DISCLAIMER: As before, we copied/pasted these pictures from Dr. Meuten’s slides. Please don’t distribute to anyone other than classmates. If corrections need to be made, please let me know.
Bovine: Describe lesions. Ddx?
• Multifocal ulcerated & necrotic lesions with crusts on teats & udder
• Ddx: Cowpox; pseudo-cowpox; Bovine herpes mammalitis (covered in integumentary)
What are the presentations of lesions of mastitis (acute & chronic)?
What is the mode of entry?
Diseases of the mammary gland

- Mastitis
  - Ascending infection
  - Acute patterns: serous, hemorrhagic, suppurative and gangrenous
  - Chronic: granulomatous inflammation, involution, fibrosis

KEY species is Bovine, entry is ascending
Economic impact can be great
Life threatening forms are disastrous but uncommon
What are the common organisms of mastitis? Which are most pathogenic to the cow?
Bovine mastitis

- *Streptococcus agalactiae*
- Other streptococci – *S. dysgalactiae, S. uberis, S. bovis*
- *Staphylococcus aureus*
- **Coliforms**  
  Can be lethal
- *Mycoplasma ie bovis*  
  Gangrenous
- Miscellaneous
Describe lesions. Ddx?
• Suppurative mastitis
• Ddx: Streptococcal infections (S. agalactiae typically produces no overt lesions).
• Staph aureus, Coliforms, & Mycoplasma would more likely present as gangrenous
Describe lesions. Ddx?
• Abscesses of suppurative mastitis confined to one quarter. Note unaffected quarter separated by fibrous connective tissue (suspensory lig of udder)
Describe lesions. Ddx?
• Large granuloma in mammary gland
• Ddx: Mycotic (yeasts); Prototheca; ?
Cow udder: Describe lesions. Ddx?
• Well demarcated necrotic tissue of gangrenous mastitis
• Ddx: Staphlococcus aureus (G+ exotoxin); E. coli, Klebsiella (G- endotoxin)
What is the expected leukogram?  Ddx?
Well demarcated necrotic tissue of gangrenous mastitis

Ddx: Staphlococcus aureus (G+ exotoxin); E. coli, Klebsiella (G- endotoxin)
What are the factors considered in diagnosis of mastitis?
DIAGNOSIS

- History – calving, whelping dates
- Palpation
- Ruminant – CMT
- Ruminant – electrolytes
- Small animal – aspiration cytology
- Response to treatment
- Routine clin path if gangrenous type
Describe lesions.  Dx?  Tx?
• L: Bilaterally enlarged mammary tissue.  
  → Neoplasia much lower on Ddx list
• R: extreme fibrous proliferation in between glands
• Dx: fibroadenomatous hyperplasia (does NOT occur with cancer)
• Tx: Spay → regression will occur
Pretend it’s a dog. Ddx? Neoplastic likelihood?
• Canine - common forms: Ductal ectasia, hyperplasia; Mammary lobular hyperplasia
• You will think it is neoplastic on PEx, just don’t be too surprised by the histopathologic dx. of hyperplasia.
• Often present WITH cancer
Dog mammary tissue: Describe lesions. Ddx? Diagnostic tests?
• Proliferative mammary tissue with hemorrhage

• Ddx= Mixed mammary gland tumor; Ductal ectasia, hyperplasia; Mammary lobular hyperplasia; Mastitis

• Dx: History – Age @ OVH 25% incidence if OVH >2nd estrus

PEx - how many glands involved; palpate regional lymph nodes!

Aspirational cytology? Rule out mastitis if only 1 gland or nursing KEY= EXCISION

Radiograph chest – pulmonary mets?

• Benign vs. Malignant
  - Dogs 70 : 30 Benign : malignant
  - Cats 30 : 70
Dog: Describe lesions. Ddx? How do you differentiate?
• Mass of mammary gland
• Ddx: Mixed mammary gland tumor; Ductal ectasia, hyperplasia; Mammary lobular hyperplasia; Mastitis
• Differentiation: Hx; OVH?; PE [regional LN, number of glands involved (differentiates mastitis)]; Cytology
• Benign vs. Malignant
  - Dogs 70 : 30 Benign : malignant
  - Cats 30 : 70
• Non-ulcerated mass of mammary tissue
• Same Ddx as before: hyperplasia, inflammation, neoplasia
• Same differentiation method as before

• Common benign: Mixed mammary (#1); intraductal adenoma
• Common Malig: Carcinoma (#1); Sarcomas; Malignant mixed; OSA
Mammary gland aspirate: Dx?
• Degenerate neutrophils & bacteria (intraMP) → Mastitis
Mammary gland aspirate: Dx?
• Soft tissue sarcoma
Mammary gland aspirate: Dx?
• Round cell tumor $\rightarrow$ LSA (large blast-like cells with lacy chromatin)
Mammary gland aspirate: Dx?
• Perianal gland adenoma (cluster of epithelial cells with uniform nuclear size & low N:C ratio, resembling hepatocytes)
Mammary gland aspirate: Dx?
• Mammary gland adenoma (sheet of epithelial cells with uniform nuclear size & N:C ratio. Nucleoli are small and regular.
Patient & cytology: Dx? Additional PE/tests?
• Carcinoma. Note characteristics of malignancy.
• Check regional LN’s & other soft tissue sites for mets.