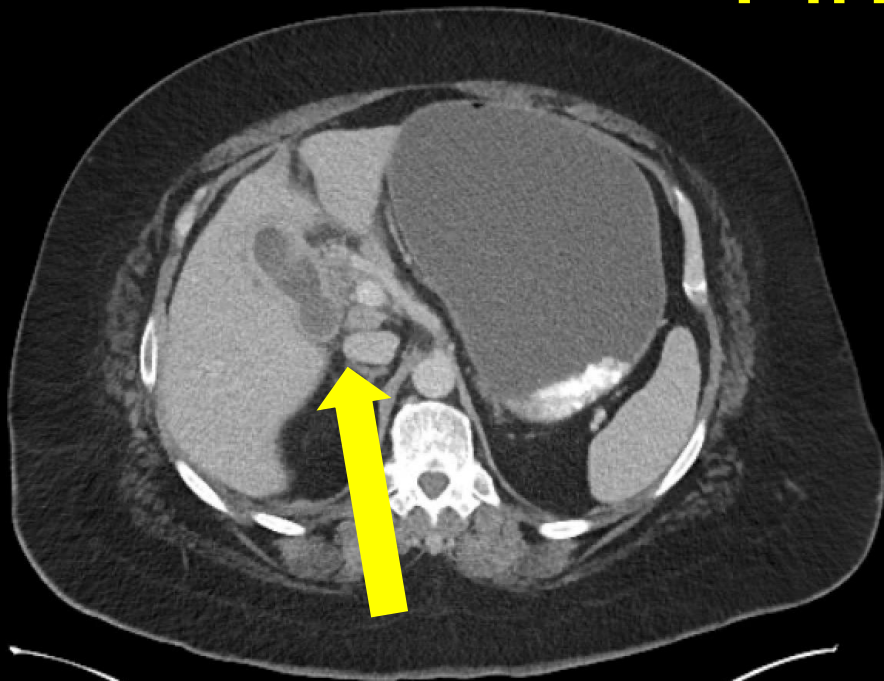
Long Pancreas Area



Findings: (unlabeled)

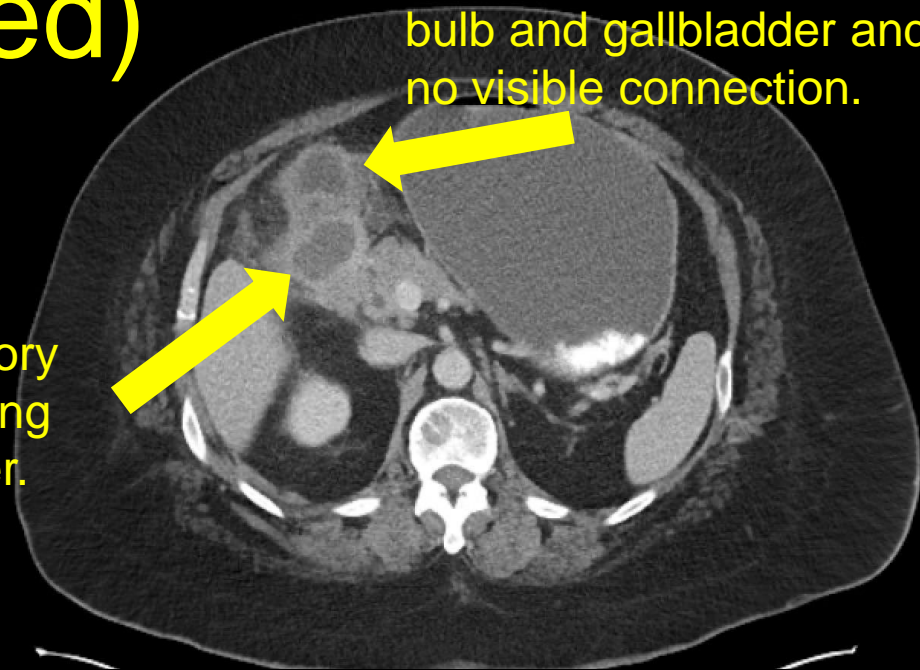


Findings: (labeled)

