Gallbladder Disease

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5/17/2021

37 F G2P2 presents to your office with RUQ and epigastric abdominal pain that occurs almost every night for 4 weeks. It lasts for about 3-4 hours. She has no pain at present. No medical problems or surgeries in the past.

1. What is the most appropriate first imaging study?

a. HIDA scan
b. CT abd/pelvis
c. MRCP
d. ERCP
e. Abd US

What specific pieces of information are you looking for in the US?

-Presence or absence of gallstones (size, quantity)

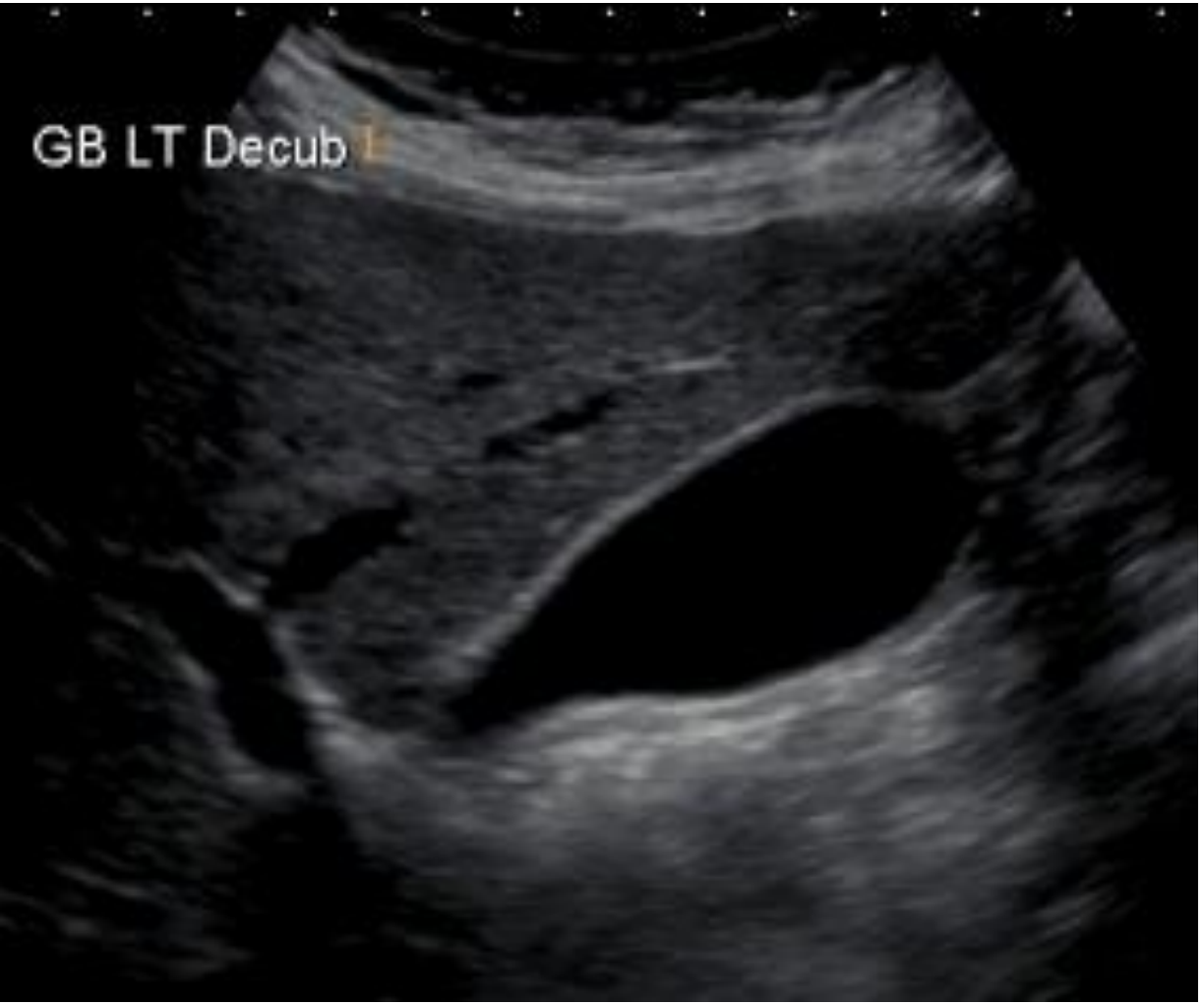
-Gallbladder wall thickening

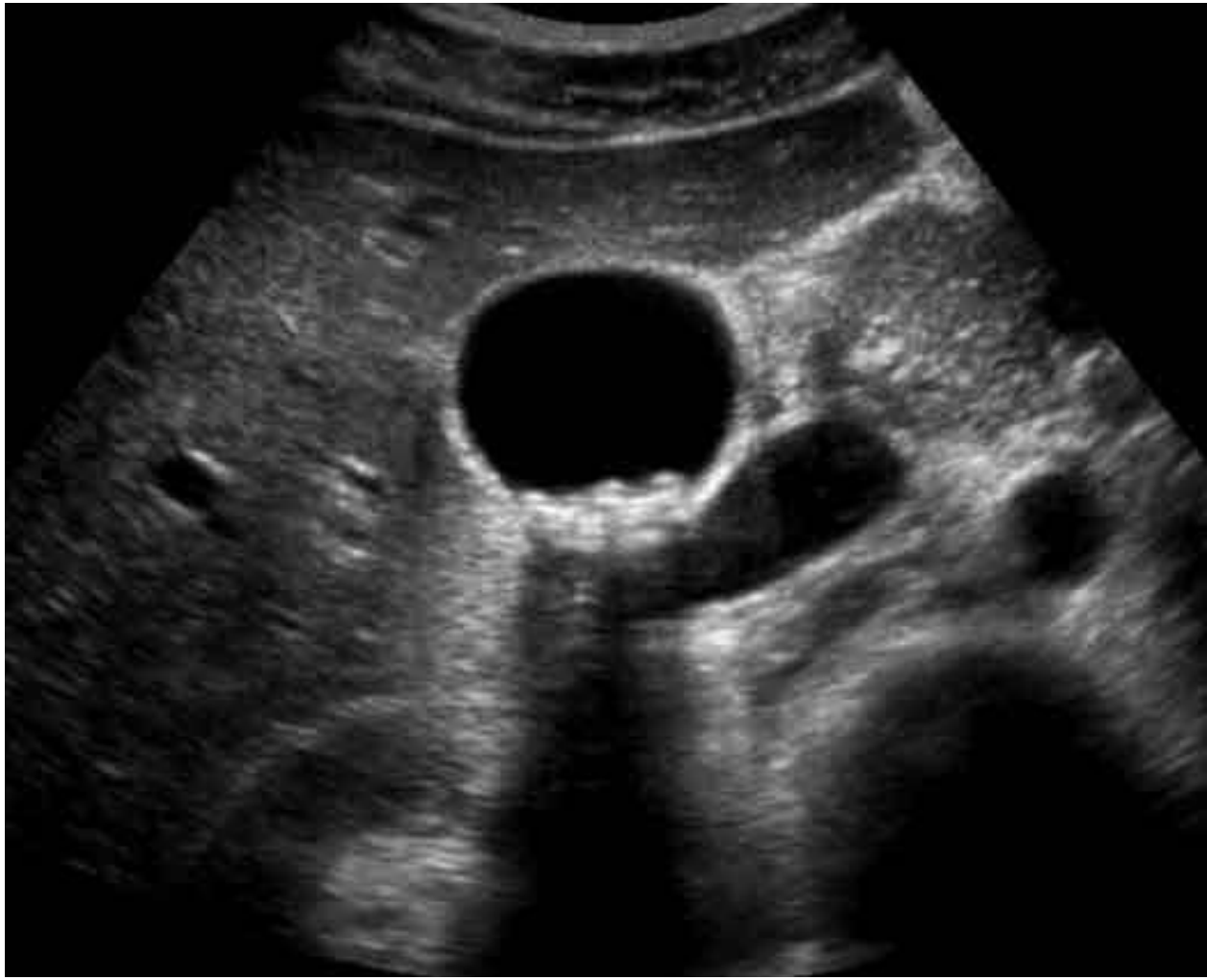
-Pericholecystic fluid

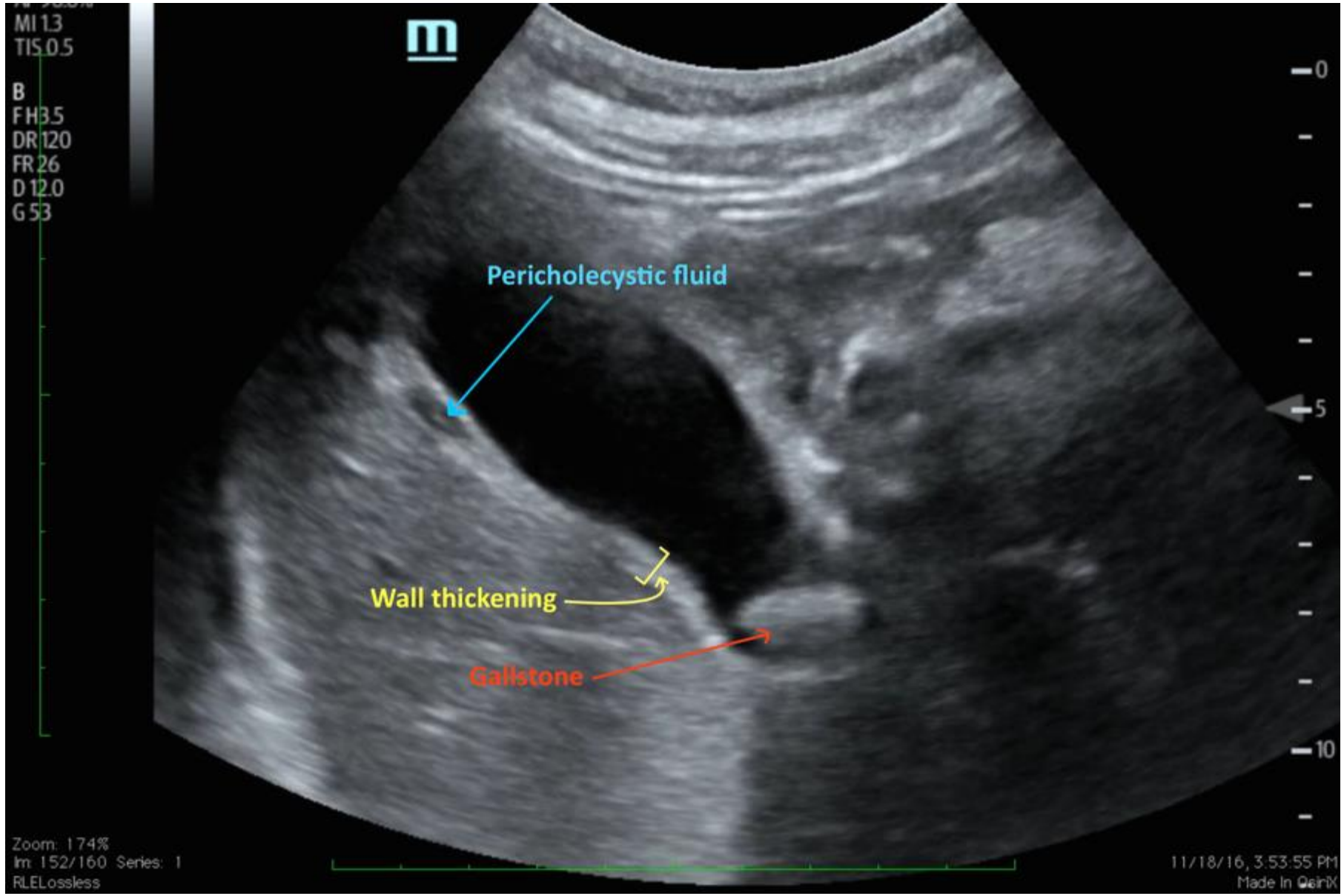
-CBD diameter

-Liver morphology

* Specificity >98%, sensitivity >95% for picking up gallstones


GB LT Decub




MI 1.3
TIS 0.5
B
FH 3.5
DR 120
FR 26
D 12.0
G 53
Pericholecystic fluid
Wall thickening
Gallstone
0
5
10
Zoom: 174%
Im: 152/160 Series: 1
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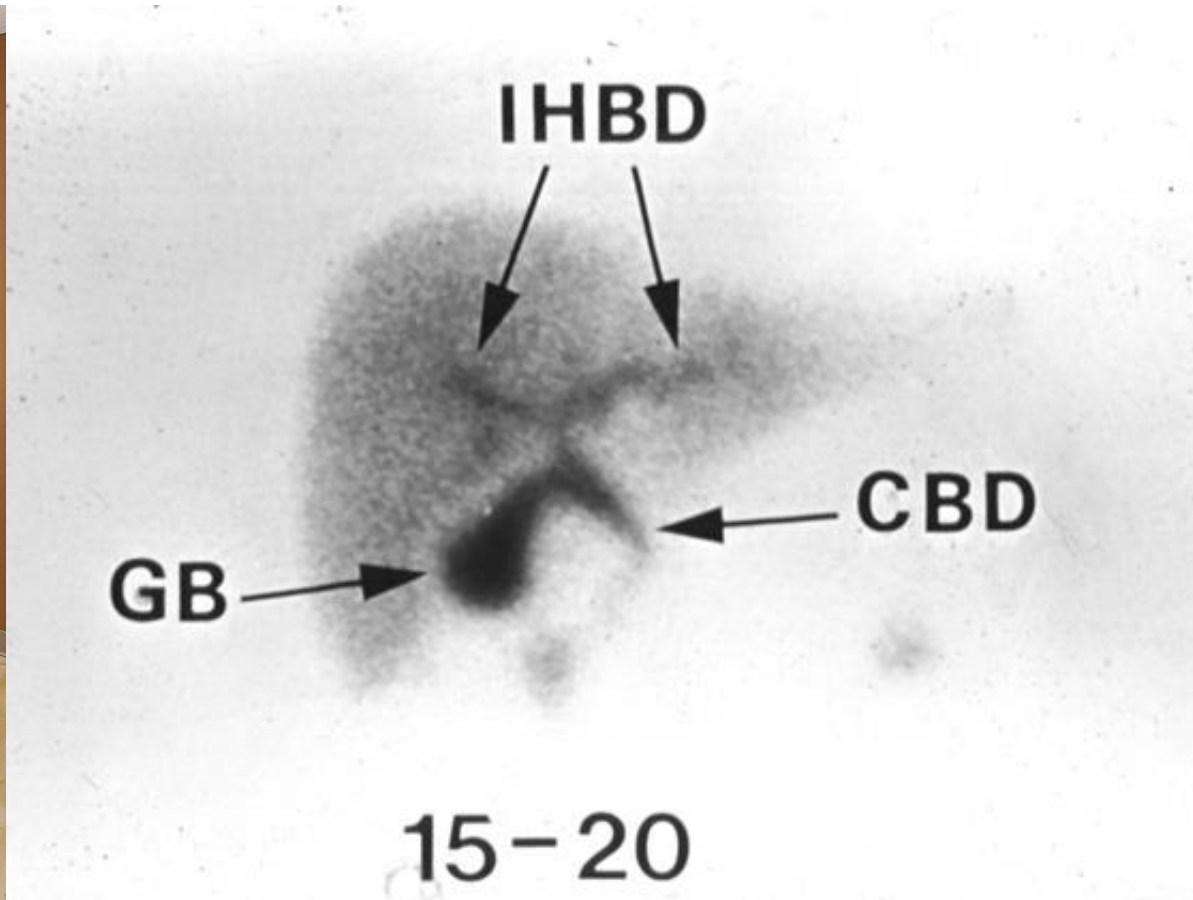
US- No gallstones present. Normal GB wall. CBD 3 mm. Liver mildly hypoechogenic.

