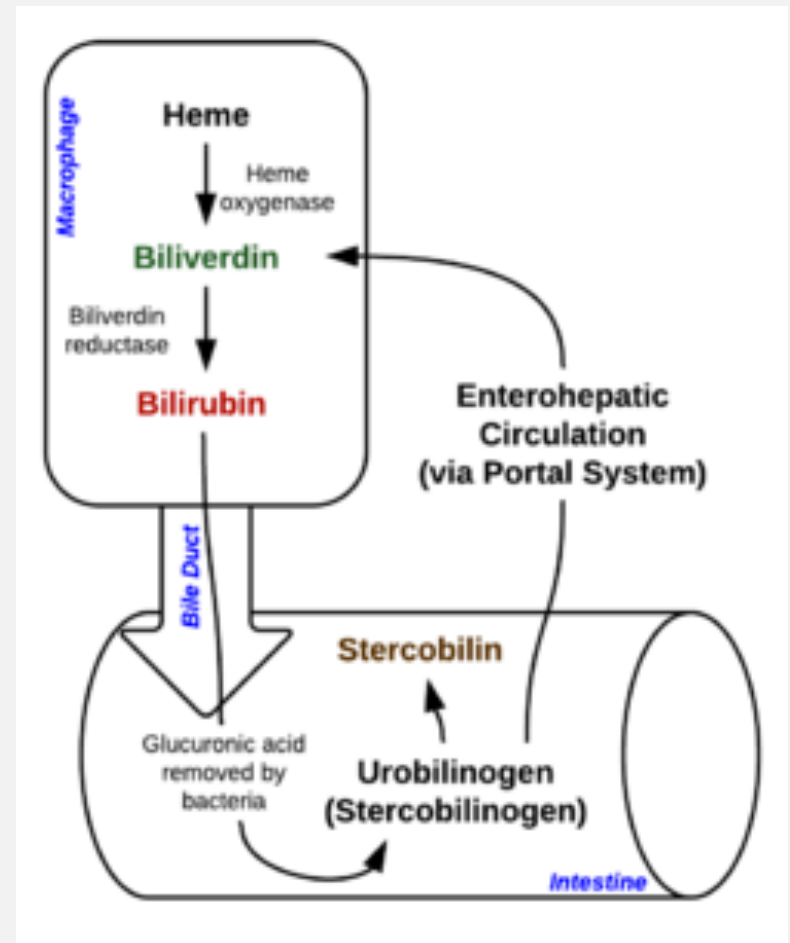


ICTER

# INTRODUCTION

- Bilirubin overproduction,
- Impaired bilirubin conjugation,
- Biliary obstruction,
- Hepatic inflammation.



## UNCONJUGATED HYPERBILIRUBINEMIA MAY BE CAUSED BY

- Hemolysis
- Extravasation of blood into tissue
- Stress situations (eg, sepsis) leading to increased production of bilirubin
- Impaired hepatic bilirubin uptake
- Impaired bilirubin conjugation

## CONJUGATED HYPERBILIRUBINEMIA MAY BE CAUSED BY

- Biliary obstruction (eg, gallstones, pancreatic or biliary malignancy, parasites)
- Hepatitis (Viral, Alcoholic,..)
- Nonalcoholic steatohepatitis
- PBC
- Drugs and toxins

## CONJUGATED HYPERBILIRUBINEMIA MAY BE CAUSED BY

- Ischemic hepatopathy
- Dubin-Johnson syndrome, Rotor syndrome
- Total parenteral nutrition
- Postoperative jaundice
- Intrahepatic cholestasis of pregnancy
- End-stage liver disease

## ADULTS

- Cholelithiasis
- Tumors,
- primary sclerosing cholangitis (PSC),
- Parasitic infections,
- AIDS cholangiopathy,
- Pancreatitis, and
- strictures after invasive procedures.