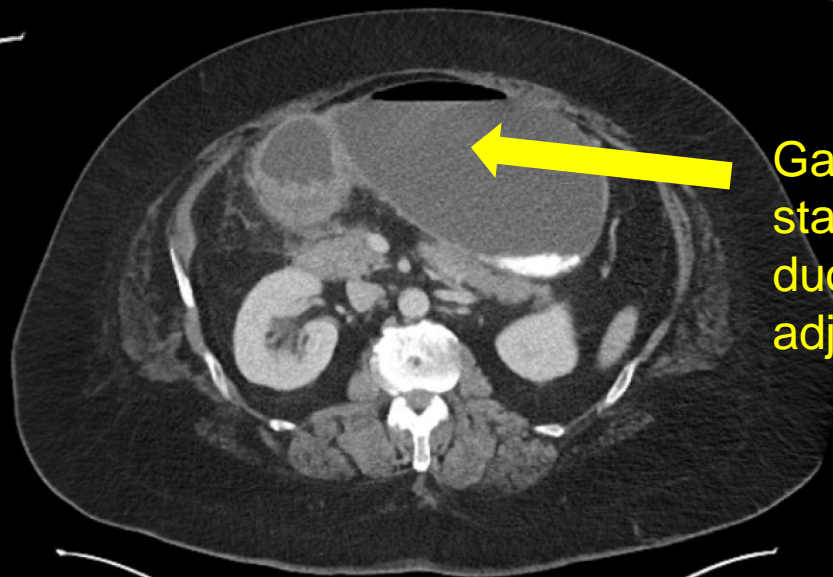


Marked gallbladder wall thickening and irregularity.

Marked gallbladder wall thickening with inflammatory changes including stranding adjacent to the gallbladder.



Inflamed duodenal bulb with no fat plane between bulb and gallbladder and no visible connection.



Gastric outlet obstruction which is starts at the level of the proximal duodenum/pylorus with marked adjacent inflammatory changes.

An EGD and EUS were performed.

Findings

- **EGD:** A partially obstructive mass-like area of inflammation with extrinsic compression of the duodenal bulb.
- **Biopsy from duodenal bulb:** Reactive/inflammatory changes including foveolar hyperplasia, Brunner gland hyperplasia, and abundant mixed inflammation with areas of ulceration. Negative for dysplasia; negative for malignancy.
- **EUS:** Duodenal bulb wall thickening, echogenic focus ~ 17.9 mm consistent with a large stone eroding into the bulb.

EUS

Echogenic leading edge measuring 17.9 mm consistent with a large gallstone.



Associated posterior acoustic shadowing from gallstone.



Dist: 17.9mm

1450/1452
WbT-8.0R
R:5.00
BG:60
BD:82

BULB

-1
-2
-3
-4

Extrinsic compression in the duodenal bulb resulted in a limited evaluation.



Final Dx:

Cholecystoduodenal fistula with impacted stone

Case Discussion

➤ Background/ Pathogenesis/ Epidemiology

- Cholecystoduodenal fistulae are abnormal connections between the gallbladder and the duodenum.
- Cholecystoduodenal fistulae are caused by chronic inflammation of the gallbladder or biliary tree leading to erosion or necrosis of the gallbladder wall and fistula formation.
- Cholecystoduodenal fistulae are the most common type of enterobiliary fistulization (77-90%).
- Nearly all cases described in the literature occurred in patients over the age of 50.

➤ Risk Factors

- Gallstones, chronic biliary disease, repeated episodes of cholecystitis, female sex, and old age (>60 years).
- Cholecystoduodenal fistulae are also associated with malignancy, iatrogenic causes, penetrating trauma, CBD exploration, and cholecystectomy.

