

EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE



Care Warriors

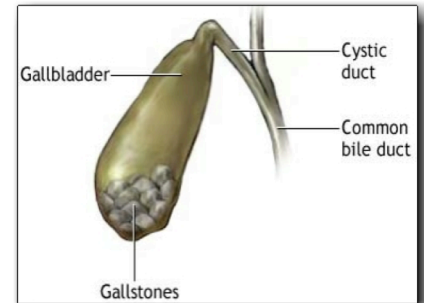
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Cholelithiasis & Cholecystitis

A 45-year-old obese female with past medical history of hypertension and hyperlipidemia presents to the ED with epigastric and right sided abdominal pain for the last 10 hours. She states that at first the pain came and went but now it is constant. She denies radiation of the pain. She also denies exacerbating or relieving factors. She experienced a similar episode of pain like this last year. She states that over the weekend she was eating a diet high in fried and fatty foods. She denies nausea, vomiting, diarrhea, back pain, and shortness of breath. The patient is afebrile and vitals are within normal limits. On physical exam, the patient's abdomen is soft, non-distended and no guarding is present. She does have abdominal tenderness to palpation in the epigastric region and RUQ. Which imaging modality is the most appropriate initial step to evaluate for the most probable cause of this patient's abdominal pain?

- A. Bedside Ultrasound of the abdomen
- B. Computed Tomography of the abdomen
- C. Cholescintigraphy (HIDA Scan)
- D. Endoscopy



Biliary Colic VS Cholecystitis

- Pain in colic reaches a crescendo then completely resolves, RUQ pain > 4-6 hours is suspicious for acute cholecystitis
- Constitutional Symptoms = more likely to be Acute Cholecystitis
- Colic patients do not have signs of peritonitis
- Patients with biliary colic have normal labs

EM Case of the Week is a weekly "pop quiz" for ED staff.

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

BROWARD HEALTH MEDICAL CENTER

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The correct answer is **A**. RUQ ultrasound has high sensitivity and specificity and is the test of choice when confirming disease of the gallbladder such as cholelithiasis.

Cholelithiasis is common and is seen in 6% of men and 9% of women in the United States. Although gallstones are commonly asymptomatic (incidental gallstones), patients can present with symptoms. The pain from symptomatic gallstones is typically referred to as biliary colic and this is considered uncomplicated gallstone disease. People with uncomplicated gallstone disease are at a higher risk of developing several complications including acute cholecystitis, cholangitis and gallstone pancreatitis.

DISCUSSION:

15-25% of patients with incidental gallstones will develop symptoms within 10-15 years of follow up. Patients typically present with biliary colic, normal physical exam, and normal laboratory tests. Despite the name, biliary colic pain is constant and classically described as an intense and dull discomfort in the RUQ and epigastrium with radiation to the back. Usually the pain is also associated with nausea, vomiting, and diaphoresis. The pain usually lasts at least 30 minutes with an entire attack lasting less than six hours. The pain from biliary colic is caused by contraction of the gallbladder as it attempts to force a stone out of the gallbladder which leads to an increase in intra-gallbladder pressure, resulting in ensuing pain. Once symptoms develop it is likely for them to recur. The patient is then at an increased risk for complications including cholecystitis, cholangitis and gallstone pancreatitis. Acute cholecystitis is a complication of cholelithiasis that involves right upper quadrant pain, fever and leukocytosis. This occurs when the cystic duct is obstructed and the gallbladder becomes inflamed. Some studies suggest that an additional irritant such as lysolecithin, is present as well, that leads to gallbladder inflammation. Patients will present with prolonged, constant, and severe RUQ or epigastric pain, guarding and a positive Murphy's sign. Pain is typically associated with a fever, nausea, vomiting and anorexia. Patients will also have a leukocytosis with a left shift.

Trans Abdominal Ultrasound: Gallstones appear as echogenic foci and cast an acoustic shadow. First test obtained. In acute cholecystitis one can see gallbladder wall thickening (>4-5mm), edema, or a sonographic Murphy's sign. A sonographic Murphy's sign is when a positive response is elicited when the ultrasound transducer is placed over the gallbladder. A systematic review found that ultrasound had an 88% sensitivity and 80% specificity.

