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Popular Article

Actinomycosis: Lumpy Jaw Disease in cattle

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Introduction

Actinomycosis is a chronic infectious condition characterized by suppurative granulation of the skull, specifically affecting hard tissue (mandible and maxilla) in cattle. Harz coined the term actinomycosis in 1879 to describe something that resembled fungal mycelium, which is why actinomycosis is also known as ray fungus. *Actinomyces bovis* is a gram-positive, anaerobic, filamentous, non-motile, non-haemolytic, non-spore producing, non-capsulated, non-acid fast pleomorphic rod similar to coccobacillus bacteria. Actinomycosis has been reported in several places of India.

Synonyms: Lumpy jaw disease

Etiology

The disease is caused by *Actinomyces bovis* in cattle and *Actinomyces israelii* in humans. The organism is classified as fungus-like bacteria because it exhibits morphological and cultural similarities to both bacteria and fungi.

Transmission

Actinomycosis usually affects cattle aged 2 to 5 years, is a sporadic disease, and animal-to-animal

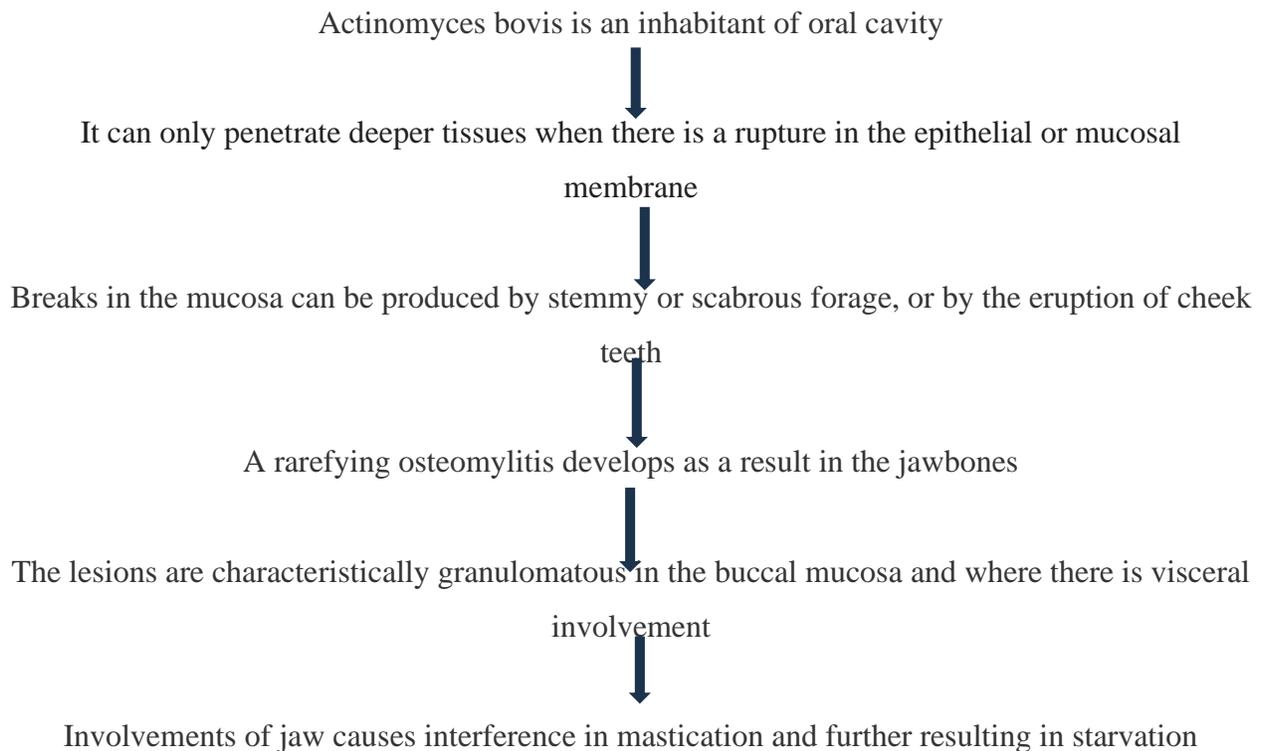


transmission is infrequent.

The organisms stay as a resident population and may cause infection through abrasion, damage, or wounds. The abrasion of the buccal mucosa caused by coarse feed or surface particles when chewing may lead to infection. It has been observed that infection spreads through dental alveoli during eruption.

Normal cattle's alimentary canal may house *Actinomyces bovis*, from which the organisms might enter subepithelial tissues via surface object damage.

Pathogenesis



Clinical finding

- The lesions begin as a firm, painless, confined protuberance, generally at the level of the mandible or maxilla's central molars.
- The invasion destroys the bone structures, and in certain cattle, enormous granulomatous masses occur on the surface of the jaw, followed by the formation of sinus tracts.
- Abscesses can spread and cause sinuses to form on the skin's surface, from which purulent secretions leak.
- Examination of the oral cavity may reveal loose or missing teeth.
- Halitosis is a condition characterized by bad breath coming from the mouth.



- Loose teeth cause hypersalivation and dysphagia (difficult feeding).
- Long-standing instances may harm the neighboring bones.
- The adjacent lymph nodes are unaffected, and the illness does not spread via the lymphatic channel.



Diagnosis

- Based on clinical finding
- Cultural examination of pus granules collected from affected lesions
- Histopathological examination
- Immunodiagnosis

Prevention and control

- Infected animals should be isolated and treated.
- There is no vaccination against this illness.
- Contaminated material and animals with discharge foci may be removed and disposed of.
- This problem should be evaluated by a trained veterinarian for antibiotic therapy.
- Hygiene practices and precautionary measures play a vital role in prevention.

References

- Choudhary SS, Bhanuprakash AG, Mahendran K. Therapeutic Management of Actinomycosis in a Calf. *Intas Polivet.* 2016;17(2):578
- Ganapathi, P., Hariharan, T., Subash, R., & Kavithaa, N. V. (2022). Treatment of bovine actinomycosis in crossbred cow: A.
- Ray SK. Ph.D. Thesis, Punjab Agric. Univ. Ludhiana, 1978.