Case Discussion

Clinical features can vary

In most cases, the signs and symptoms are nonspecific and can present as either:

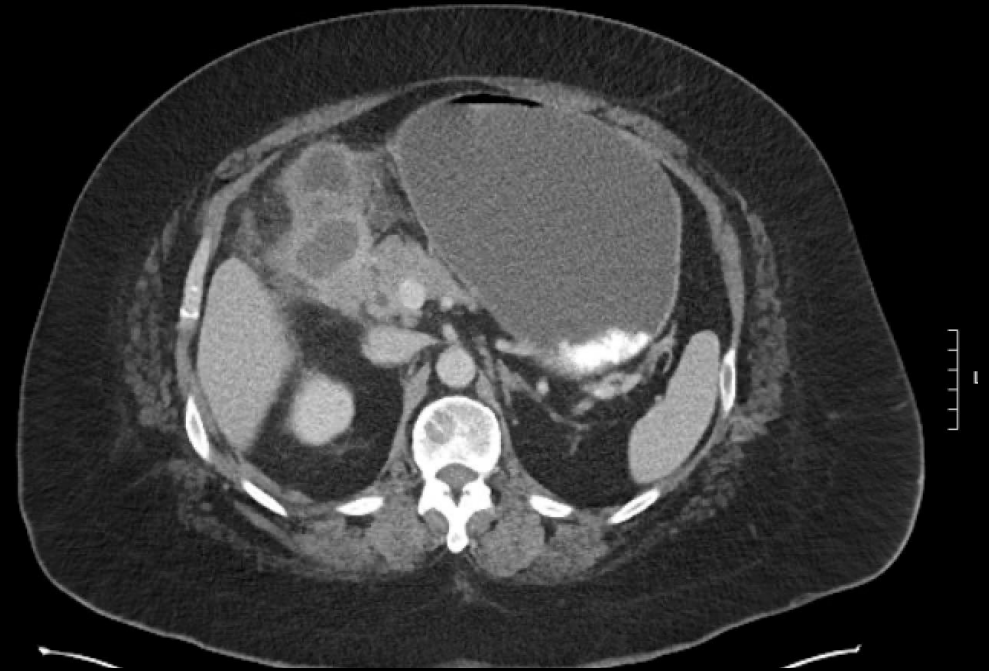
➤ Non-Obstructive

- Recurrent cholangitis, malabsorption, and weight loss

➤ Obstructive

- Gallstone ileus, Bouveret syndrome, hematemesis, or melena due to gallstone erosion through the GI wall.

*Other general nonspecific symptoms may include epigastric or RUQ pain, dyspepsia, bloating, diarrhea, flatulence, nausea, vomiting, jaundice, etc.



