



Round : General surgery

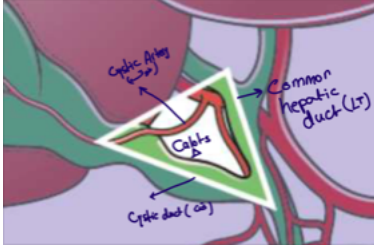
Group no : B3**.....**

Done By : Fatima abu assal

Gallbladder :

✨ is reservoir for bile located on the under surface of the liver and interior to the first part of the duodenum The body of Gallbladder is the largest part.

🌸 The arterial supply is cystic artery branch of right hepatic artery and the venous supply is the cystic veins drain directly into portal vein.



✨ The gallbladder has a storage capacity of 30-50 ml

✨ the bile is composed of 95% water and 5% bile salts

The liver excrete bile at rate 40ml/h

🌸 Bile acids are derived from policeman

(Cholilithiasis):

🌸 Acute episodic pain: Severe, sharp, colicky pain in the RUQ or epigastrium, often radiating to the back or right shoulder. Pain duration: Typically lasts 30 minutes to several hours (usually <6 hours).

most common surgical problem worldwide.

✨ More than 80% of patients have silent GB stones.

✨ Symptoms of GB stones usually develops when the stones reach more than 8mm.

🌸 Comonest complication is chronic cholecystitis.

✨ Vitamin K deficiency(in obstructive jaundice).

🌸 Squamous metaplasia and squamous cell carcinoma of gallbladder in long standing cases.

✨ F:M ratio is 2:1 in cholesterol and mixed but no six difference in pigment stones.

🌸 Most common type is a pure cholesterol.

🌸 Why in cholecystitis or biliary colic the pain radiate to right shoulder? because the peritoneal cavity of a gallbladder supplied by the right phrenic nerve and the sympathetic supply come from T5-T9 so the pain radiates to back below the scapula.

Type	Prevalence	Composition	Size	Shape	Color	Consistency	Location	Symptoms	Complications	Treatment
Cholesterol	80%	Cholesterol	2-10 mm	Round	Yellow	Soft	GB	Colic	Cholecystitis	Cholecystectomy
Pigment	10%	Bilirubin	1-5 mm	Irregular	Black	Hard	GB	Colic	Cholecystitis	Cholecystectomy
Mixed	10%	Cholesterol & Bilirubin	2-10 mm	Round	Yellow	Soft	GB	Colic	Cholecystitis	Cholecystectomy
Striped	1%	Cholesterol & Bilirubin	2-10 mm	Round	Yellow	Soft	GB	Colic	Cholecystitis	Cholecystectomy

✨ 15% of GB stones radiopaque (x-ray بقدر اشوفها على ال)

🌸 U/S is the most sensitive and specific test for gallstones

HIDA scan does not detect gallstones but it is useful for obstruction detection and reliable a bilirubin less than 5mg

🌸 HIDA scan most sensitive and specific test for acute cholecystitis

🌟 Pure cholesterol stones are radiolucen

🌸 Risk factors : drugs lower the cholesterol level like Crestor and labetalol #very aggressive diet #liver problems# terminal ileum problems like a Crohn's #OCPs because of high estrogen #long-term IV nutrition.

🌟 For patients with uncomplicated Cholelithiasis bloodwork results usual are normal !!

🌟 Choledocholithiasis can manifest it with only elevation of serum ALP or bilirubin

🌟 Abnormally transaminases and symptomatic GB stones 50% of cases)

🌸 Prophylactic cholecystectomy : in calcified gallbladder # GB stones more than 2 or 3 cm in diameter # elderly diabetic patient

Indications for "Prophylactic" Cholecystectomy	
Group	Comments
Children with gallstones	Because of long-term exposure to gallstones
Partially obese patients prior to bariatric surgery. Controversial for gallstone-free patients & asymptomatic gallstone patients	High risk of forming cholesterol gallstones and developing symptoms during rapid weight loss
Patients with large gallstones (≥ 3 cm)	Increased risk for gallbladder cancer
A "porcelain" gallbladder or gallbladder polyps rapidly growing (≥ 1 cm)	Increased risk for gallbladder cancer
Asymptomatic gallstones (even small) and gallbladder polyps (even <1cm)	High risk of gallbladder cancer
Native Americans with gallstones	Increased risk for gallbladder cancer
Gallstone patients with sickle cell anemia <i>Prior to transfusion</i>	Formation of pigment gallstones due to chronic hemolysis. Patients may become symptomatic with recurrent episodes of abdominal pain
Coincidence of gallstones and gallbladder dysmotility	Increased risk of pancreatitis
Gallbladder polyps ≥ 10 mm and/or other risk factor for malignancy (Age ≥ 60, PSC, Indian ethnicity, sessile polyps)	Increased risk for gallbladder cancer