What next?

a. Refer to GI
b. Prescribe ursodiol
c. HIDA scan
d. Recommend low fat diet
e. CT abd/pelvis

What is a HIDA scan?



HIDA- Filling of gallbladder and duodenum at 2 hours. EF calculated at 12%. Pain with CCK.

Dx?

a. Pancreatic spasm
b. Biliary dyskinesia
c. Severe GERD
d. Bile reflux
e. IBS

Same patient. US shows numerous small stones. No wall thickening. CBD is normal.

2. Now what is the diagnosis?

3. **You recommend referral to a surgeon. Patient asks if there are any alternatives to surgery for treating gallstones? Which of the following is most effective**?

a. Oral dissolution therapy with ursodiol
b. Oral dissolution therapy with apple cider vinegar
c. Percutaneous cholecystostomy tube
d. Extracorporeal shock wave lithotripsy
e. Low fat diet

64 M seen in ED with severe RUQ abdominal pain that began 12 hours ago. +N/V. No previous episodes. No fevers. VSS. Very tender in RUQ with + Murphy's

1. What labs/tests will you order?

- WBC 14
- Lipase/amylase normal
- T bili 2.1, Transaminases mildly elevated
- US- single gallstone lodged in neck of GB. No thickening or fluid. CBD 5 mm

DX?