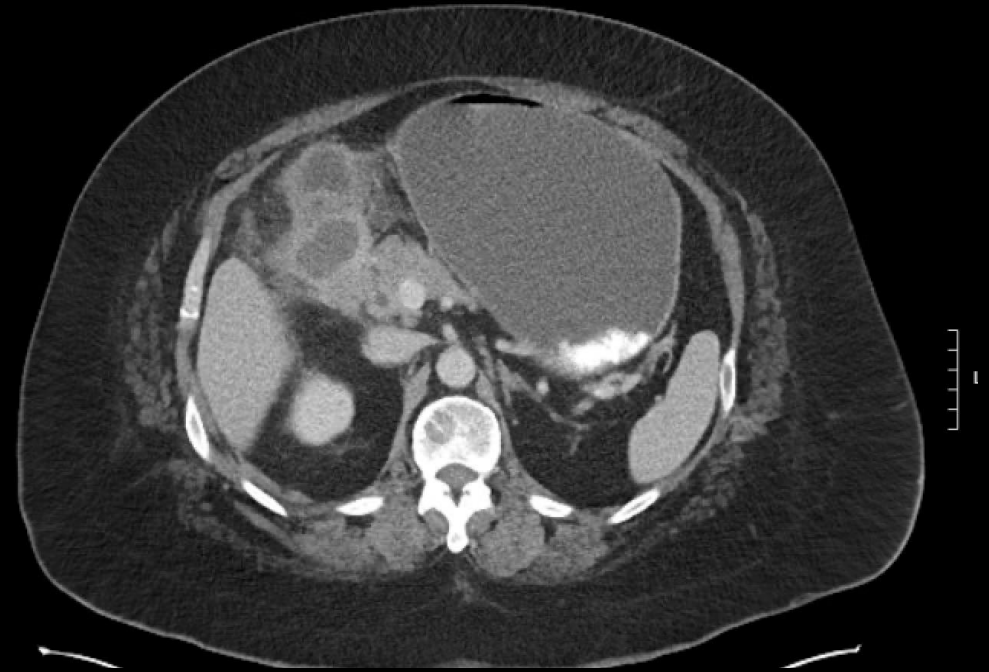
Case Discussion

➤ Diagnosis/Imaging

- CT is preferred over US
- CT allows for the direct visualization of a tract between the gallbladder and the duodenum.
- Pneumobilia, gallstones, and gallbladder thickening with inflammation may suggest the presence of a fistula

➤ Other Imaging Modalities

- MRCP, ERCP, EUS



Case Discussion

➤ Management

-Pre-Op management for obstructive type:
place NGT and keep patient NPO

➤ Non-Surgical Intervention:

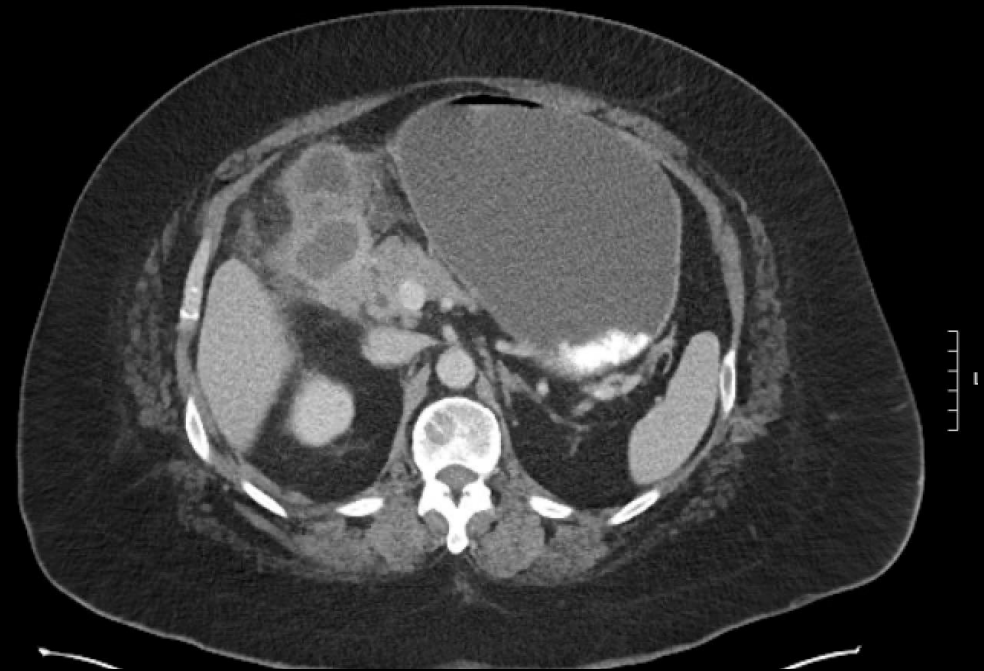
-Drainage by ERCP with stent placement

➤ Surgical intervention (Preferred):

-Enterolithotomy

-Enterolithotomy, cholecystectomy, and fistula
repair in a single procedure

-Enterolithotomy and cholecystectomy with
fistula repair in a later procedure



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