

BOTULISM

The Organism

- Clostridium botulinum
 - rod-shaped bacterium
 - soil-borne infection
 - Gram positive
 - spore-forming
 - Non motile
 - Anaerobic
- Neurotoxin produced by Clostridium botulinum during vegetative growth. C. botulinum types B, C. and D are associated with disease in animals but the type prevalence varies geographically

Epidemiology

- Ingestion of toxin where feed preparation or storage allows multiplication of the organism in the feed with toxin production.
- Contamination of feed with carrion containing toxin.
- Consumption of carrion on pasture by phosphorus-deficient animals.
- Risk factors often result in multiple cases.
- Rare cases occur from toxin production from organisms in the intestine or wounds

Clinical Signs

- Early muscle tremor
- progressive symmetrical weakness
- motor paralysis leading to recumbency
- Mydriasis
- Ptosis
- weak tongue retraction
- sensation and consciousness retained until death

Post Mortem Lesions

- None specific

Diagnosis

- Clinical sign
- No definitive antemortem test or postmortem lesion.
- Diagnostic confirmation Demonstration of toxin in serum or feed.
- Demonstration of organisms in feed, intestinal contents or wounds
- Bacteriology
- suspected contaminated feed material, liver, rumen contents, plus serum from clinically affected animal (bioassay, anaerobic CULT, ELISA)
- Histology - formalin-fixed brain.

Differential Diagnosis

Ruminants

- parturient paresis in cattle
- hypocalcemia in sheep
- Tick paralysis
- Paralytic rabies
- Poisoning by *Phalaris aquatica*
- Organophosphate/carbamate poisoning
- Louping ill in sheep

Horses

- Equine protozoal myelitis
- Equine encephalomyelitis
- Hepatic encephalopathy
- Paralytic rabies
- lonophore toxicity

Treatment

- Type-specific antiserum
- supportive treatment

Prevention and Control

- Avoidance of exposure by feed management.
- Vaccination