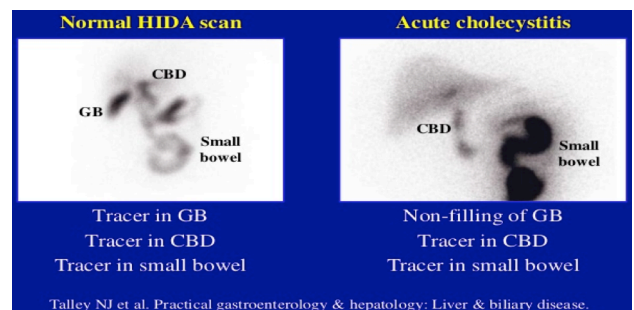


(http://www.lumen.luc.edu/lumen/MedEd/Radio/curriculum/Surgery/cholecystitis_list2.htm)

Radiograph: Gallstones are rarely seen on plain abdominal radiograph.

Computed Tomography: Gallstones may be seen on CT but most stones are isodense and do not appear on imaging.

Cholescintigraphy (HIDA scan)- A HIDA scan is indicated if the diagnosis remains uncertain after ultrasound. Technetium labeled hepatic iminodiacetic acid is injected intravenously and then taken up by hepatocytes and excreted into the bile. If the gallbladder is not visualized, then that means the cystic duct is obstructed. The test has a sensitivity of 90-97% with a specificity of 71-90%.



For a list of educational lectures, grand rounds, workshops, and didactics please visit BrowardER.com and click on the "Conference" link.

All are welcome to attend!

Warriors



<http://doctoreden.com/gallstones-cause/>

A) Cholesterol Stones (yellow to green): Associated with obesity, diabetes, advanced age, cirrhosis, cystic fibrosis, multiple pregnancies, OCP use, and Crohn's disease.

B) Pigment Stones: Black- Associated with hemolysis or alcoholic cirrhosis. Brown- Associated with biliary tract infection

C) Mixed Stones: Components of both cholesterol and pigment stones

MANAGEMENT:

Uncomplicated Gallstone Disease:

Acute pain management of biliary colic. This is achieved with ketorolac 30-60mg in a single IM dose, for patients with colic. Patients are then prescribed ibuprofen 400mg PO for subsequent attacks. Patients who have contraindications to NSAIDs or who do not receive adequate pain control can receive opiates such as morphine, hydromorphone or meperidine. It is also recommended that patients undergo definitive prophylactic therapy with elective cholecystectomy to prevent future attacks of colic.

Acute Cholecystitis:

Admit the patient to the hospital and start supportive care including IV fluids, electrolyte correction, and pain control with NSAIDs or opiates. Since secondary infection of the gallbladder can occur, some clinicians treat empirically with antibiotics. For patients with mild to moderate community-acquires cholecystitis, agents such as cefazolin, cefuroxime or ceftriaxone are recommended by the Infectious Diseases Society of America. Patients should also be kept NPO. Laparoscopic cholecystectomy for low-risk patients is considered the standard approach to patients with acute cholecystitis and is recommended during the same admission.

TAKE HOME POINTS

- 1/3 of patients with biliary colic develop acute cholecystitis within 2 years
- Biliary Colic is the cardinal symptom of gallstones and is 2/2 temporary obstruction of the cystic duct
- Pain in the RUQ that is constant with constitutional symptoms is likely to be acute cholecystitis
- RUQ Ultrasound is the test of choice for imaging acute cholecystitis and cholelithiasis
- Treatment of uncomplicated gallstone disease includes pain management and elective cholecystectomy, while treatment of acute cholecystitis includes hospital admission, IV fluids, bowel rest (NPO), IV antibiotics, analgesics and cholecystectomy



ABOUT THE AUTHOR

This month's case was written by Elizabeth Mortazavi. Elizabeth is a 4th year medical student from NSU-COM. She did her emergency medicine rotation and all of her 3rd year core rotations at BHMC from 2015-2017. Elizabeth plans on pursuing a career in Physical Medicine and Rehabilitation after graduation.

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