

A 45-year-old woman comes to the emergency department with colicky pain in the right upper quadrant. Her pain started about an hour ago after a large, fatty meal and is associated with nausea. The patient had a similar episode a week ago that resolved spontaneously. She has no vomiting or diarrhea. The patient had a cholecystectomy 2 years ago due to symptomatic cholelithiasis. Her other medical problems include hyperlipidemia and obesity. The patient does not use tobacco, alcohol, or illicit drugs. Temperature is 37 C (98.6 F), blood pressure is 140/85 mm Hg, and pulse is 110/min. Cardiopulmonary examination is unremarkable except for tachycardia. She has right upper quadrant tenderness to deep palpation without guarding or rebound tenderness. Bowel sounds are normal. Rectal examination is normal and stool is negative for blood. Laboratory results are as follows:

Leukocytes	8,000/mm ³
Liver function studies	
Total bilirubin	1.3 mg/dL
Alkaline phosphatase	120 U/L
Aspartate aminotransferase (SGOT)	37 U/L
Alanine aminotransferase (SGPT)	49 U/L
Amylase	91 U/L

Abdominal ultrasonography reveals a mildly dilated common bile duct but no stones. While in the emergency department, the patient receives morphine for pain control, but the pain worsens. Which of the following is the most likely diagnosis in this patient?

- ☐ A. Bile reflux gastritis
- ☐ B. Choledocholithiasis
- ☐ C. Chronic mesenteric ischemia (intestinal angina)
- ☐ D. Irritable bowel syndrome
- ☐ E. Sphincter of Oddi dysfunction

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- ☐ A. Bile reflux gastritis [4%]
- ☐ B. Choledocholithiasis [19%]
- ☐ C. Chronic mesenteric ischemia (intestinal angina) [4%]
- ☐ D. Irritable bowel syndrome [0%]
- ☒ E. **Sphincter of Oddi dysfunction** [72%]

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Explanation:

User Id: [redacted]

This patient likely has postcholecystectomy pain due to **sphincter of Oddi dysfunction**

Explanation:

User Id: [REDACTED]

This patient likely has postcholecystectomy pain due to **sphincter of Oddi dysfunction (SOD)**. The sphincter of Oddi is a muscular valve controlling the flow of bile and pancreatic juice into the duodenum.

SOD, which can develop follow any inflammatory process (eg, surgery, pancreatitis), encompasses 2 separate physiologic entities: **dyskinesia** and **stenosis** of the sphincter of Oddi. Obstruction of flow through the sphincter may result in retention of bile, causing a **functional biliary disorder** that mimics a structural lesion. Recurrent, **episodic pain** in the right upper quadrant or epigastric region, with corresponding **aminotransferase and alkaline phosphatase elevations**, is common; visualization of a **dilated common bile duct in the absence of stones** increases the likelihood of SOD. **Opioid** analgesics (eg, morphine) may cause sphincter contraction and precipitate symptoms of SOD, as seen in this patient.

Sphincter of Oddi **manometry** is the gold standard for the diagnosis of SOD; sphincterotomy is the treatment of choice in most cases.

(Choice A) Bile reflux gastritis occurs as a result of an incompetent pyloric sphincter (eg, following gastric surgery), which allows retrograde flow of bile-rich duodenal fluid into the stomach and esophagus; it would result in vomiting, frequent heartburn, and abdominal pain.

(Choice B) The presence of gallstones in the common bile duct is called choledocholithiasis. Patients have right upper quadrant pain and jaundice due to biliary obstruction; laboratory studies show elevated direct bilirubin and elevated transaminases. This patient has no gallstones on ultrasound.

(Choice C) Patients with chronic mesenteric ischemia (intestinal angina) experience dull, postprandial epigastric pain due to atherosclerotic narrowing of the mesenteric vasculature and subsequent episodic hypoperfusion of the intestines.

(Choice D) Irritable bowel syndrome is a functional gastrointestinal disorder defined by a group of symptoms, including abdominal pain and changes in bowel patterns (ie, frequent diarrhea or constipation). The diagnosis is made following the exclusion of other pathologies (eg, infection, lactose intolerance) that cause similar symptoms. No laboratory testing or imaging studies are available to diagnose the condition.

Educational objective:

Sphincter of Oddi dysfunction is a functional biliary disorder due to dyskinesia or stenosis of the sphincter of Oddi. Patients experience recurrent, episodic pain in the right upper

of Oddi. Obstruction of flow through the sphincter may result in retention of bile, causing a **functional biliary disorder** that mimics a structural lesion. Recurrent, **episodic pain** in the right upper quadrant or epigastric region, with corresponding **aminotransferase and alkaline phosphatase elevations**, is common; visualization of a **dilated common bile duct in the absence of stones** increases the likelihood of SOD. **Opioid** analgesics (eg, morphine) may cause sphincter contraction and precipitate symptoms of SOD, as seen in this patient.

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References:

1. [Sphincter of Oddi dysfunction: an evidence-based review.](#)