

Food Animal Pathology
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Learning Objectives:

1. Appreciate and understand the pathologic process and resultant lesions.
2. Interpretate specific lesions with regards to etiology and clinical relevance.
3. Learn how to develop a list of differential diagnoses based on gross lesions.

Albeit an oversimplification, production animals often die from either enteric or respiratory disease. Identifying certain gross lesions that can be indicative of certain etiologies allows for real-time decision making for intervention, therapy, prevention, etc.

Viral pneumonias typically result in diffuse change (interstitial pneumonia). The lungs are diffusely wet and heavy upon palpation. They are diffusely reddened, fail to collapse with the removal of negative pressure and have rib impressions.

Common causes in cattle include: BRSV (can cause cranioventral pneumonia resembling bacterial pneumonia), IBR, PI3, Coronavirus.

Common causes in pigs include: PRRSV, PCV, SIV, Coronavirus

Bacterial pneumonias usually cause locally extensive cranioventral lesions (bronchopneumonia). The affected portions of the lungs are reddened, firm upon palpation and may be affected/covered by varying amounts of fibrinous exudate.

Common causes in cattle include :Mannheimia haemolytica, Pasteurella multocida, Histophilus somni, and Mycoplasma.

Common causes in pigs include: Mycoplasma hyopneumoniae, Pasteurella multocida, Actinobacillus pleuropneumoniae (APP), Streptococcus, Bordetella bronchiseptica and Haemophilus spp

For pneumonia, ideal samples submitted for diagnostics include:

1. Lung (fresh and fixed)
2. Tracheobronchial lymph node (fresh and fixed)
3. Thymus (fresh)

Gross lesions of enteric disease are less straightforward. Unfortunately, many causes of enteritis in animals lack gross lesions. However, there are some occasions in which gross lesions can be diagnostic for specific etiologies.

Common viral causes of enteritis in cattle include:

1. BVD: ulcerative lesions in mouth, necrosis over GALT
2. Rotavirus and Coronavirus: thinned intestinal walls

Common bacterial causes of enteritis in cattle include:

1. E.coli: often no lesions
2. Salmonella: cholecystitis
3. Clostridium: necrosis and hemorrhage
4. Mycobacterium (Johne's disease): thickened ileum

Common parasitic cause of enteritis in cattle include:

1. Coccidia; hemorrhage
2. Cryptosporidium: often no lesions

Common viral causes of enteritis in pigs include:

1. Rotavirus and Coronavirus: thinned intestinal walls

Common bacterial causes of enteritis in pigs include:

1. E.coli: mesocolonic edema
2. Salmonella: cholecystitis
3. Clostridium: necrosis and hemorrhage
4. Clostridium difficile: mesocolonic edema
5. Brachyspira hyodysenteriae: diphtheritic membrane of colon
6. Lawsonia: diphtheritic membrane of ileum or thickened ileum

Common parasitic causes of enteritis in pigs include:

1. Coccidia: diphtheritic membrane

For enteritis, ideal samples submitted for diagnostics include:

1. Small and Large intestines (fresh and fixed)
2. Mesenteric lymph node (fresh and fixed)
3. Feces (parasitology)

Unfortunately, gross lesions of abortion are almost nonexistent. For abortions, ideal samples submitted for diagnostics include:

1. Fetus or fresh (stomach contents, thymus, thoracic fluid, lungs, liver, kidneys) and fresh tissues.
2. Placenta (if available)
3. Serum from dam (if available)