

chills is subjective of shivering }
Rigor is objective of shivering } → First to Appear Then Fever starts

إذا اجاب مرينف عنده Chills و Rigor يتكون حرارته طبيعية بعدين بتطلع الحرارة لله

Surgical Jaundice

يعني الصفار الي يعالج بالجرحة

- 4F 1- ① female
② fertile
③ fasting
④ شقرة^

وحدة شقرة حامل عمرها 40

Cholelithiasis

EPIDEMIOLOGY & Risk factor

- ▶ **Age** — Age is a major risk factor for the gallstones. Gallstones are exceedingly rare in children except in the presence of hemolytic states; in addition, less than 5 percent of all cholecystectomies are performed in children. Age 40 appears to represent the cutoff between relatively low and high rates of cholecystectomies.
- ▶ **Sex** — As noted above, a higher prevalence of gallstones has been observed in women in all age groups . The difference between women and men is particularly striking in young adults. One study found a female-to-male ratio of 2.9 between the ages of 30 to 39 years; the ratio narrowed to 1.6 between the ages of 40 to 49 years and 1.2 between the ages of 50 to 59 years . The higher rates in young women is almost certainly a result of pregnancy and sex steroids.
- ▶ **Pregnancy** — Pregnancy is a major risk factor for the development of cholesterol gallstones. The risk is related to both the frequency and number of pregnancies. In one report, for example, the prevalence of gallstones increased from 1.3 percent in nulliparous females to 12.2 percent in multiparous females. Another study recruited 272 women in the first trimester of pregnancy . The incidence of new biliary sludge and gallstones was 31 and 2 percent, respectively.

Choledocholithiasis

EPIDEMIOLOGY & Risk factor

- ▶ Oral contraceptives and estrogen replacement therapy
- ▶ Family history and genetics
- ▶ Obesity
- ▶ Rapid weight loss
- ▶ Diabetes mellitus
- ▶ Serum lipids
- ▶ Cirrhosis
- ▶ drugs (ceftriaxone)
- ▶ Crohn disease *causes fistula → ↑ Bile → cause stone*
- ▶ Hemolysis
- ▶ RECURRENT BILIARY INFECTION .
- ▶ large bile ducts and periampullary diverticular are at elevated risk for the formation of primary bile duct stones

Cholelithiasis

PROTECTIVE FACTORS

- ▶ **Statins**
- ▶ **Ascorbic acid**
- ▶ **Coffee**
- ▶ **Vegetables**
- ▶ **Poly- and monounsaturated fats.**

CLINICAL MANIFESTATIONS

Jaundice Appear on pt on 2.5 and more (in sclera)

▶ Most patients with choledocholithiasis are **symptomatic**, although occasional patients are asymptomatic.

▶ The most common cause of **painless obstructive Jaundice is CBD stones.**

موضع سوال

سوال

causes of painless jaundice ① stone (most common)
② Tumor

Note:- every tumor cause painless jaundice But Not all painless jaundice caused By Tumor

دراوند ابو داجوح

painless jaundice is caused By HCC or Biliary obstruction or Biliary CA
so u need to Ask About Alarming symptoms ① weight loss of 10% for 6 month

② Night sweats

③ Anorexia

Physical examination

- ▶ On physical examination, patients with choledocholithiasis often have right upper quadrant or epigastric tenderness. Patients may also appear jaundiced.
- ▶ **Courvoisier's sign** (a palpable gallbladder on physical examination) may be seen when gallbladder dilation develops because of an obstruction of the common bile duct.
- ▶ **Courvoisier's Law** .

