Pathology of the Liver and Biliary Tract – 5
Diseases of the Biliary Tract

what is it, gall bladder?
can’t you see I have a lot to do?
I maked these

you made STONES?

YOU'RE JUST SUPPOSED TO HOLD WHAT I GIVE YOU!
GET OUT! GO ON!
I maked these

Hi Pancweas!
I maked these!

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you like dem?

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THE BILIARY TRACT – STRUCTURE AND FUNCTION

Gallbladder
• stores, concentrates and releases bile

Hepatic bile ducts
• carry bile from different lobules of the liver

Common bile duct
• Carry bile to intestine

Bile = Water, Cholesterol, Bile acids, Bilirubin, Inorganic ions

Secretion provides:
1. Bile acids for digestion of dietary fats
2. Excretory route for various metabolites and drugs
3. Buffers that neutralize acid pH from the stomach
Gallbladder Stones (Choleliths)

- Stones = cholesterol, bile pigments, bile salts, calcium and proteinaceous matrix
- Supersaturation and precipitation of bile
  - Secondary to ascending bacterial infections?
- Not significant until obstruction occurs
THE BILIARY TRACT – DISEASES

**Biliary Obstruction**

- Caused by cholangitis, parasites, fibrosis, gallstones
- Result: post hepatic icterus, hepatic atrophy and biliary fibrosis

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**Ascaris suum, pig**

**Colelithiasis, cat**
• Fasting / Anorexia
• Secondary to biliary obstruction
• *Lantana camara* toxicosis
  • Cholestasis, icterus and photosensitization

**Gallbladder Distension**

Gallbladder distension (left) and normal GB (right) sheep

**THE BILIARY TRACT – DISEASES**

Gallbladder distension, sheep, *Lantana camara* toxicosis
• Gallbladder dilation
• Accumulation of mucoid secretion
• Small breed dogs – Shelties, Cocker spaniels

Cause?
• Decreased gall bladder motility
• Abnormal bile composition
• Bile stasis
• Cystic mucinous hyperplasia

Sequelae
• Extrahepatic biliary obstruction
• Ischemic necrosis and rupture
Rupture of the Biliary Tract / Gallbladder

- Usually traumatic in origin
- Steady leakage of bile into the peritoneal cavity
- Chemical peritonitis
- May be sterile or infected with enteric bacteria → rapidly fatal
Gallbladder Edema

Causes
- Right Heart Failure
- Infectious canine hepatitis - dogs
- Salmonella – cattle
Cholangitis

- Intra- and extrahepatic bile ducts
  - Extends to the parenchyma (cholangiohepatitis)
- Portal of entry for bacterial agents:
  - Hematogenous
  - Ascending from the intestine (obstruction and bile stasis)
- Two important entities in companion animals:
  - Suppurative cholangiohepatitis
  - Lymphocytic cholangitis (next slide)

Suppurative cholangitis
- Older cats > dogs
- Ascending bacterial infection
- Often associated with IBD or pancreatitis in cats
Cholangitis

Lymphocytic Cholangitis – Feline progressive lymphocytic cholangiohepatitis

- Cats 4 years and under (Persian)
- Ascites, icterus, hypergammaglobulinemia

Active stage:
- Lymphocytic inflammation in and around bile ducts → periportal parenchyma

Chronic stage:
- ↓ of lymphocytes
- Bridging fibrosis

Etiology:
- Immune-mediated disorder?
- No concurrent pancreatitis / enteritis
Cholecystitis

- Inflammation of gallbladder
- Acute or chronic
- **Fibrinous** cholecystitis
  - Salmonellosis in cattle*
- **Hemorrhagic** cholecystitis
  - Salmonellosis in cattle*
  - Arsenic toxicosis
Cystic Mucinous Hyperplasia

- Cystic proliferation of the mucus-producing glands of the gallbladder and bile ducts
- **Old dogs** and sheep
- Often associated with GB mucocele*
Gallbladder Neoplasia

- Very rare in animals
- Adenomas (cattle)
- Carcinoma

Gallbladder adenoma, boa constrictor

Gallbladder carcinoma with hepatic invasion, dog