

Clostridial Diseases

Bacillary hemoglobinuria



Clostridial Diseases

Enterotoxemia

- Clinical signs,
 - *Clostridium perfringens* Type B/C
 - Severe enteritis, dysentery, toxemia, and high mortality in young
 - Sudden death often first/only sign in lambs and kids
 - Some young may cry out before death, grind teeth, have muscular tremors, froth at mouth, have yellowish or bloody diarrhea, and convulsions
 - High levels of starchy foods in the diet and slowing of gut movement are predisposing factors
 - In calves, acute diarrhea, dysentery, abdominal pain, convulsions, and opisthotonos
 - Death may occur in a few hours
 - Less severe cases may survive a few days
 - Recovery period of several days is possible

Clostridial Diseases

Enterotoxemia

- Clinical signs,
 - *Clostridium perfringens* Type D
 - Pulpy kidney disease
 - Occurs in lambs less than 2 weeks old or weaned in feedlots and on a high carbohydrate diet; or may occur when fed on lush green pastures or with goats/calves
 - Usually sudden death in best conditioned lambs
 - May see excitement, incoordination, and convulsions before death
 - Opisthotonos, circling, and pushing the head against fixed objects are common signs of Central Nervous System involvement
 - Frequently, hyperglycemia or glucosuria
 - May or may not develop diarrhea

Clostridial Diseases

Enterotoxemia

- *Clostridium perfringens* Type D



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Enterotoxemia



Clostridial Diseases

Enterotoxemia

- Pathologic findings
 - Hemorrhagic enteritis with ulceration of the mucosa is the major lesion in all species
 - Affected portion of the intestine is deep blue-purple and appears at first glance to be an infarction associated with mesenteric torsion
 - In young lambs, fluid-filled pericardial sac and hyperemic areas in the intestines
 - In older animals, hemorrhagic areas on the myocardium and petechiae/ecchymoses of abdominal muscles and intestinal serosa
 - Rapid post-mortem autolysis of the kidneys, but seldom found in affected goats or cattle
 - Hemorrhagic or necrotic enterocolitis may be seen in goats

Clostridial Diseases

- Diagnosis
 - Consider anthrax as a differential diagnosis for sudden death (if suspect anthrax, do not move or cut up the animal)
 - Confirm with lab testing to identify the bacteria or the toxin
 - Collect samples as soon as possible after death
- Treatment
 - Difficult to treat due to rapid progression
 - Use antitoxins when available in conjunction with antibiotic therapy, such as penicillin

Clostridial Diseases

- Prevention and Control
 - Proper management and vaccination
 - Booster mother with a multi-valent clostridial vaccine one month prior to birth date of young to increase the level of protection and period of time the young are protected
 - Ensure passive immunity through colostrum transfer
 - Active immunity through two doses of vaccine 4-6 weeks apart; give first dose at 8 weeks of age or weaning time, when the protection from the dam's milk begins to decline
 - Provide an annual booster before high risk periods to maintain protection