University of Mosul
Lecture No.:
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Website:

Lecture title: Lamb dysentery

Synonyms :Enterotoxemia

Lecturer Affiliation: Department of Internal and preventive medicine

Summary:

Definition:Is an acute infectious toxemic disease of newborn lambs and calves caused by toxin of *Clostridium perfringens* type B and characterized clinically by a short course , diarrhea and ulcers in the small intestine.

Etiology: *Clostridium perfringens* type B , a large gram positive rods , produce four main lethal necrotizing toxin : alpha , Beta , Epsilon and Theta .

Epidemiology:

Distribution: Occurs world wide.

Transmission and mode of infection:

A.The feces of animals or carcasses of dead animals are considered the most important sources of contamination of pasture and soil

B. Infection occurs naturally by ingestion of the spores during suckling of contaminated teats and udder.

Susceptible hosts: Lambs , calves , foals, camel calves.

Factors influencing susceptibility :

The disease causes deaths and losses in 20–30 % of lambs in a flock in endemic areas.

A. LD is most common in lambs of all breed and sexes, especially 1-3 days of age and sometimes up to 2 weeks. In calves 1-10 days occasionally up to 10 weeks. In foals it usually occurs in the first few days of life.
B. Infections occur in all seasons. The incidence is higher during late winter and spring.

Pathogenesis: After **ingestion of spores** (*Cl. perfringes* spores in soil contaminate the teats and udder of dams)by newborns during suckling.The organism changes to its **vegetative form** in the gastrointestinal tract , especially in the ileum. The organism multiplies and colonizes the intestinal mucosa and produce its **toxins**, especially **beta**, which causes inflammation, partial loss of the mucosa, ulceration and injury to the capillaries resulting in hemorrhagic enteritis.

Bacterial and toxic irritation to the intestinal mucosa increases peristaltic movements which manifested clinically by abdominal pain , diarrhea and fluid loss containing blood ,bacteria, water and electrolytes (sodium, chloride, potassium and bicarbonate). After a few days , especially in infected calves , dehydration(increased PCV , packed cell volume) and acidosis. Death results from shock , toxemia , dehydration and acidosis.

Clinical signs:

Morbidity rate up to 30% , Mortality rate up to 100%.

The course of the disease is short(few hours), occasionally extended for a few days in calves and lambs.

IT is can be classified into four clinical forms:

1- The peracute form is manifested by sudden death without previous illness.

2-The acute form: the affected lambs isolate themselves and show severe abdominal pain during palpation, recumbancy and inability to suck. The fluid feces are yellow to brown and contain blood, coma and death within 24 hours of the onset of illness.

3- The subacute form , the affected lambs isolate themselves, arch their backs and show signs of abdominal pain , yellow diarrhea or dysentery , coma and death.

4- The chronic form occurs in flock after many successive years of the disease on the farm and is usually less common.

Postmortum lesions

1- The carcass usually shows rapid signs of dehydration and diarrhea.

2- The intestinal mucosa (most commonly in the ileum) is congested and dark red and the ulcers are large (2.5 cm in diameter) and surrounded by a zone of hemorrhage.

3- Blood stained contents are present in the intestine , and serous fluid in the peritoneal cavity may be present.

Diagnosis:

1- Field diagnosis:Clinical signs and typical postmortum lesion.

2- Laboratory diagnosis: depending on demonstration *Cl. perfringes* toxins in the intestinal contents by direct ELISA or by uses of laboratory animals.

Prognosis : Poor.

Differential diagnosis:

1- Collibacillosis.
2-Acute Salmonollosis.

Treatment: In general, treatment is little value, hyperimmune antiserum with oral administration of penicillin may prevent further proliferation of the organism and produce toxin.

Prevention and control:

In endemic area , control must depend on immunization and sanitation .
Sources of infection may be reduced by burning the carcasses or burial in quick time.
Vaccination with an alum precipitate toxoid or bacterin in two doses with 2-4 weeks apart.
The second dose should be given 2 weeks before parturition .