## CHILDREN

- Choledochal cysts and cholelithiasis are most common.
- Also tumors

## NEONATES AND YOUNG INFANTS

- Important obstructive processes:
- Include biliary atresia
- Choledochal cysts



## EMERGENCIES

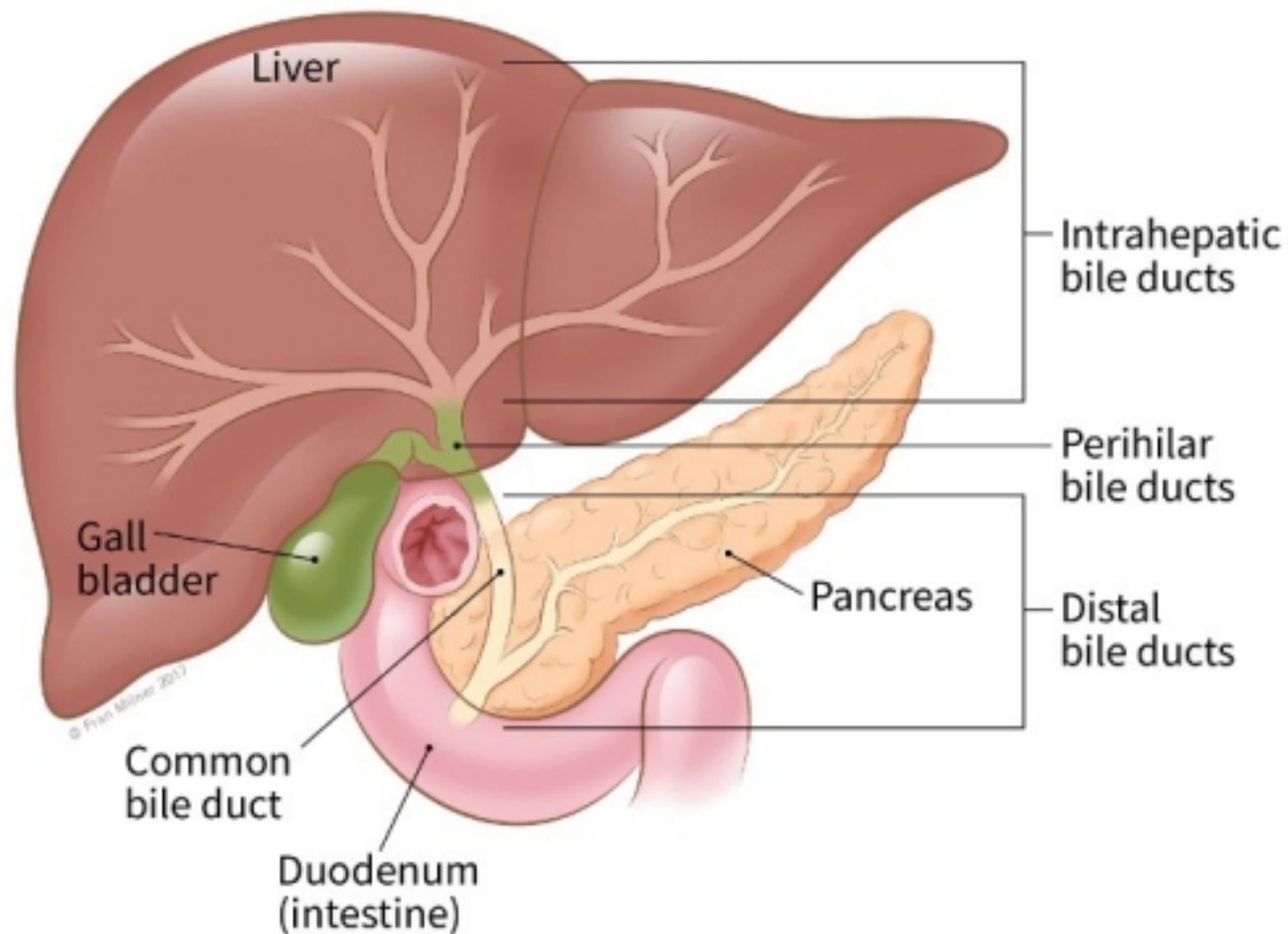
- Massive hemolysis (Sepsis or falciparum malaria)
- Cholangitis
- Fulminant hepatic failure