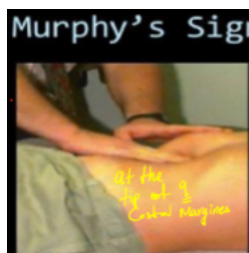
Chronic cholecystitis:

🌸 The commonest symptom is fatty or biliary dyspepsia

🌟 Pain duration:** Often mild # dull # and lasts longer than biliary colic # Fever is Rare.

🌸 Elective laparoscopic cholecystectomy Is the best treatment Choice

Acute cholecystitis:

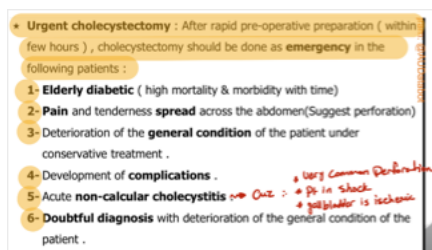


🌸 Boas sign : Area of hyperaesthesia between 9 and 11 ribs posterior on right side below the scapula

D.D : of pain in the right hypochondrium			
1- Hepatobiliary diseases :			
	Biliary colic	Acute cholecystitis	Cholangitis
Pain	pain in right hypochondrium		
Duration of pain	usually less than 6 hours	usually more than 6 hours	Few days
Fever	no fever	low grade fever	high fever & rigor
leucocytosis	no leucocytosis	Mild leucocytosis	Severe leucocytosis
jaundice	no jaundice	usually no jaundice	Jaundice (Charcot's triad)

Management: attack اذا اجى المريض خلال ٣ ايام من ال

مباشرة عمليه lap.chole لكن اذا اجي بعد هيك لازم امشي conservative treatment لمدة ٦ اسابيع عشات بتكون ال
 tissue friable and there is friable addhesion (risk of bleeding)
 خلال هاد الوقت ممنوووع اعطي مورفين لانه رح يعمل oddi spasm
 بعطي مضاد ضد -Ve aerobes و اكثر واحد مهم هو cephalosporin
 طيب بالنسبة للحالات الطارئه : اي دليل على gangrene or perforation بدخل عمليه مباشرة لو كان fit بس اذا مش
 fit بعمل drainage (cholesystostomy) و بعد 6 اسابيع بعمله عمليه

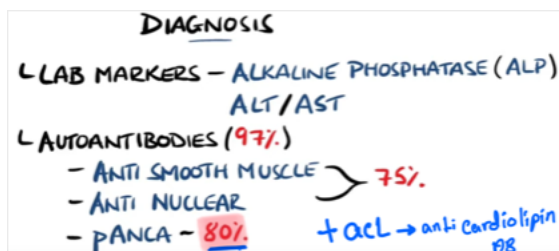


Choledocholithiasis and cholangitis :

- ✦ increase with age (50%)
- ✦ You will find biliary mud as complication
- ✦ In advanced stages (white bile) (intrahepatic duct pressure so no bile secretions and just mucus (as the bile duct is already covered by mucus membrane)
- 🌸 The commonest cause of death in untreated cases is Endotoxic shock leading to hepato-renal failure (No bile so increase in intestinal flora)
- ✦ Coagulation disorders (no bile salts reach the intestine so no absorption of V.k (soluble vitamin))
- 🌸 Charcot triad and Raynaud Pentad in cholangitis
- ✦ Management: stones=> endoscopic papillotomy and stone extraction followed by lap.chole
- ✦ Cholangitis: ciprofloxacin 250mg 12hrs alternative mezlocillin 3g 4hrs with metronidazole or gentamicin or both

Primary sclerosing cholangitis:

- ✦ Inflammation , fibrosis and narrowing of medium and large ducts of intra- and extra hepatic biliary tree most common in Males 20-40