Laboratory tests

The most sensitive Bilirubin اهم واحد هو ال

Alkaline phosphatase و GGT من

more than 2.5 Bilirubin in Day time in sclera → jaundice appear

راوند ابو راجوح

• prognostic factor for liver Test is prothrombin Time (PT)

- ▶ Serum ALT and AST concentrations are typically elevated early in the course of biliary obstruction.
- ▶ Later, liver tests are typically elevated in a cholestatic pattern, with increases in serum bilirubin, alkaline phosphatase, and GGT exceeding the elevations in serum ALT and AST.
- ▶ An elevation in serum bilirubin had a sensitivity of 69 percent and a specificity of 88 percent for diagnosing a common bile duct stone. For elevations in serum alkaline phosphatase, the values were 57 and 86 percent, respectively.
- ▶ normal liver tests play a greater role in excluding choledocholithiasis than elevated liver tests play in diagnosing stones.

Complicated choledocholithiasis

P.t. chills with Rigor, He will have Normal Temp (No fever)
Fever start After chills and Rigors Disappear

- ▶ The two major complications associated with choledocholithiasis are **pancreatitis** and **acute cholangitis**.
- ▶ Patients with **acute cholangitis** often present with **Charcot's triad** (fever, right upper quadrant pain, and jaundice) and leukocytosis. In severe cases, bacteremia and sepsis may lead to hypotension and altered mental status (**Reynolds' pentad**)
Reynolds :- Charcot triad + sepsis + hypotension + Altered mental status
- ▶ Long-standing biliary obstruction from various causes, including common bile duct stones, may result in liver disease that may progress to cirrhosis, a phenomenon referred to as secondary biliary cirrhosis.

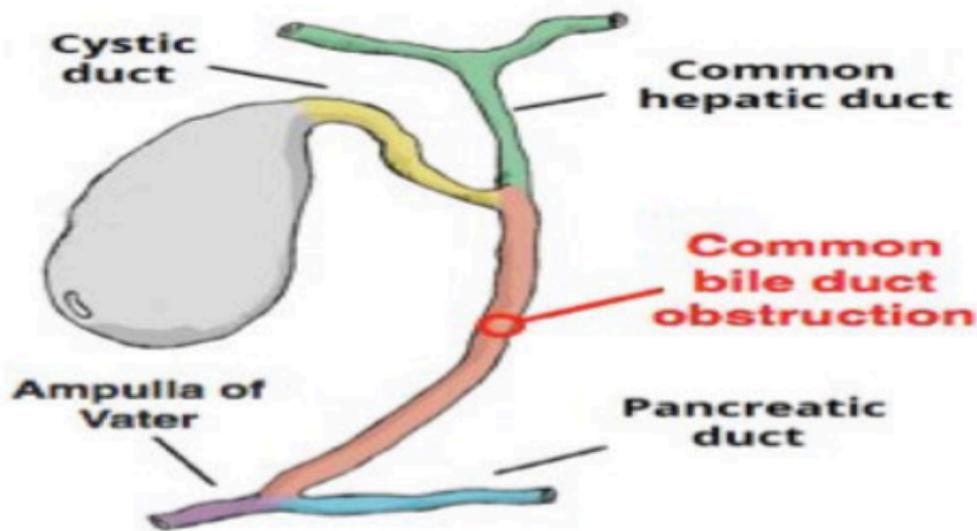
Charcot's triad: 3 Cs

Bacterial colonization due to stasis of obstruction of bile

Acute (Ascending) Cholangitis

A clinical syndrome characterized by **fever**, **jaundice**, and **abdominal pain** that develops as a result of **stasis** and **infection** in the **biliary tract**.

Bacterial infection in a patient with biliary obstruction



Charcot's Triad
Fever
Abdominal pain
Jaundice

Reynolds pentad
Fever
Abdominal pain
Jaundice
+
Confusion
Hypotension

Management

- Broad-spectrum antibiotics (e.g. Ampicillin-sulbactam)
- Biliary drainage (e.g. ERCP)

DIAGNOSIS

- ▶ We use the results of laboratory tests and transabdominal ultrasound to stratify a patient as high risk, intermediate risk, or low risk for having choledocholithiasis.
- ▶ Subsequent management varies depending on the patient's level of risk whether low , Intermediate and high .