- Acute cholecystitis

Differences

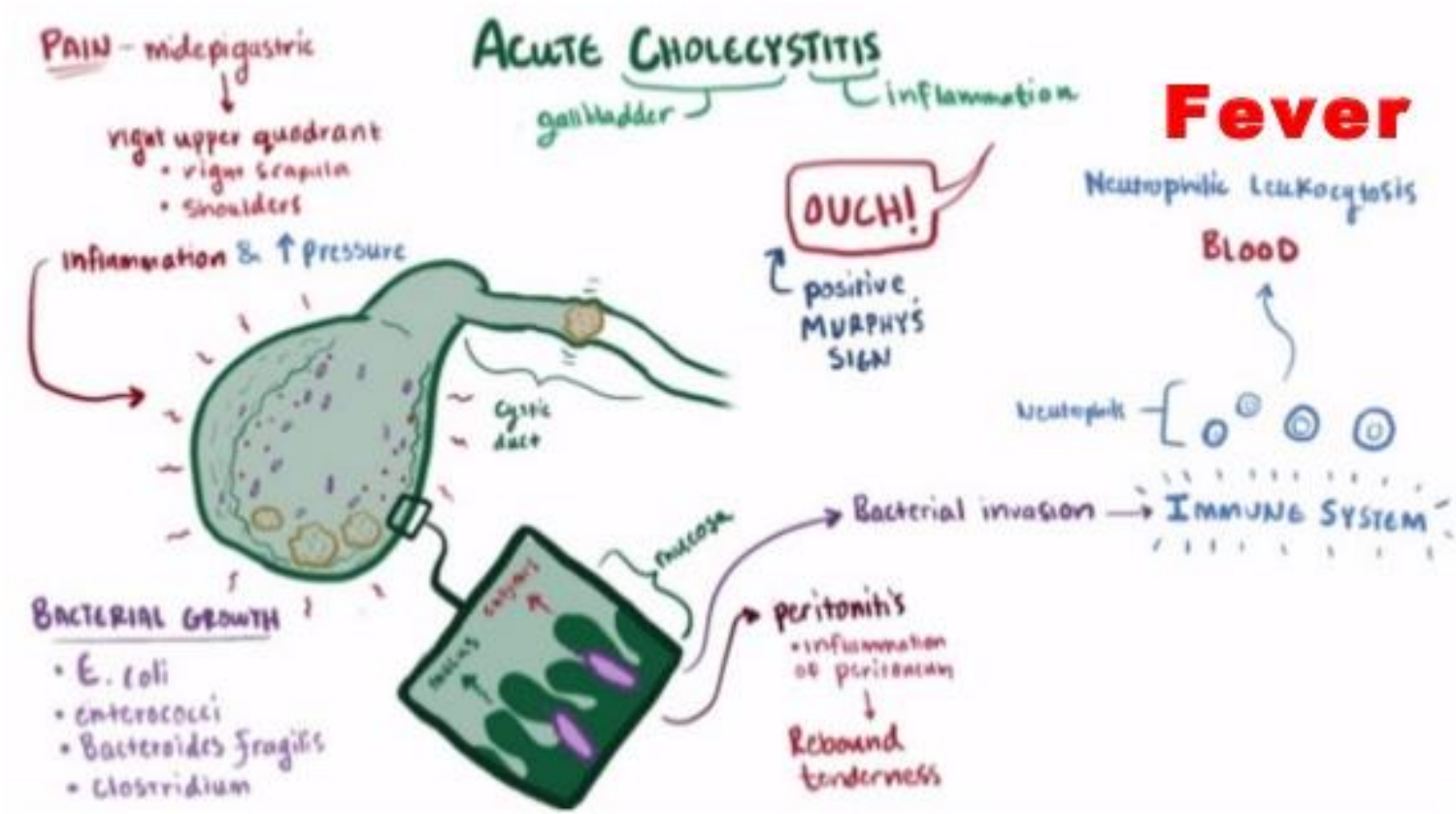
Biliary Colic

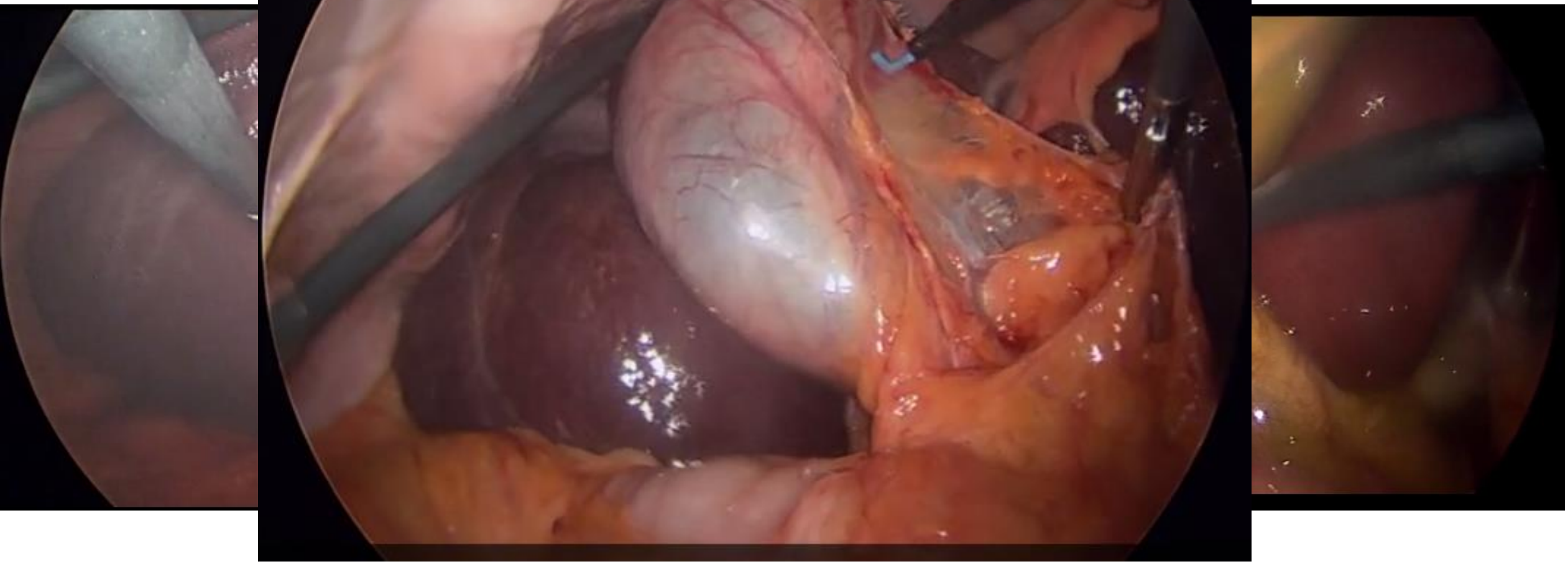
- Episodes last 1-4 hours
- Usually only mild TTP on exam
- All labs usually normal
- No fluid or thickening on US

Acute cholecystitis

- Pain is severe, constant, >6 hours*
- Very tender on exam, Murphy's sign*
- Vitals usually stable, Fevers rare**
- Leukocytosis common
- Mild elevation LFTs common
- US may show +fluid, thickening (Not always)

PATHOGENESIS





Management?

You diagnose acute cholecystitis and make a phone call to the surgeon. What do you do in the meantime?

- IV fluids- bolus usually warranted
- Blood cx?
- Start abx. Which?
- Pain control.
    - Opiates ok.