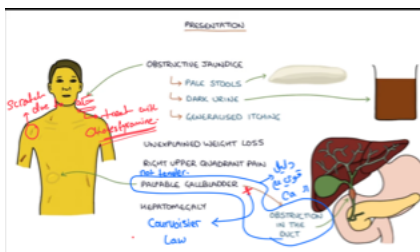
- 🌸 associated with HLA-B8 DR3/ DR4 and may be caused by microbiome
- ✦ The patient is in severe fatigue
- 🌸 Associated with patients with ulcerative colitis 70% (مهم جدا)
- ✦ Can cause colorectal dysplasia and cancer



Carcin



معروف الاعراض اللي بتطلع زي اعراض التسكير



al for localized carcinoma of the gallbladder is a
drop dramatically with more extensive disease
the bile ducts is curable by surgery in < 10% o

1. A

a.

- 1. Answer: a.** The patient appears to have cholecystitis; an ultrasound would help establish the diagnosis. Ultrasound is much more sensitive for cholecystitis than CT and can better assess for gallstones. A HIDA scan may be useful in some cases of equivocal cholecystitis, but an ultrasound should always be ordered first. Antibiotics and IV fluids are reasonable steps, but a clear diagnosis is needed first. While this patient may indeed need cholecystectomy, the diagnosis must be confirmed and there is no need to operate emergently. There are no apparent contraindications to operation in this otherwise healthy patient, so a percutaneous cholecystostomy tube may not be appropriate.

2. An inpatient consultation was placed for a 30-year-old obese woman who recently gave birth via C-section and presented to the hospital with acute abdominal pain, nausea, and vomiting. She is nontoxic at presentation with tenderness to her epigastrium and has laboratory data showing no leukocytosis, a bilirubin of 1.5 mg/dL, mild elevations of amylase and lipase, and an abdominal ultrasound showing numerous small gallstones without gallbladder wall thickening, pericholecystic fluid, CBD stone, or dilation. After pain control, initiating NPO status, and fluid resuscitation, what is the next best step?

- Consultation to gastroenterology for an ERCP to evaluate the common bile duct and perform a sphincterotomy
- Obtain an MRCP to evaluate the biliary tree
- Schedule the patient for open cholecystectomy after resolution of biochemical evidence of jaundice and pancreatitis
- Schedule the patient for laparoscopic cholecystectomy after resolution of abdominal pain
- Discharge the patient after resolution of symptoms and laboratory abnormalities

3. A 60-year-old male with coronary artery disease and congestive heart failure with an ejection fraction of 25% is in the medical intensive care unit recovering from an ST-elevated myocardial infarction complicated by hospital-acquired pneumonia. Recently, the patient became febrile with respiratory distress requiring mechanical ventilation. He has a leukocytosis of 17,000 cells/mm³, a bilirubin level of 2.3 mg/dL, and an abdominal ultrasound showing a dilated gallbladder with wall thickening and local inflammation, but with no stones or any dilation of the intra- or extrahepatic ducts. After initiation with antibiotics, what is the next best step in managing this patient?

- Perform a percutaneous biliary drain to decompress the biliary tree
- Perform a laparoscopic cholecystectomy with possible cholangiography
- Perform an ERCP to decompress the biliary system
- Obtain an MRCP to delineate the biliary anatomy and level of obstruction
- Perform a cholecystostomy tube

4. During workup for symptomatic cholelithiasis in a 50-year-old male, an ultrasound showed an incidental mass in the gallbladder. After laparoscopic cholecystectomy, pathology reports adenocarcinoma that resides in the lamina propria. Which of the following is the best management for this patient?

- Counseling for extended resection of the gallbladder fossa as well as periportal lymph node dissection
- Serial annual ultrasound examination for 5 years
- MRCP to evaluate the biliary system for additional pathology
- Obtain serial CA19-9 and CEA levels
- Pathologic examination of the cystic duct margin, and if negative,

5. A surgeon at a small ambulatory surgical center reports that during laparoscopic cholecystectomy for acute cholecystitis he thinks the common bile duct was transected. The procedure is not yet completed and he calls a hepatobiliary surgeon at a tertiary care center asking from the operating room for advice regarding further management. What should be the next recommendation?