Diagnosis

Risk assessment

the American Society for Gastrointestinal Endoscopy (ASGE)

► Very strong" predictors

- The presence of a common bile duct **stone** on **transabdominal ultrasound**
- Clinical acute cholangitis
- A serum bilirubin **greater than 4 mg/dL** .

► "Strong" predictors

- A **dilated** common bile duct on **ultrasound** (**more than 6 mm in a patient with a gallbladder in situ**)
- A serum bilirubin of **1.8 to 4 mg/dL**

► Moderate" predictors

- Abnormal liver biochemical test other than bilirubin**
- Age older than 55 years
- Clinical gallstone pancreatitis

Diagnosis

Risk assessment

the American Society for Gastrointestinal Endoscopy (ASGE)

- ▶ **High risk**
 - At least one very strong predictor **and/or**
 - Both strong predictors
- ▶ **Intermediate risk**
 - One strong predictor **and/or**
 - At least one moderate predictor
- ▶ **Low risk**
 - No predictors

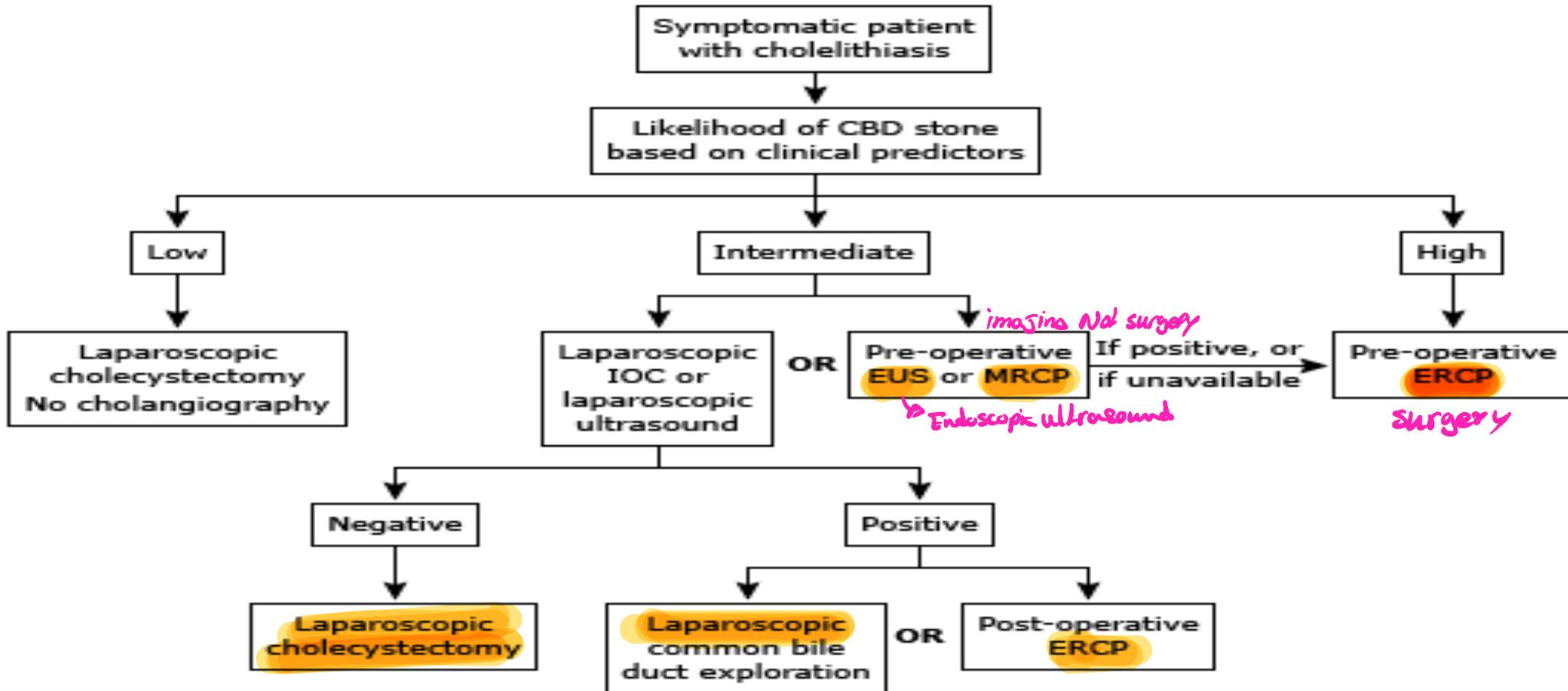
Diagnosis

→ magnetic resonance cholangiopancreatography (contrast ١٥ ٢٠١٥ Bile ١١ ١٥ ١٥١٥).

- ▶ MRCP is preferred for many patients because it is noninvasive. However, the sensitivity of MRCP may be lower for small stones (<6 mm), and biliary sludge can be detected by EUS, but generally not by MRCP. As a result, **EUS should be considered in patients in whom the suspicion for choledocholithiasis remains moderate to high despite a negative MRCP.**