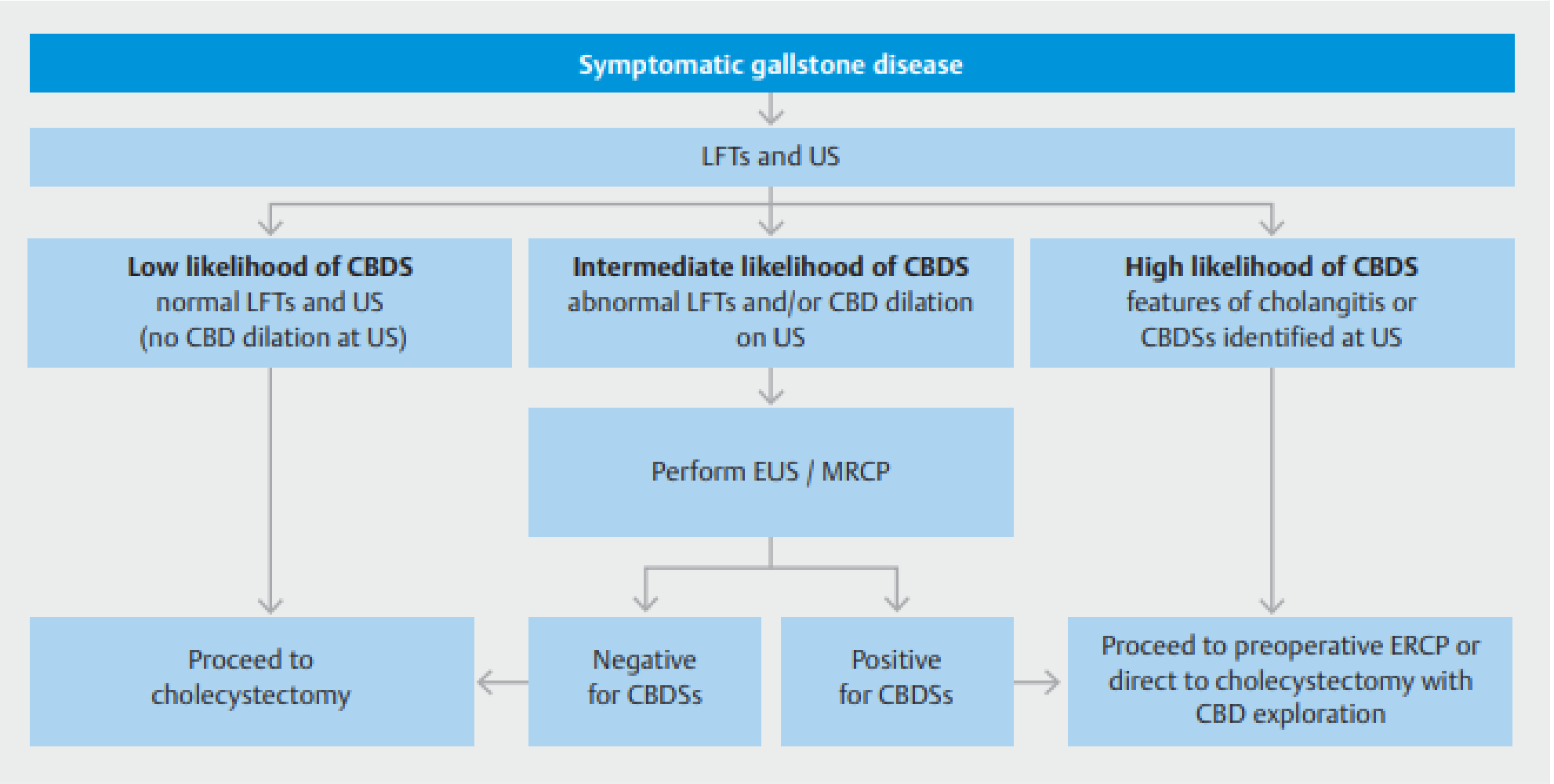
43 M in ED with epigastric and RUQ pain. +N/-V. Af, VSS. Moderate epigastric TTP, you note some scleral icterus.

What are you concerned about?

- Pancreatic head mass/ adenocarcinoma
- Acute hepatitis
- Ascending cholangitis
- Choledocholithiasis
- Gallstone pancreatitis

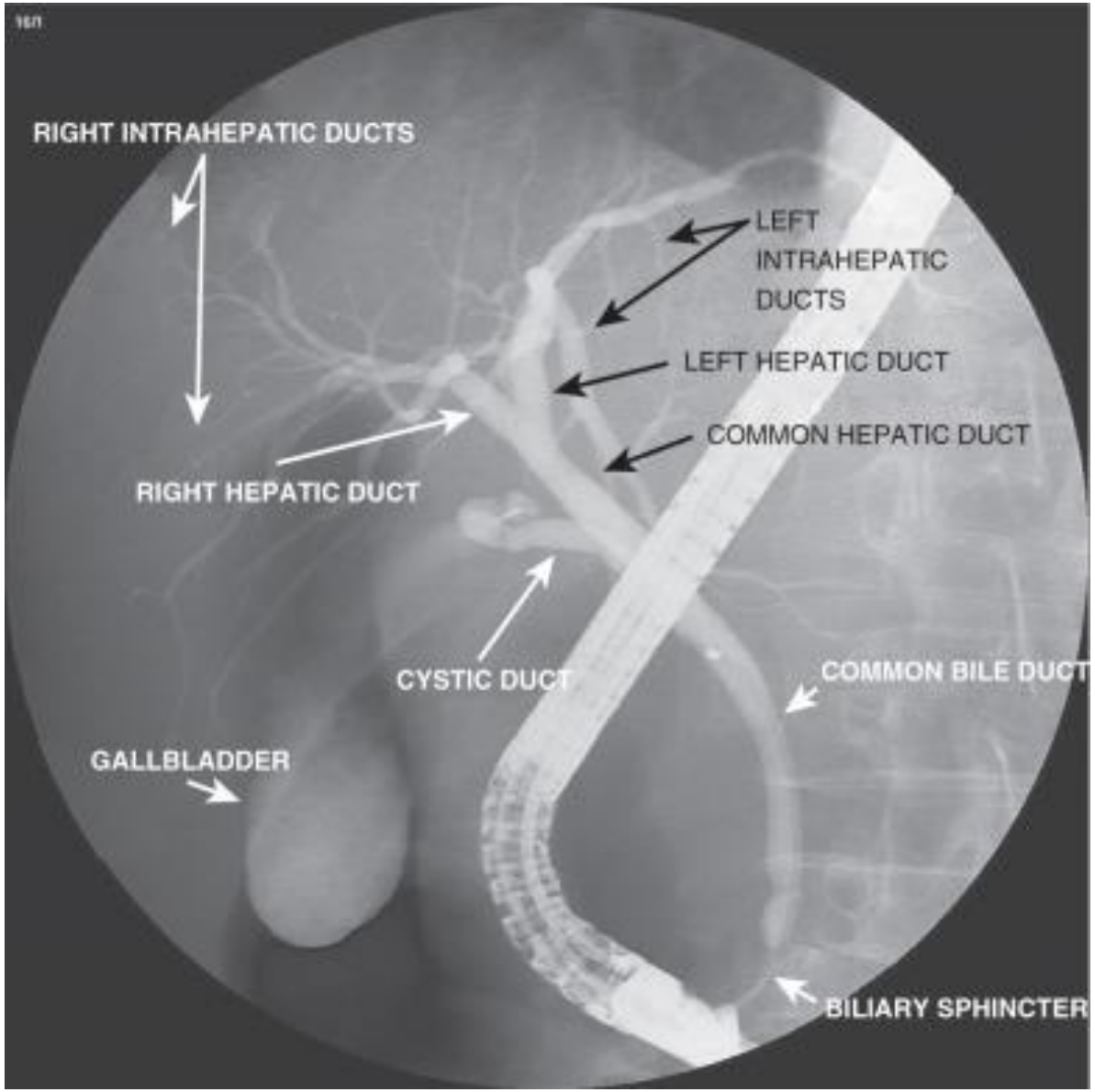
Test Results

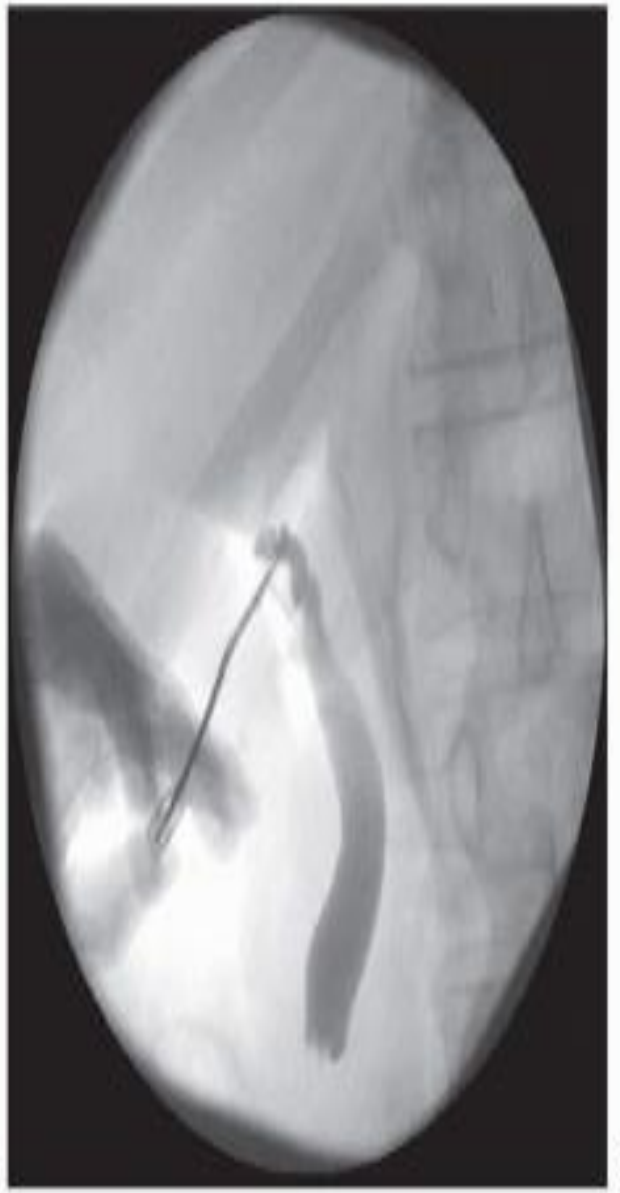
- WBC 12
- T bili 4.8
- AST 560
- ALT 400
- Lipase normal
- US- Sludge in gallbladder*. No thickening or fluid. CBD is 9 mm
- Assessment?