- Place a percutaneous drain near the dissection, close the incisions, and transfer the patient to the specialist
- Perform an intraoperative cholangiogram to evaluate the level of injury
- Complete the cholecystectomy and schedule the patient to be evaluated by the hepatobiliary surgeon in clinic
- Convert to an open procedure and attempt a choledochojejunostomy
- Convert to an open procedure and attempt a primary repair of the injury

6. A 58-year-old female with biliary colic undergoes ultrasound demonstrating a 2.2 cm gallbladder polyp. CT scan is performed without any additional findings. No prior abdominal operations. The appropriate management is:

- Percutaneous biopsy
- Radical cholecystectomy
- Laparoscopic cholecystectomy
- Repeat ultrasound in 6 months
- PET scan

2. Answer: d. This woman likely has cholelithiasis and has passed a gallstone. In a nontoxic patient with a mildly elevated bilirubin, laparoscopic cholecystectomy with intraoperative cholangiography is reasonable to perform. An ERCP is probably not immediately necessary because she is nontoxic, her bilirubin is only mildly elevated, and no choledocholithiasis was seen on ultrasound. An MRCP would not be therapeutic though it might provide a little more information. Open cholecystectomy is not necessary and laparoscopic removal should be attempted. Generally, patients with cholelithiasis should undergo cholecystectomy during the index admission to prevent additional admissions for choledocholithiasis and minimize the chance for gallstone pancreatitis or biliary obstruction and cholangitis.

Case of Very ill Pt.

A "cholecystostomy" is a medical procedure in which a tube is inserted into the gallbladder to drain bile, usually to treat acute cholecystitis (inflammation of the gallbladder) when surgery is not immediately possible. It is commonly used as a temporary measure, especially in critically ill patients who may not tolerate a cholecystectomy (surgical removal of the gallbladder).
 Indications - "Acute cholecystitis" in high-risk surgical patients. - Obstruction of the biliary system causing infection or bile buildup. - As a preparatory step for definitive surgery later. - Palliative care in some cancer patients.
 Procedure Types 1. "Percutaneous cholecystostomy" - A minimally invasive procedure guided by ultrasound or CT. - A catheter is placed through the abdominal wall into the gallbladder. 2. "Open surgical cholecystostomy" - Performed in cases where imaging guidance is not suitable. - Requires direct incision into the gallbladder.
 Complications - Infection or abscess formation. - Bile leakage. - Tube dislodgement or blockage. - Injury to nearby organs.
 Follow-Up - Patients may need additional imaging (e.g., CT, ultrasound) to monitor the catheter. - Definitive treatment, like a cholecystectomy, is often planned once the patient's condition improves. Let me know if you'd like detailed sources or further explanation!

3. Answer: e. This patient has acalculous cholecystitis. Decompression of the gallbladder is necessary and probably best accomplished with cholecystostomy tube rather than LC in this very ill patient. Biliary drainage via percutaneous drainage or ERCP is not indicated in the absence of cholangitis, and a relatively low bilirubin and lack of ductal dilation make cholangitis less likely. This patient may not tolerate a general anesthetic very well, so laparoscopic cholecystectomy is not the best choice in this patient. MRCP may provide some additional information, but without any other markers for choledocholithiasis, the utility is limited.

4. Answer: e. This patient has a T1 gallbladder cancer isolated to the mucosa. Cholecystectomy alone is sufficient in this case, but the cystic duct margin should be evaluated because of the risk of spread down the biliary system, though unlikely. Additional imaging, including serial ultrasounds or MRCP are unnecessary. CA19-9 or CEA may be useful for following a patient with a high risk of recurrence, but that risk is low in this patient.

5. Answer: a. Patients with a biliary injury should be managed by a hepatobiliary specialist, hence d and e are incorrect answers. Attempt to complete the cholecystectomy risks additional injury and outpatient referral is inappropriate. Cholangiogram could be performed, but in this setting, is probably best performed by the hepatobiliary specialist.

6. Answer: c. Gallbladder polyps greater than 1 cm should be removed via cholecystectomy due to increased risk for underlying malignancy. There is no role for radical cholecystectomy in the absence of a gallbladder cancer. Biopsy is not indicated, and observation is not appropriate because of malignant risk. PET scan would not be helpful in the absence of suspected malignancy and would not be sensitive for detecting underlying cancer.