

Caseous Lymphadenitis (CLA) in Small Ruminants

Caseous lymphadenitis (CLA) or (Cheesy Gland Disease) is a chronic, contagious disease caused by the bacterium *Corynebacterium pseudotuberculosis*. The disease is characterized by abscess formation in or near major peripheral lymph nodes (external form) or within internal organs and lymph nodes (internal form).

Economic Importance

- I. Economic losses from CLA include death, condemnation and trim of infected carcasses, hide and wool loss, loss of sales for breeding animals, and premature culling of affected animals from the herd or flock.
- II. Although CLA is typically considered a disease of sheep and goats, it also occurs more sporadically in horses, cattle, camelids, swine, wild ruminants, fowl, and people.
- III. Because of its zoonotic potential, care should be taken when handling infected animals.

The epidemiology of CLA varies between countries from little within flock transmission in the United Kingdom, to major proportions in flocks in Australia and United States of America.

The prevalence of CLA in the commercial goat herds may be as high as 30%. If abscesses affect more than one lymph node, the carcass will be condemned at slaughter

Transmission:

1. Occurs either directly between sheep during close confinement or, indirectly, via contaminated shearing equipment.
2. Fighting, causing skin lesions on the head, is the major means of disease transmission between rams.

Clinical Signs:

1. Most commonly, symptoms are palpable enlargements of one or more of the superficial lymph nodes.
2. The morbidity of the infection rate in goat flocks increase with age, and may approach 70%.
3. The enlarged lymph nodes have a very thick wall and are filled with thick greenish pus.
4. The most common lymph nodes affected are mandibular, prescapular, prefermoral, and supramammary lymph nodes.
5. Less common is involvement of lymph nodes internally in the chest and abdomen.

6. As the animal gets older, abscesses often develop around the lungs, heart, liver, kidney, and spinal cord.
7. They may cause weight loss, pneumonia, and neurological signs.

Pathogenesis:

- *C. pseudotuberculosis* is spread in the environment by broken and draining external abscesses.
- The organism survives in the environment for at least one year and can be spread on such items as shearing blades, fences, and feeders.
- The organism enters the goats body through small breaks in skin or mucous membranes and eventually becomes localized in a regional lymph node. Heavy environmental bacteria contamination occurs in confinement operations and around feeders, goat dairies seem to have a high prevalence of CLA.

Diagnosis:

1. Presence of a firm to slightly soft subcutaneous swelling in the location of a lymph node.
2. Herd history of CLA.
3. Culture: aspiration of the swelling and sending it to the diagnostic lab for isolating and identifying the organism.
4. Serology: serologic tests such as bacterial agglutination test and synergistic hemolysis - inhibition test are valuable in identifying goats with early stage of the disease (no abscess yet developing).

Differential diagnoses

- ❖ Definitive diagnosis of the cutaneous form of CLA should also include actinobacillosis and tuberculosis, and local abscess formation.
- ❖ Common differential diagnoses for the visceral form of CLA affecting the chest include chronic suppurative pneumonia, pleural or mediastinal abscesses, and ovine pulmonary adenocarcinoma (OPA, Jaagsiekte).
- ❖ In more general terms, common causes of chronic weight loss in adult sheep include restricted nutrition, poor dentition, chronic parasitism, paratuberculosis (Johne's disease), maedi-visna virus infection, chronic suppurative processes, and tumours of the gastrointestinal tract.

Treatment:

1. Separate and isolate the affective animals.
2. Ripened abscesses lanced and flushed with 7% iodine solution.
3. The pus should be flushed down a drain, or collected and burned.

4. Surgical removal of the encapsulated abscess offers the advantages that the treated animals need not be quarantined.
5. Antibiotic treatment has not been effective.

Eradication: Herd eradication requires diligent management.

- Purchase animals from known non-infected herds.
- Quarantine and monitor new animals at least 60 days.
- Monitor and cull animals with multiple abscessed lymph nodes
- Housing free of sharp objects
- Clean and disinfect feeders and pens regularly.
- Pus should be collected and burned.

Vaccination:

- ✓ A vaccine is available and should be considered in management of CLA in infected herds.
- ✓ Commercial vaccines have reduced the incidence of CLA within a flock but do not prevent all new infections nor cure sheep already infected.
- ✓ Commercial vaccines are used in many countries with a high CLA prevalence such as the USA and Australia but presently not in many countries within Europe.
- ✓ Formalin-killed organisms and toxoided culture supernatant fluid. (Also contains toxoids for clostridium perfringens type D and tetanus toxin), this has an efficiency of 70-80% in preventing the clinical manifestations of the disease.