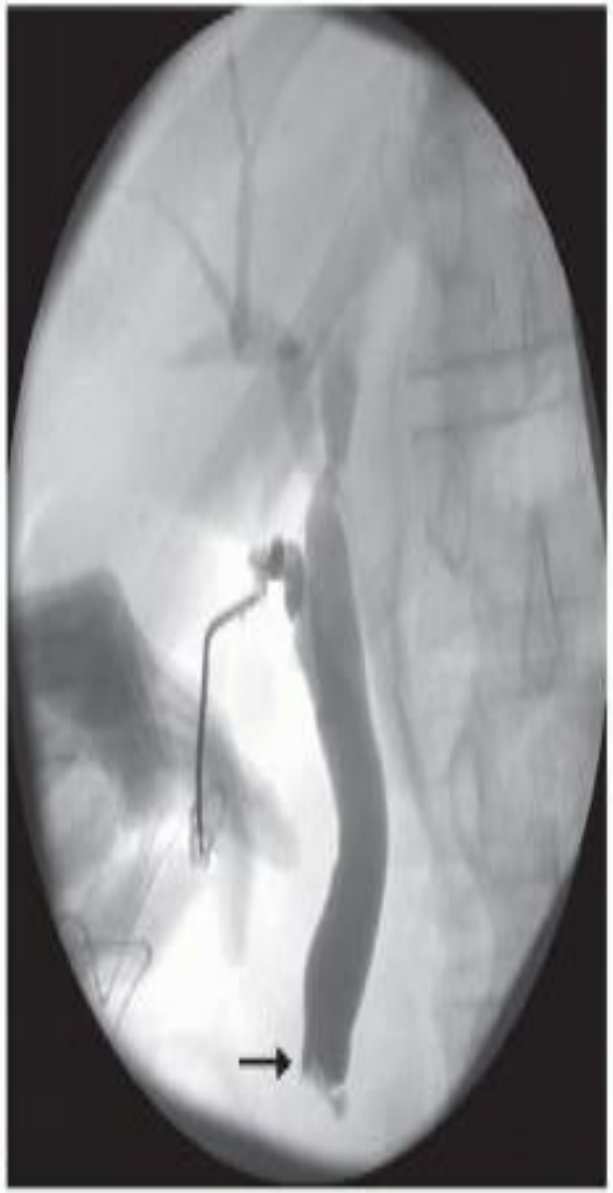

Symptomatic gallstone disease
LFTs and US
Low likelihood of CBDS
normal LFTs and US
(no CBD dilation at US)
Intermediate likelihood of CBDS
abnormal LFTs and/or CBD dilation
on US
High likelihood of CBDS
features of cholangitis or
CBDSs identified at US
Perform EUS / MRCP
Proceed to
cholecystectomy
Negative
for CBDSs
Positive
for CBDSs
Proceed to preoperative ERCP or
direct to cholecystectomy with
CBD exploration

Choledocholithiasis

- Dx not always straightforward
- Get surgery and GI involved early
- Options to make Dx: **Intraop cholangiogram, MRCP, EUS, ERCP**
- Options to treat: ERCP (most common), laparoscopic/ open CBD exploration


RIGHT INTRAHEPATIC DUCTS
LEFT INTRAHEPATIC DUCTS
LEFT HEPATIC DUCT
COMMON HEPATIC DUCT
RIGHT HEPATIC DUCT
CYSTIC DUCT
COMMON BILE DUCT
GALLBLADDER
BILIARY SPHINCTER


