ANPH 252: PATHOLOGIES GALLBLADDER

Cholelithiasis

- Chole- meaning “bile”
- Lithiasis-meaning “stones”

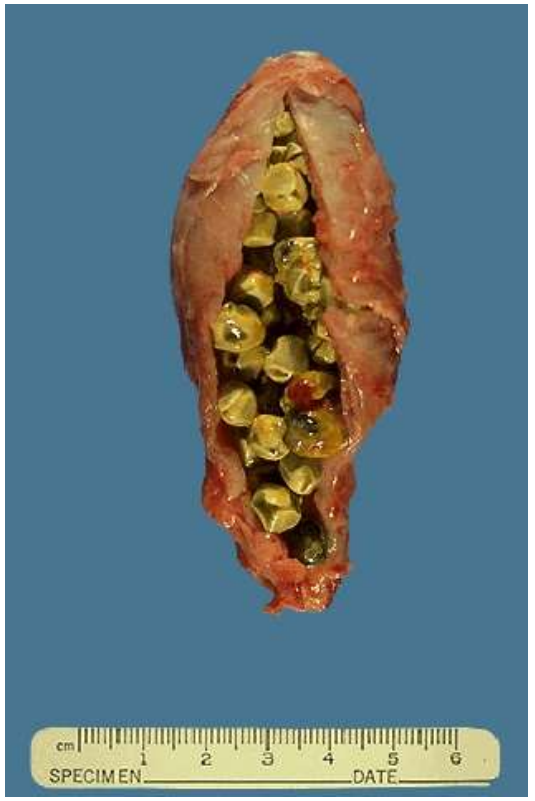
Cholelithiasis (gallstones)

- Defined as: presence of stones in the gallbladder

- Gallstones: solid clumps of material that form in the gallbladder
  - Cholesterol stones: composed mainly of cholesterol, majority of stones are this type
  - Pigment stones: composed mainly of bilirubin and calcium salts from bile
  - Mixed stones: contain cholesterol calcium carbonate, bilirubin and other bile pigments, least common type

Cholelithiasis

- Gallstones often form when:
  - Cholesterol concentration in bile is higher than bile salts and lecithin
    - Cholesterol precipitates out of the bile
  - Gallbladder doesn't empty regularly
    - Chemically imbalanced/cholesterol laden bile remains in the gallbladder for long periods of time
    - Extreme low-fat diets



Cholelithiasis

- Individuals with high BMI (obese) have livers that produce more cholesterol
  - Risk of gallstone development is higher
- Rapid and significant weight loss greatly increases the risk of gallstone formation
  - Bariatric surgical procedures
- Risk factors are: family history, excessive weight, >40 years old, female who has had children
- FFF