## BILIARY PAIN PROPERTIES

- RUQ Or epigastric Pain
- History of pain
- Radiation
- Gall Stone: 80 symptom free, 2,3 symptomatic per year.
- 3-5% of symptomatic patients will be complicated each year
- Last 1-5 hours
- Night or Fatty meal ( 50% )

## CONTINUE

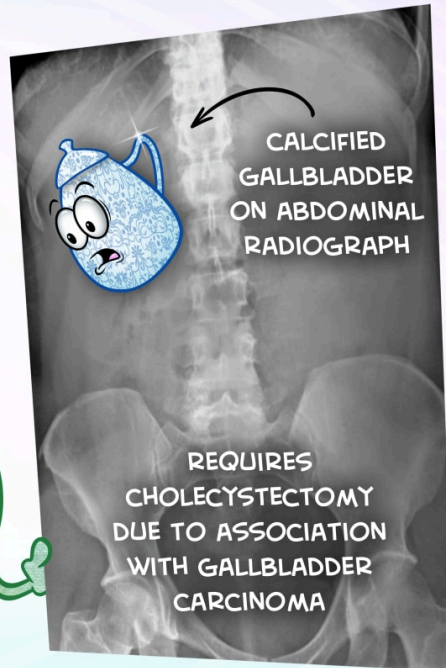
- Pain Not resolving after 24 hours,
- Acute cholecystitis / Impacted stone
  - **Cholecystitis**
  - **Cholangitis**
- **Choledocholithiasis**
  - **Cholelithiasis**



# COURVOISIER SIGN

## PORCELAIN GALLBLADDER

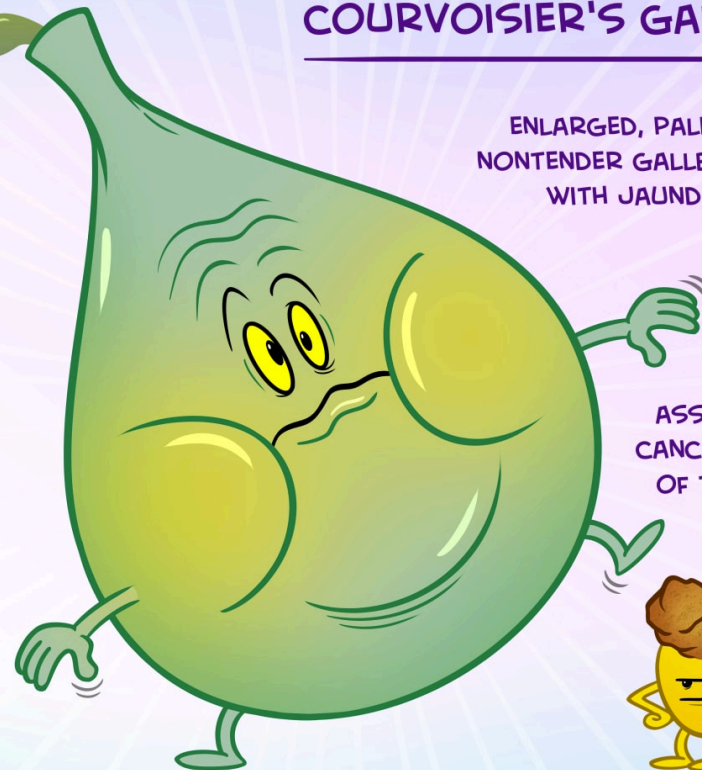
CHRONIC  
CHOLELITHIASIS  
AND CHOLECYSTITIS  
CAUSES CALCIFIED  
SCARRING



REQUIRES  
CHOLECYSTECTOMY  
DUE TO ASSOCIATION  
WITH GALLBLADDER  
CARCINOMA

## COURVOISIER'S GALLBLADDER

ENLARGED, PALPABLE  
NONTENDER GALLBLADDER  
WITH JAUNDICE



ASSOCIATED WITH  
CANCER OF THE HEAD  
OF THE PANCREAS

## LAB

- AST
- ALT
- ALP
- → GGT
  
- INR (Vit K effect)

## NOW CONJUGATED BILIRUBIN ELEVATION

- Biliary obstruction, intrahepatic cholestasis, hepatocellular injury, or an inherited condition