A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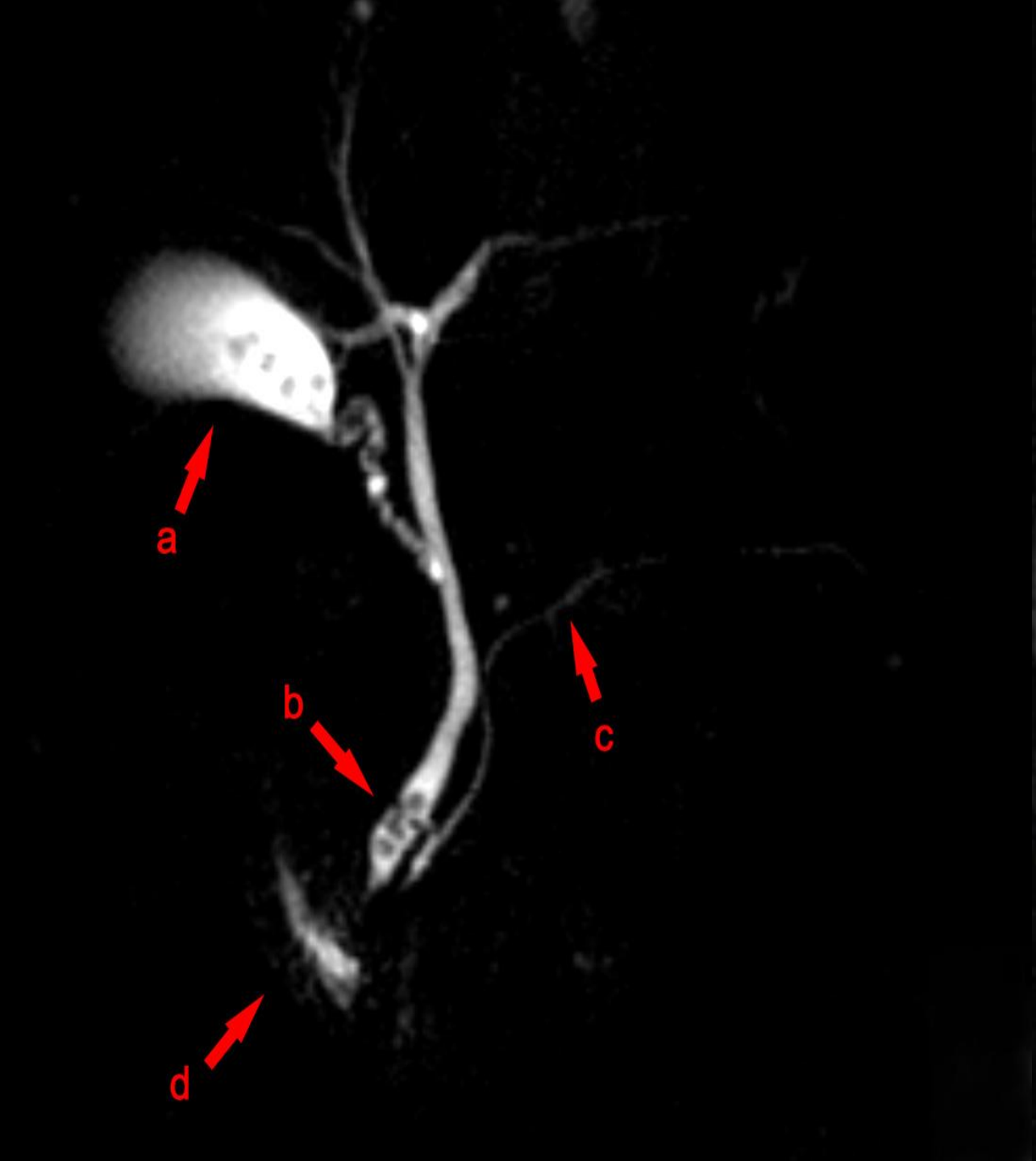
a
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c
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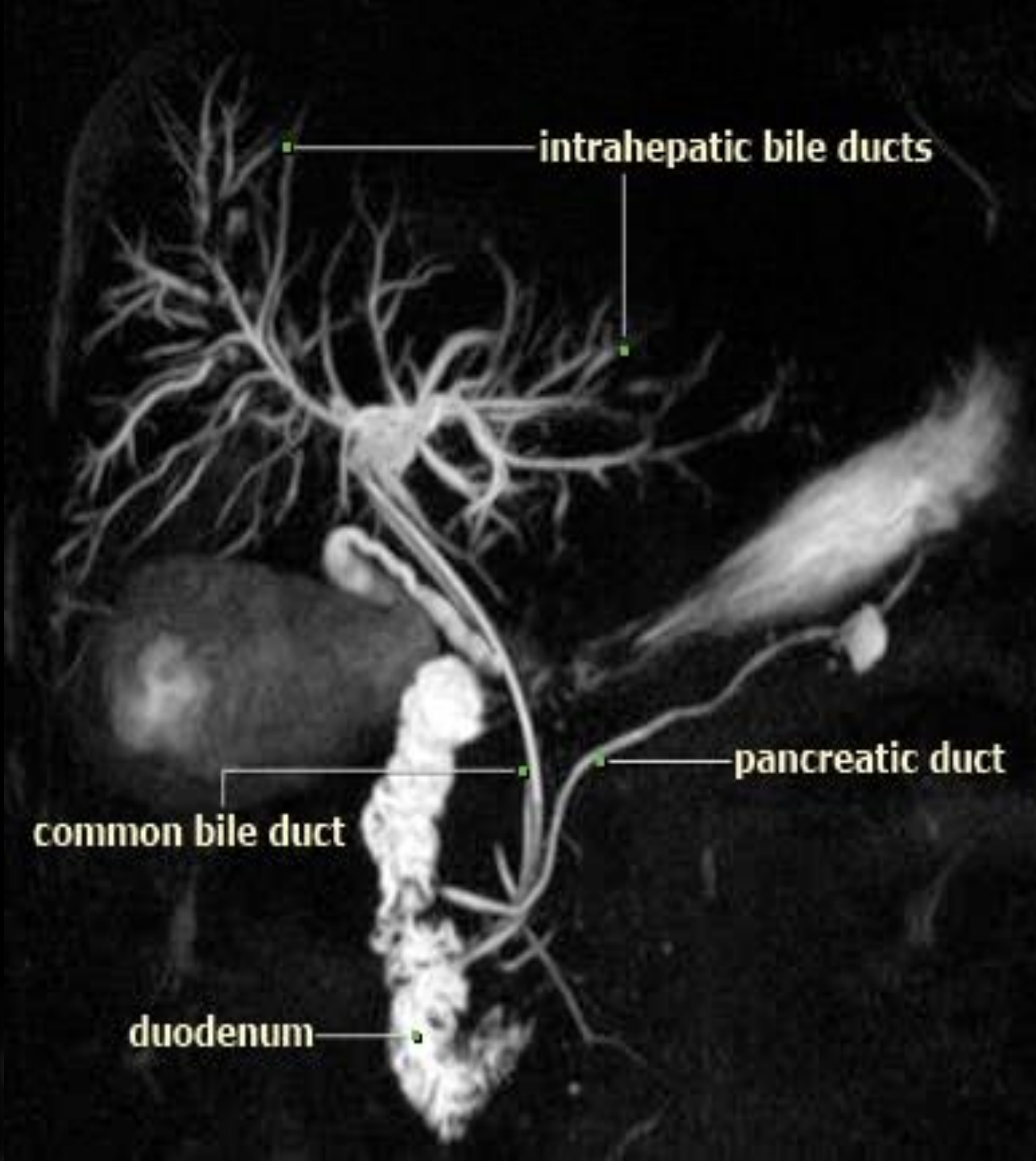

intrahepatic bile ducts
pancreatic duct
common bile duct
duodenum

Pt undergoes successful ERCP the following day. Next best step?

a. Discharge home with follow up with general surgery
b. Surgical consult while in the hospital
c. 1 week of prophylactic abx
d. Discharge home with PCP follow-up
e. Watch in hospital for a few more days to ensure no recurrent stones

43 M in ED with epigastric and RUQ pain. +N/-V. *101.8 F, BP 80/45, HR 115*. Moderate epigastric TTP, you note some scleral icterus.

What are you concerned about?

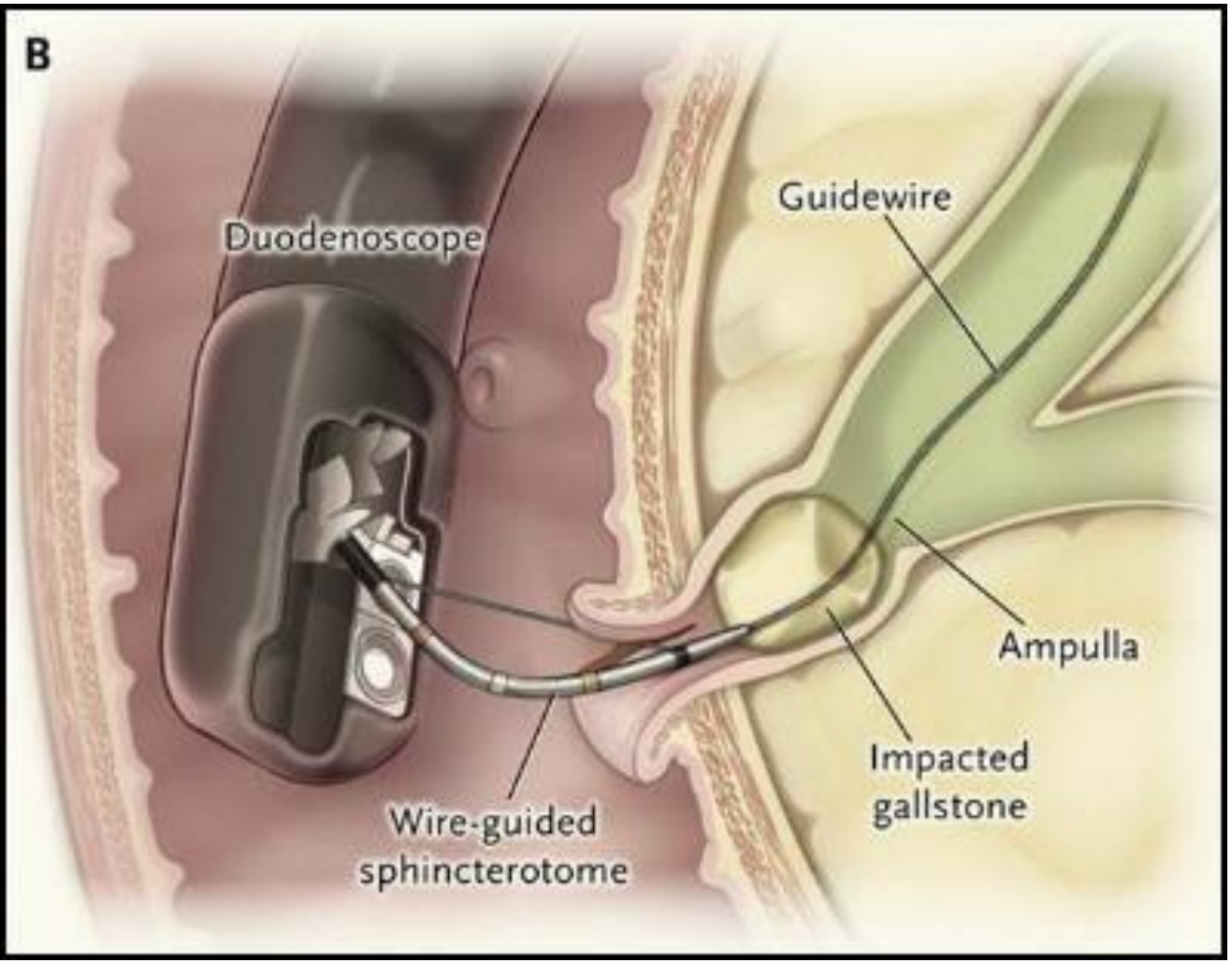
- Ascending cholangitis
- Pancreatitis
- Gangrenous cholecystitis