Cholelithiasis

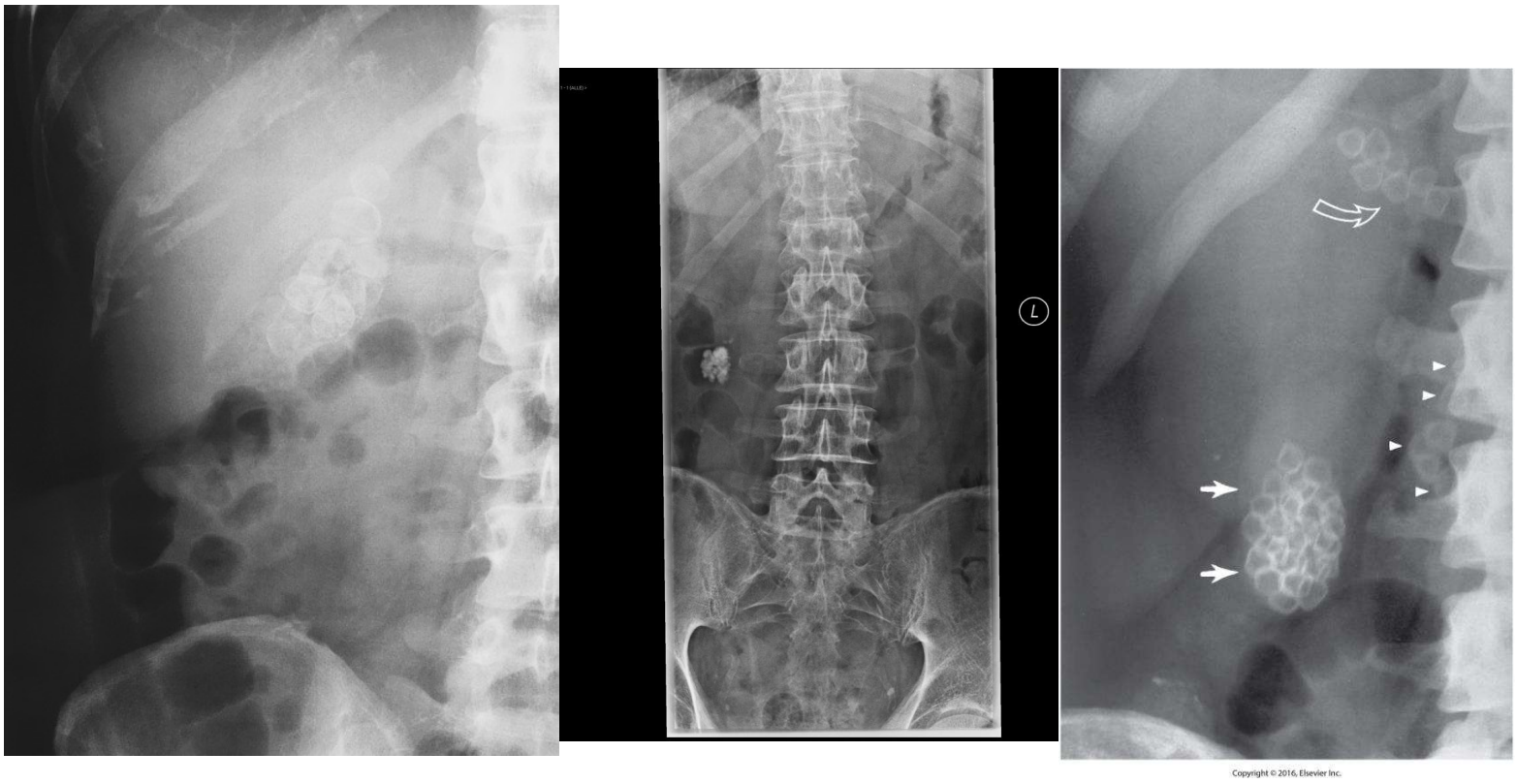
- Can be asymptomatic for a long time
- When the gallbladder or ducts contract, the sharp crystals can cause acute pain to the right upper quadrant
- Symptoms include: RUQ pain (often after a meal), nausea, vomiting

Cholelithiasis

- Best visualized with ultrasound
- Cholesterol is not radiopaque, so most stones are not visible on x-ray without contrast
- Some stones may contain calcium, which may be seen on x-rays, often an incidental finding

