

Hemorrhagic Bowel Syndrome in Cattle



Case Example

- History: >2 lactation Jersey cow, 3 days fresh
 - Late evening: blood in manure, slight diarrhea, normal TPR
 - Next morning: found dead
- On necropsy: petechial hemorrhages throughout small intestines
- 4+ *Clostridium perfringes* cultured from manure
- Rule outs: Hemorrhagic Bowel Syndrome, Salmonellosis, BVD, Winter dysentery



Hemorrhagic bowel syndrome

Aka jejunal hemorrhage syndrome, bloody gut, dead gut

- Etiology:
 - Unknown – likely multi-factoral
 - *Clostridium perfringens* type A
 - A commensal organism and ubiquitous in the environment
 - has been isolated in many cases – unsure whether it is a causal or consequential association with the disease
 - Some rations may encourage *C. perfringens* overgrowth in the intestines

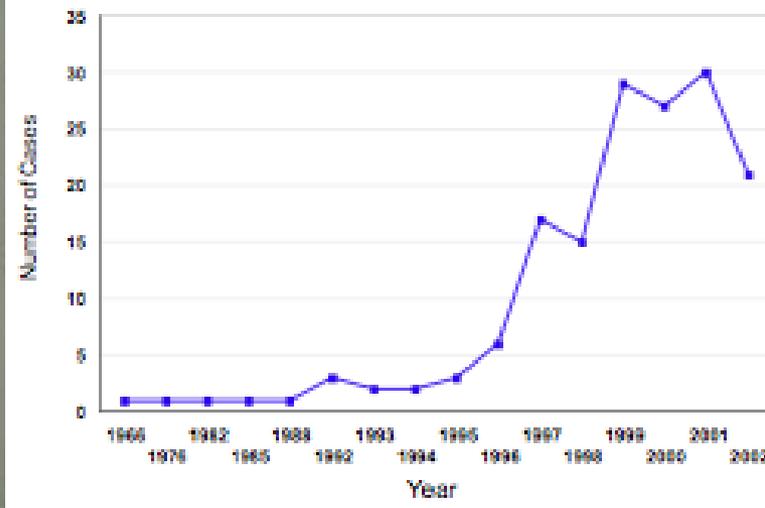
Hemorrhagic bowel syndrome

- Etiology cont'd
 - *Aspergillus fumigatus*
 - Found in soil and feed
 - Primary insult (eg. rumen acidosis, abnormal GI motility, metabolic diseases, etc) or injured gut may allow *Aspergillus* to enter the blood
 - Nutritional factors

Hemorrhagic bowel syndrome

- Epidemiology
 - Sporadic but primarily in lactating dairy cows in North America (although still present in beef herds)
 - Low morbidity, high case fatality (85-100%)
 - 5-9% of herds affected

Figure 1. Number of HBS Cases by Year.



Hemorrhagic bowel syndrome

- Epidemiology cont'd
 - Incidence has increased dramatically over the last 15 yrs
 - Usually in the first 3 months of lactation
 - Risk factors:
 - use of BST,
 - large herd size,
 - high energy diets
 - Cows on pasture may decrease risk



Hemorrhagic bowel syndrome

- Pathogenesis

Intra-luminal blood clot in small intestines (d/t hemorrhage)



Gastrointestinal obstruction and stasis



Distention of upstream GI



hypoCl, hypoK, dehydration, anemia



Ongoing ischemia and necrosis of the SI

Hemorrhagic bowel syndrome

- Pathogenesis cont'd
 - Outcome: within 24-48hrs marked fibronous pernitonitis, dehydration, electrolyte imbalance, marked toxemia and death

Hemorrhagic bowel syndrome

- Clinical Signs

- Acute anorexia, depression, decreased milk production, abdominal distension, weakness → recumbency, bloody, melenic or dry scant feces, abdominal pain
- PE: Increased HR, pale mm, increased RR, distended bowel on rectal palpation
- U/S: can help to differentiate from intussusception, cecal dilation and volvulus, diffuse peritonitis, ileal impaction
- Laporotomy: abomasum and SI distended with fluid, dark red/purple on the serosal surface, serosal fibrin tags

Hemorrhagic bowel syndrome

- Treatment
 - No specific treatment
 - Medical:
 - Supportive IV fluids and electrolytes
 - Antibiotics – e.g. penicillin if *Clostridium* is thought to be involved
 - Analgesics and/or anti-inflammatory drugs
 - Clostridium Perfringens Type A Toxoid
 - Surgical:
 - Laparotomy and massaging the clot out of the intestines
 - Enterotomy to remove blood clots
 - Resection of affected bowel and anastomosis has a poor success rate

Hemorrhagic bowel syndrome

- Prognosis – poor
 - Case fatality rate up to 100%
- If caught early, medical treatment may be sufficient
- If surgical intervention is required, massaging the blood clot out of the intestines holds a better prognosis than enterotomy, resection and/or anastomosis



Hemorrhagic bowel syndrome

- Prevention and Control
 - Annual vaccination: *Clostridium Perfringens* Type A Toxoid
 - Feed additives
 - Omni-Gen AF – tie up *Aspergillus* in moldy feed
 - Mannan oligosaccharides – reducing toxin load and stimulate immunity
 - Controlling rumen acidosis, metabolic diseases, and other diseases that affect GI motility
 - Controlling carbohydrate overload, high protein/sugar concentration, limiting oral medications and maintaining appropriate fiber content

References

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