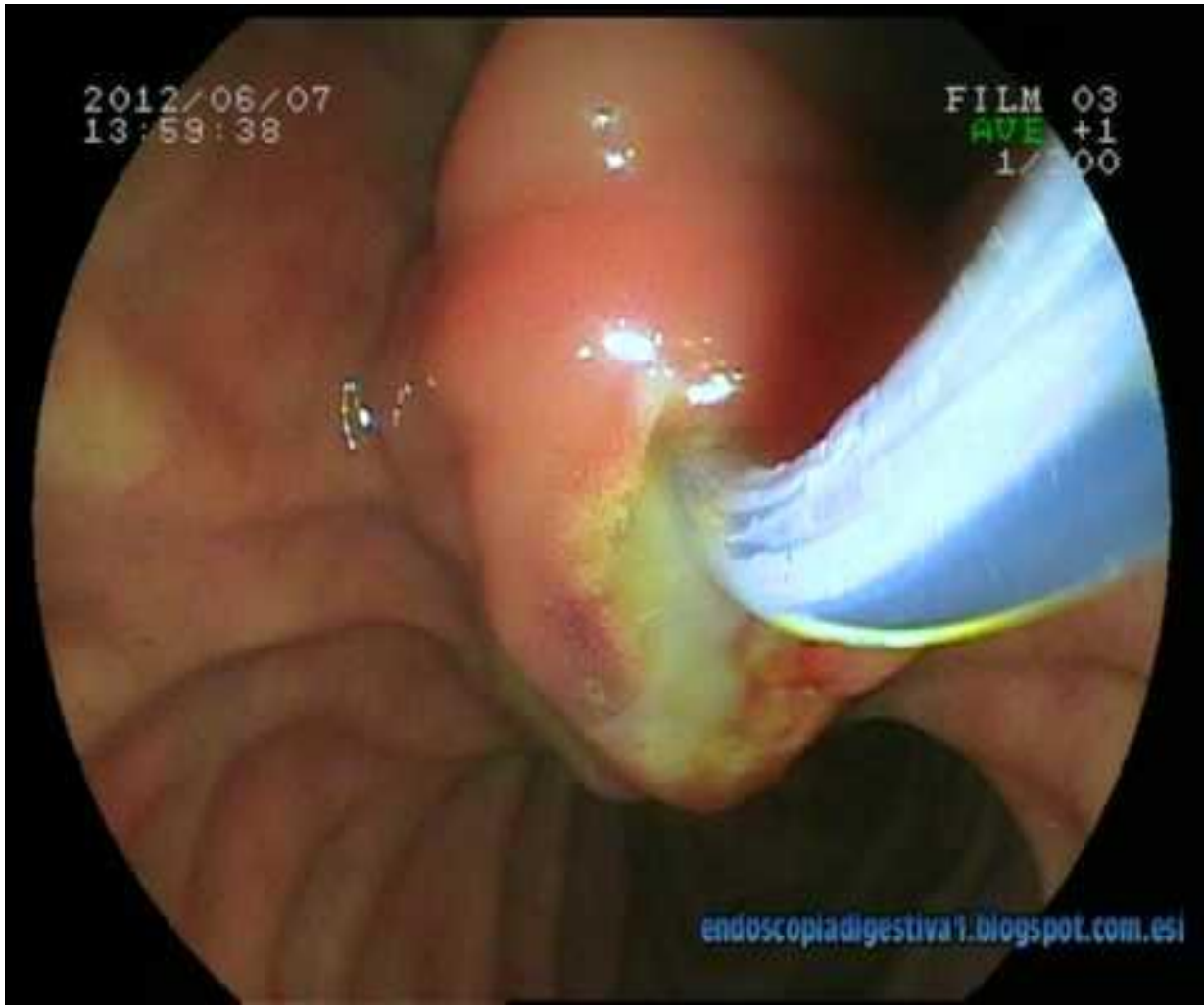
Workup

- WBC 22
- Plt 85
- Crt 2.8
- T bili 5.2
- Transaminases 3x normal
- Alk phos 420
- Lipase 45
- US: Multiple shadowing stones, +pericholecystic fluid, CBD 8 mm
- Assessment?
- Cholangitis, septic shock

Next Steps?

- Large bore PIV
- IV fluid resusc
- Blood cx
- Abx
- ICU admission
- GI consult for urgent ERCP


B
Duodenoscope
Guidewire
Ampulla
Impacted
gallstone
Wire-guided
sphincterotome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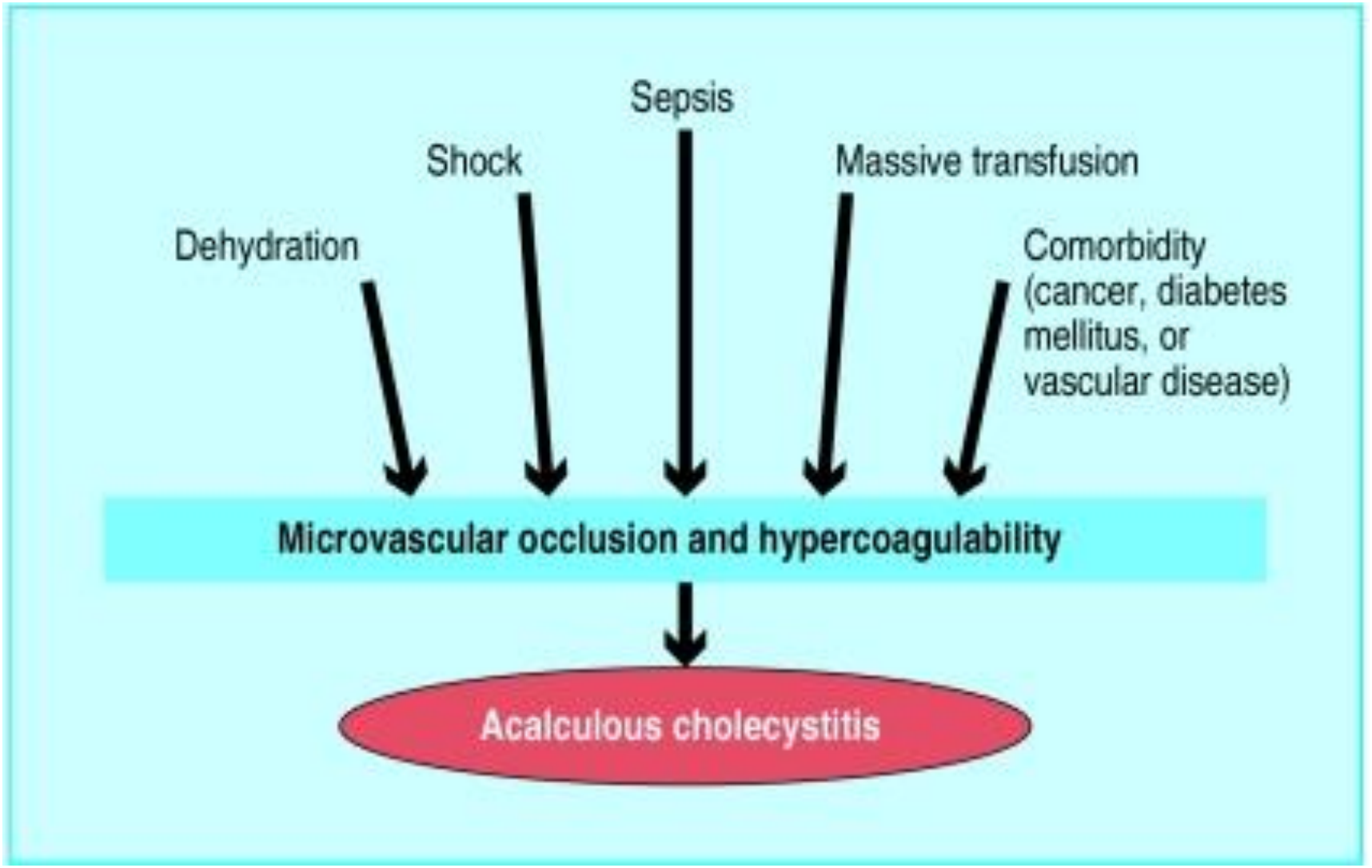
64 M who is POD6 from emergent CABG. Still on vent, on and off pressors. Fever of 102. Workup reveals normal CXR, WBC 18 LFTs elevated, US abd shows distended GB without stones.

Dx?