→ Endoscopic ultrasound

management of choledocholithiasis

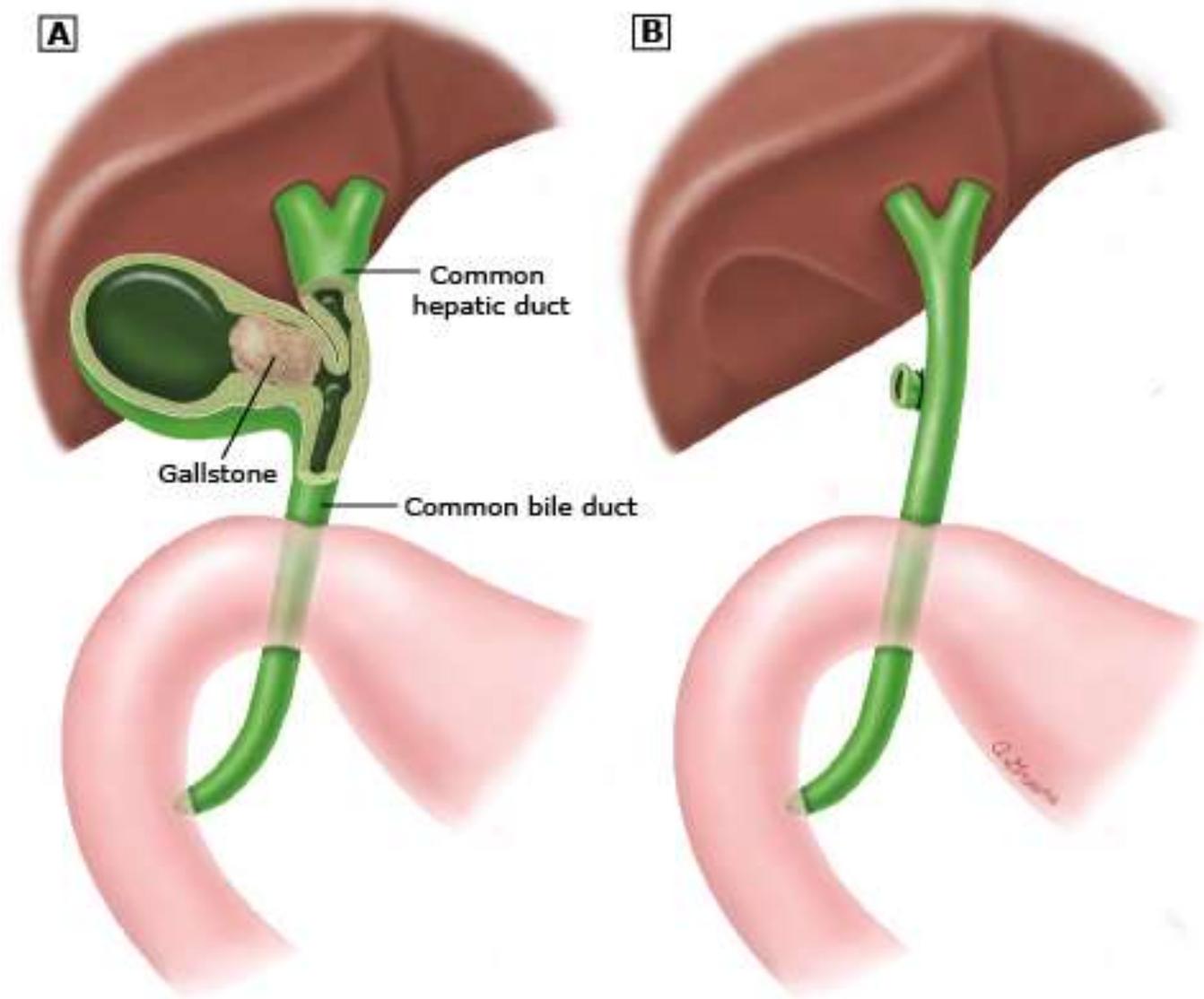


Mirizzi syndrome

- Stone on Neck of gall Bladder which compromise Hepatic Duct
- Ass with gallbladder CA

- ▶ defined as common hepatic duct obstruction caused by an extrinsic compression from an impacted stone in the cystic duct or Hartmann's pouch of the gallbladder.
- ▶ Mirizzi syndrome has been associated with gallbladder cancer . It has been hypothesized that recurrent inflammation and biliary stasis may predispose to both conditions.

