



A Monthly e Magazine

ISSN:2583-2212

November, 2013

Online Popular Article

## A Review on Actinomycosis Diagnosis and its Management

**Manoj kumar Sinha\*., Manju Sinha**

Assistant Professor, Department of Veterinary Anatomy, Bihar veterinary college, Patna  
Assistant Poultry Officer, Sheohar

### Introduction

Actinomycosis is also known as lumpy jaw caused by *Actinomyces bovis*. The disease is characterized by suppurative granulation of the skull, progressive bony enlargement affecting particularly the lower jaw (mandible and maxilla). Basically, there are two types of lumpy jaw occurs in bovines, the common form is soft tissue abscess with is relatively easy to treat and clear up and other is bony swelling due to deep seated infection within the bones and much more difficult to treat and lancing and draining is not possible and may be harmful.

### Etiology

The disease is caused by *Actinomyces bovis* in cattle and *Actinomyces israelii* in humans. *A. bovis* is gram positive, filamentous anaerobe, non-motile, non-spore forming, rod to coccobacilli bacteria and normal habitant of oral flora and upper respiratory tracts of most animals. Actinomyces is characterized by the presence of sulfur granules which contain bacteria that are arranged in clubs. *Actinomyces bovis* is common inhabitant of the bovine.

### Clinical Symptoms and Diagnosis

Painless bony swelling which appears on the mandible or maxilla at the level of central molar teeth. Teeth embedded in the affected bone become maligned and painful and cause difficult mastication leads to inappetance and difficulty in breathing. Some lesions enlarge rapidly and the swellings are very hard immovable and painful. They usually break through the skin and discharge of pus is small in amount which is sticky, honey-like fluid containing minute, hard, yellow white granules.



Official Website

[www.thescienceworld.net](http://www.thescienceworld.net)

[thescienceworldmagazine@gmail.com](mailto:thescienceworldmagazine@gmail.com)

## **History**

Unusual mastication and swelling at Mandibular region, and leaking out pus content. Radiographic examination showed lysis of facial bone with calcification.

**FNAB:** Fine-needle aspiration biopsy is safe, easy-to-use, fast, effective, inexpensive and less aggressive procedure for recognizing microorganisms and sulfur granules especially when bacteriological analyses are negative. FNAB might be useful for the differentiation actinomycosis lesions and neoplastic disorders of bone.

**Microscopic Examination:** After crushing the washed granules on a glass slide and staining with grams stain, Gram positive micro-organisms are seen either as short rods, filaments, or branching forms (club-like rosettes).

Histopathological examination revealed clumps of basophilic filamentous bacteria in vaguely rosette like configuration surrounded by acute inflammatory cells. Demonstration of yellowish sulfur granules from aspirated purulent material and histopathological examination is confirmatory diagnosis of actinomycosis.

## **Management:**

- For control, isolation or disposal of animals with discharging lesions is important and should be fed separately.
- Animals should be fed with smooth and water-soaked straws to avoid damage to the buccal mucosa.
- Infected animal should not be allowed to graze pastures along with healthy cattle.
- Treatment is with surgical debridement and antimicrobial therapy along with iodides as used in case of actinomycosis. The treatment with iodide solution (5% Lugol's Iodine) solution @ 20 ml at weekly interval for three occasions along with penicillin and streptomycin @ 10 mg/ kg b. wt. I/M daily for fourteen days along with meloxicam @ 0.2 mg/kg body weight and oral administration of Potassium Iodide 6 gm daily for 7 days and daily local dressing of wound with Providone Iodine.

## **References**

- Milerno, G. (2008). Cytological features of Mandibular actinomycotic osteomyelitis in a cow. *Veterinary Record*, 163: 369-370.
- Pal B, Prasad B, Mandeep S. Clinical Management of Actinomyces in cows. *Indian Journal of Veterinary Medicine*. (1994). 14:49



- Pine, L. and Overman, J.R. (1963). Determination of the structure and composition of the 'Sulphur Granules' of *Actinomyces bovis*. *Journal of General Microbiology* 32: 209-223.
- Smith, B.P. (2002). *Large Animal Internal Medicine*, 3<sup>rd</sup> Edn. Mosby, St.Louis.