- Acalculous cholecystitis

What is the pathophysiology?

a. Positive pressure ventilation resulting in direct gallbladder damage
b. Infection of bile from hematogenous spread of pathogens introduced during surgery
c. Undiagnosed biliary dyskinesia
d. Increasing gallbladder distention resulting in compromised perfusion with necrosis
e. This is not a real diagnosis


Sepsis
Shock
Massive transfusion
Dehydration
Comorbidity
(cancer, diabetes
mellitus, or
vascular disease)
Microvascular occlusion and hypercoagulability
Acalculous cholecystitis

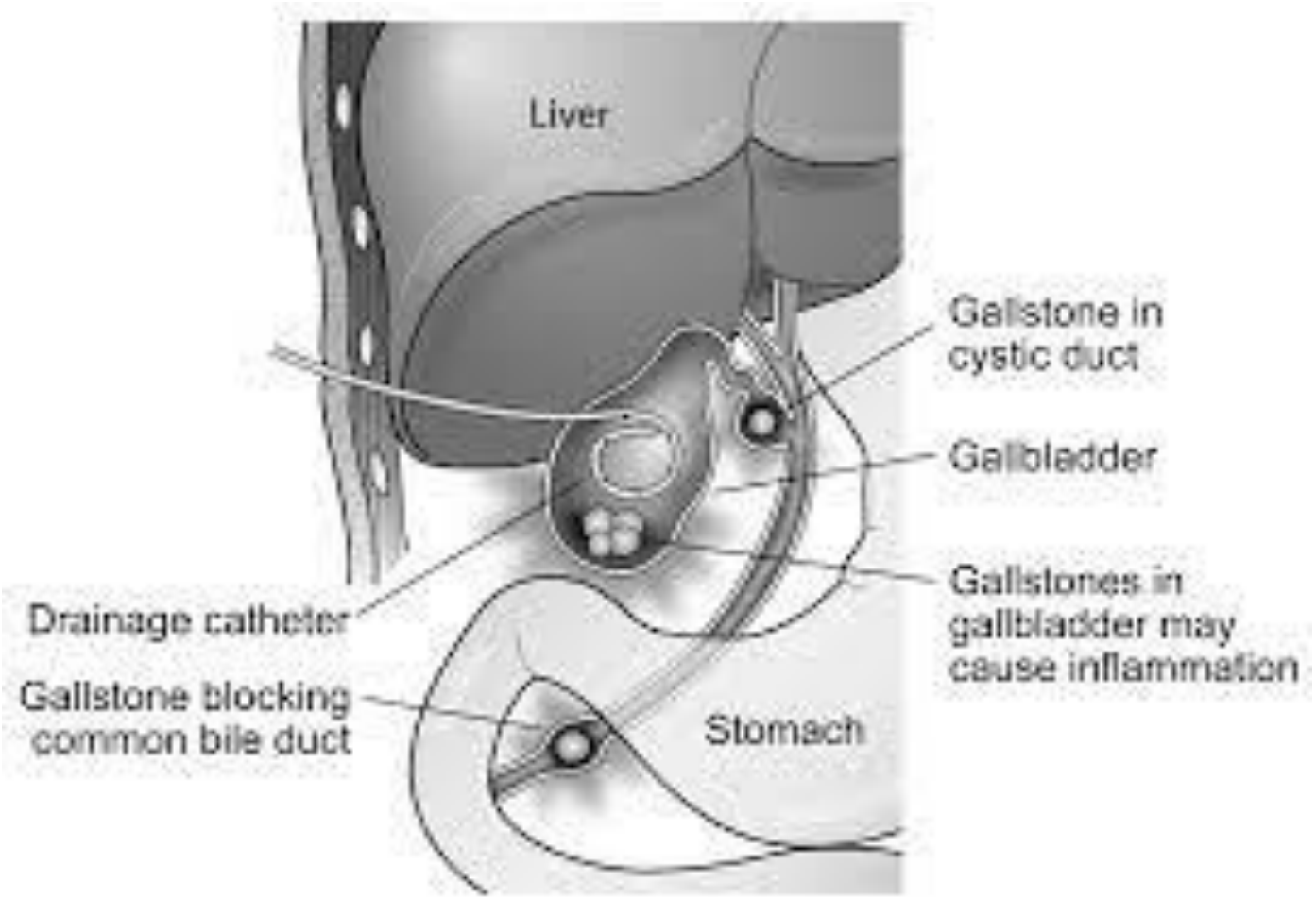
You immediately start abx. Next best step?

a. GI consult for emergent ERCP
b. Surgery consult for urgent open cholecystectomy
c. IR consult for urgent cholecystostomy tube
d. MRCP
e. HIDA scan

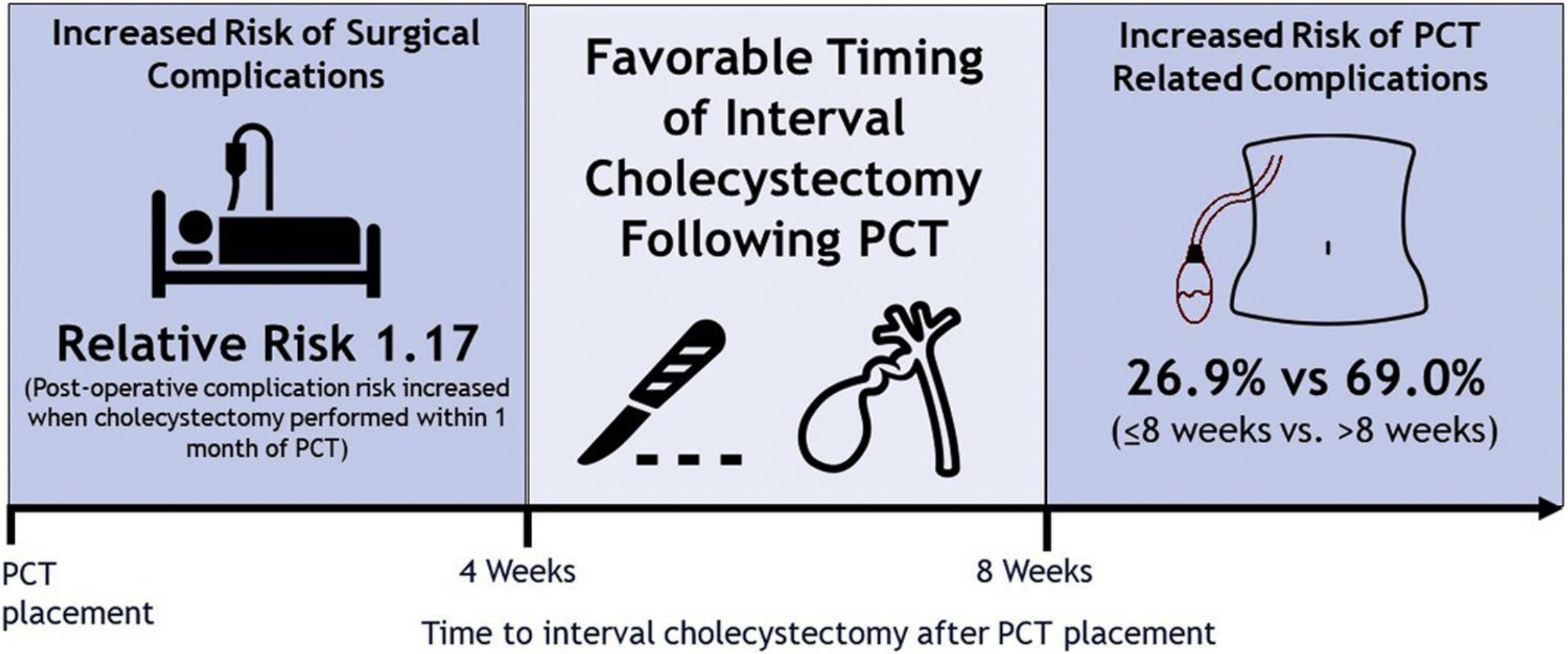
* Involve surgery in decision for chole tube.

Perc Chole tube (PCT)

- Decompresses GB
- Can occasionally be removed without need for LC. (Need tube cholangiogram to confirm patent cystic duct first)
- Increased risk of CBD injury after PCT placement



Finding the Most Favorable Timing for Cholecystectomy after Percutaneous Cholecystostomy Tube (PCT) Placement: An Analysis of Institutional and National Data



Woodward, Rios-Diaz, et al. J Am Coll Surg, January 2021

JACS

26 F G1P0, currently 10 weeks presents with symptomatic cholelithiasis.

Which recommendation is associated with lowest risk of complications?

a. Referral to surgeon with LC during pregnancy
b. Recommendation for low fat diet
c. PCT
d. Oral dissolution therapy
e. ESWL

Gallstones in pregnancy

- Pregnant women are higher risk for asymptomatic and symptomatic gallstones
- Antepartum LC associated with low complication rate, good outcomes with fewer admissions
- LC is safe during all trimesters of pregnancy

Questions?

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