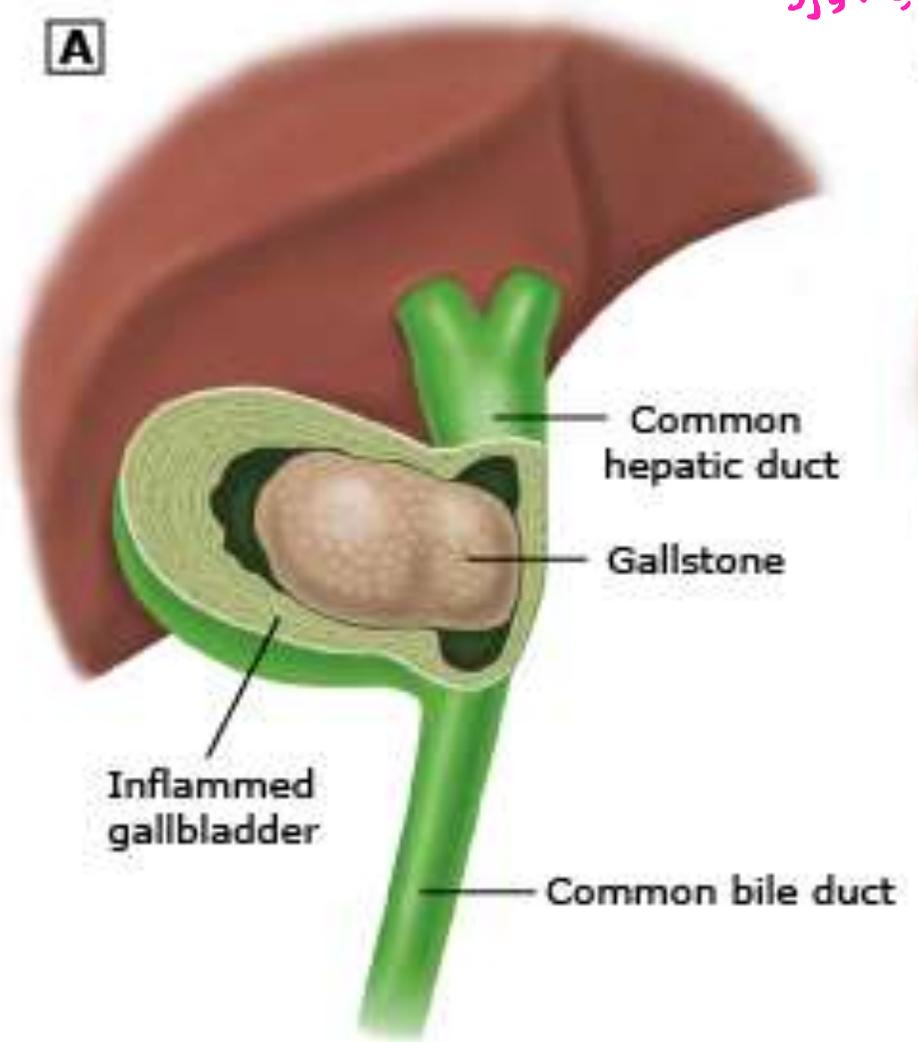
Mirizzi syndrome



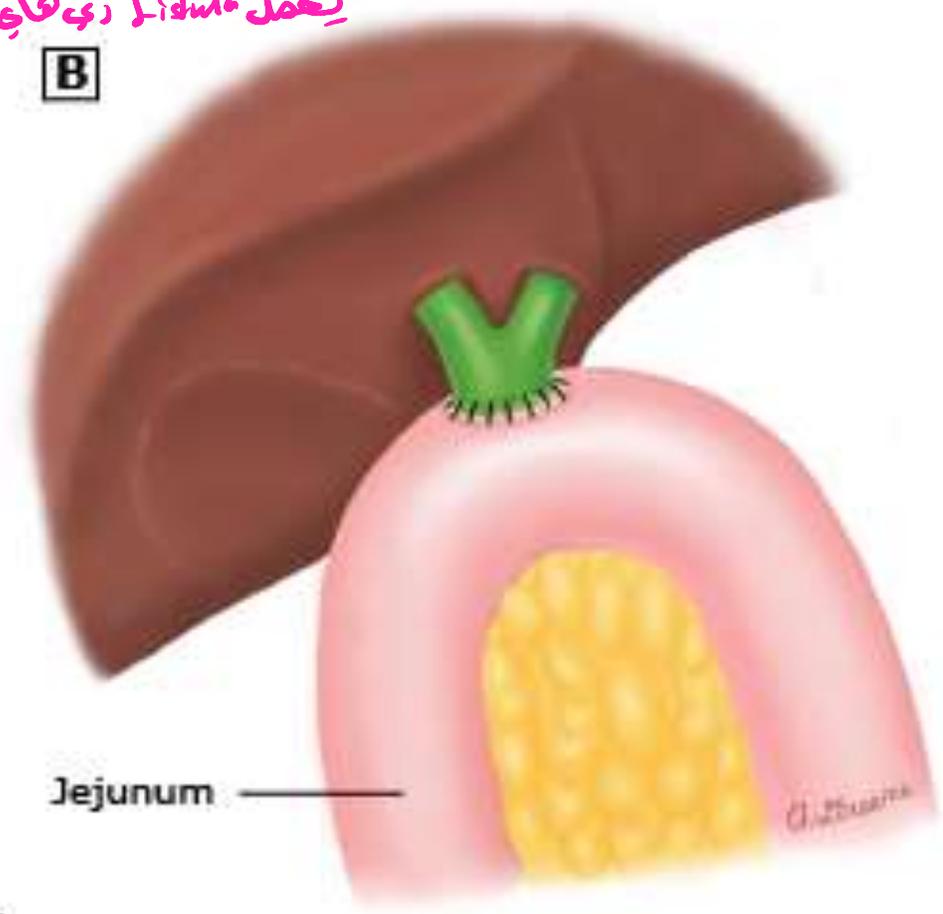
Difficult cholecistomy
عشان Mimry ممكن
يعمل fistula زي حاجه لهورى

ممكنها داخله
شوي فكار
Duct

A



B



Mirizzi syndrome

CLASSIFICATION

- ▶ Mirizzi syndrome has been classified based on the presence and extent of a cholecystobiliary fistula