

T.B. is a 65-year-old retiree who is admitted to your unit from the emergency department (ED). On arrival, you note that he is trembling and nearly doubled over with severe abdominal pain. T.B. indicates that he has severe pain in the right upper quadrant (RUQ) of his abdomen that radiates through to his mid-back as a deep, sharp, boring pain. He is more comfortable walking or sitting bent forward rather than lying flat in bed. He admits to having had several similar bouts of abdominal pain in the last month, but “none as bad as this.” He feels nauseated but has not vomited, although he did vomit a week ago with a similar episode. T.B. experienced an acute onset of pain after eating fish and chips at a fast-food restaurant earlier today. He is not happy to be in the hospital and is grumpy that his daughter insisted on taking him to the ED for evaluation. After orienting him to the room, you perform your physical assessment. The findings are as follows: He is awake, alert, and oriented $\times 3$, and he moves all extremities well. He is restless, is constantly shifting his position, and complains of fatigue. Breath sounds are clear to auscultation. Heart sounds are clear and crisp, with no murmur or rub noted and with a regular rate and rhythm. Abdomen is flat, slightly rigid, and very tender to palpation throughout, especially in the RUQ; bowel sounds are present. He reports having light-colored stools for 1 week. The patient voids dark amber urine but denies dysuria. Skin and sclera are jaundiced. Admission vital signs are BP 164/100, pulse of 132 beats/min, respiration 26 breaths/min, temperature of 100 ° F (37.8 ° C), Sp O 2 96% on 2 L of oxygen by nasal cannula.

1. What structures are located in the RUQ of the abdomen?
 - Liver
 - Gallbladder
 - Right kidney
 - Pancreas
 - Stomach
2. Which of the previously mentioned organs are typically palpable in the RUQ?
 - Liver
 - Right kidney
3. As you palpate T.B.'s abdomen, you deeply palpate the costal margin in the RUQ, and ask him to take a deep breath. This causes T.B. to stop inspiration abruptly, midway, and exclaim, “Oh, that hurts!” What does this finding indicate?
 - a. Rebound tenderness
 - b. Hepatomegaly
 - c. Splenomegaly
 - d. Murphy's sign

T.B.'s abdominal ultrasound demonstrates several retained stones in the common bile duct and a stone-filled gallbladder. T.B. is admitted to your floor, NPO status, and is scheduled to undergo an endoscopic retrograde cholangiopancreatogram (ERCP) that afternoon. During an ERCP, the patient is sedated, and an ERCP scope is inserted through the mouth, past the stomach, to the outlet of the common bile duct, the ampulla of Vater. Typically, this muscle will be cut to widen the opening and outflow of the common bile duct, a procedure called a *papillotomy*. This allows the bile and stones to flow out into the small intestine.

You review T.B.'s other laboratory results:

Preoperative Laboratory Test Results

WBC	11,900/mm ³
Hgb	14.3 g/dL
Hct	43%
Platelets	250,000/mm ³
Alanine transaminase (ALT)	200 units/L
Aspartate transaminase (AST)	260 units/L
Alkaline phosphatase (ALP)	450 units/L
Total bilirubin	4.8 mg/dL
Prothrombin time (PT)/INR	11.5 sec/1.0
Amylase	50 units/L
Lipase	23 units/L
Urinalysis	Negative

3. Which results are abnormal, and what do they reflect?

- WBC count is high and indicates infection
- Elevated bilirubin, AST, and ALP indicate poor liver function

The patient undergoes the ERCP, and stones and bile are released, but imaging reveals that a stone is still retained within the cystic duct, and multiple stones remain within the gallbladder itself. A surgical consult is obtained, and a laparoscopic cholecystectomy ("lap choley") is planned.

5. Identify at least four preoperative orders that will likely need to be completed before T.B. goes to surgery.

- Chest Xray
- NPO
- EKG
- Bowel preparation
- ABGs
- CBC

6. T.B. is medicated with morphine sulfate 2 mg IV push (IVP) q2h as needed. After the first dose, he reports that on a scale of 1 to 10, his pain has decreased from a 10 to a 4 within 30 minutes. What other methods could be used to help T.B.'s pain?

- Place a pillow over the abdomen
- Change positions
- Ambulate
- Maintain IV site

7. Which data charted in the assessment are consistent with CBD obstruction?

- Jaundice
- Light color stool
- amber color urine
- Temperature

At 2330, T.B. spikes a temperature of 101.5° F (38.6° C) (tympanic). His Sp O₂ on 2 L oxygen per nasal cannula is now 90%, so you immediately increase the flow rate to raise his O₂ saturation. You inform the on-call surgeon, and she orders a STAT chest x-ray and a broad-spectrum antibiotic—imipenem and cilastatin (Primaxin) 500 mg IV now, then q6h.

8. Before you give the antibiotic, what will you assess?

- check for allergies
- check IV site for patency
- do a culture and sensitivity test
- check creatinine and BUN levels

9. As you review the orders, you note that the Primaxin contains cilastatin. What is the purpose of the cilastatin?

- a. It enhances the action of the imipenem.
- b. It reduces the chance of an allergic reaction.
- c. It promotes the renal secretion of the imipenem.
- d. It causes the bacterial cell wall to become unstable.

T.B. undergoes a successful laparoscopic cholecystectomy the next morning. An intraoperative cholangiogram shows that the ducts are finally cleared of stones at the conclusion of the surgery. When he returns to the nursing unit, his stomach is soft but quite distended. His wife asks you whether anything is wrong.

10. How will you respond to her question?

- this is an expected finding because of the gasses

11. When you remove the tape the next day to change the dressing, you note that the skin is red and blistered underneath. Otherwise, he is doing well; his vital signs are 128/72, 80, 16, 99.8° F (37.7° C), and Sp O₂ of 95% on room air. He even tolerated a light breakfast. To protect the blistered area from further damage, you apply a hydrocolloid dressing to the damaged skin. What has T.B. experienced, and what are the benefits of this type of dressing?

- He developed an allergy to the adhesive. The dressing provides a moist environment which promotes healing and protects the uninfected wound.

The rest of the day is uneventful, and the next day T.B. is discharged to home.

12. What discharge teaching does T.B. need?

- pain management
- diet
- take meds as prescribed
- attend follow up appointments