Gallstones

https://radiopaedia.org/cases/gallstones-6



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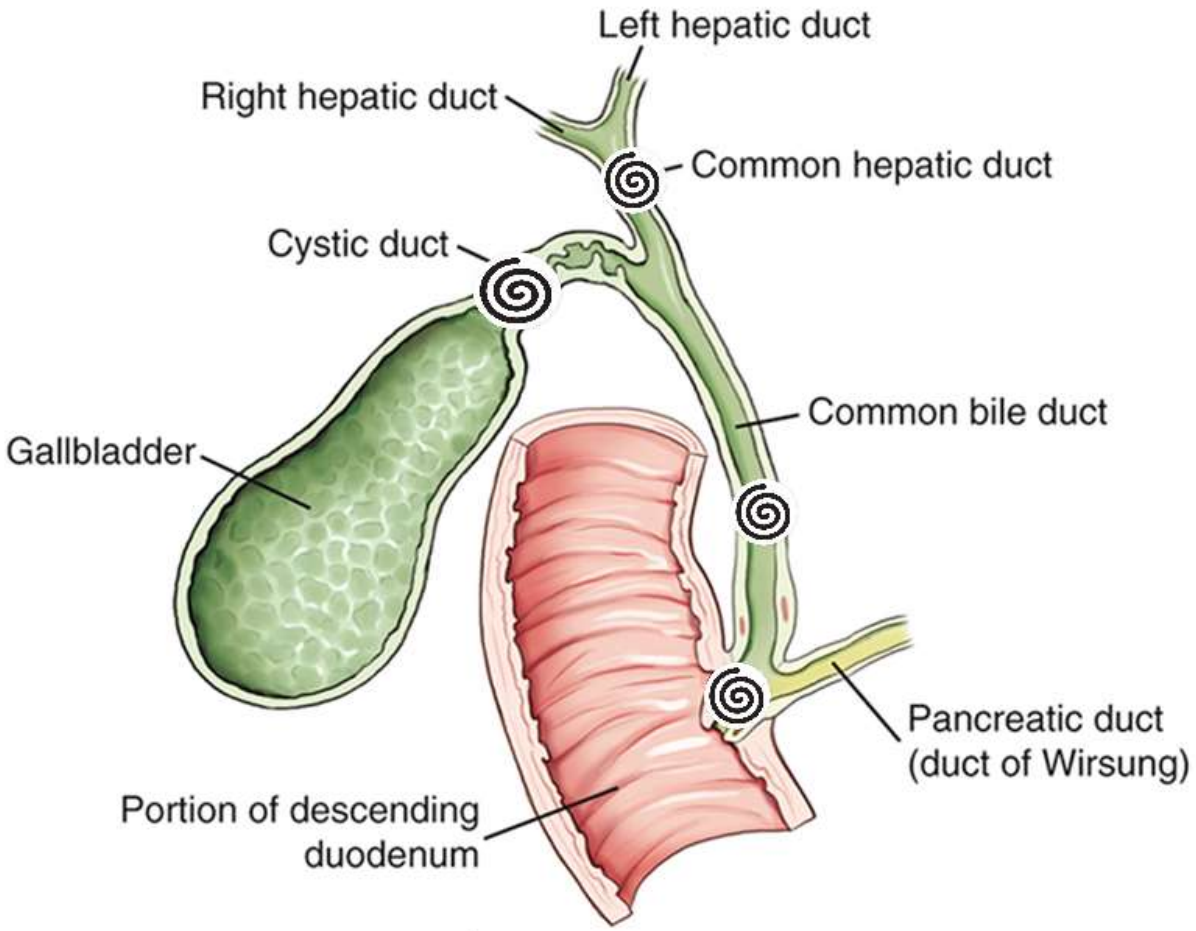
- Cholelithiasis can lead to **acute cholecystitis**

Cholecystitis

- Inflammation of the gallbladder
- Almost always (95%) caused by when gallstone(s) cause an obstruction of the cystic duct
- Small stones are more problematic than large stones
- Stones can damage mucosal layers of the duct and allow bacteria to enter tissues

- Acute Cholecystitis
  - Usually caused by blockage of the cystic duct (or neck) doesn't allow bile to flow into the CBD
    - Bile begins to irritate lining of gallbladder and it becomes inflamed
  - Obstruction can occur anywhere in the biliary tree
  - Symptoms include:
    - Constant abdominal pain, tenderness in RUQ, and fever

- If CBD is blocked:
  - bile doesn't reach the duodenum and the bile pigments are absorbed into the bloodstream – causing jaundice
  - If bile cannot reach the duodenum, patients will have grey-white stool
- If the stone only blocks the cystic duct:
  - no jaundice, as bile cannot be absorbed directly from the gallbladder



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Jaundice

- Not a pathology, but a symptom
- What is it?
  - Yellowish skin discoloration
- Liver removes yellowish bile pigments formed by the breakdown of hemoglobin from old RBCs and puts them into bile for elimination from the body (bilirubin)
- Jaundice is caused by excessive amounts of bile pigments being absorbed into blood



THANKS