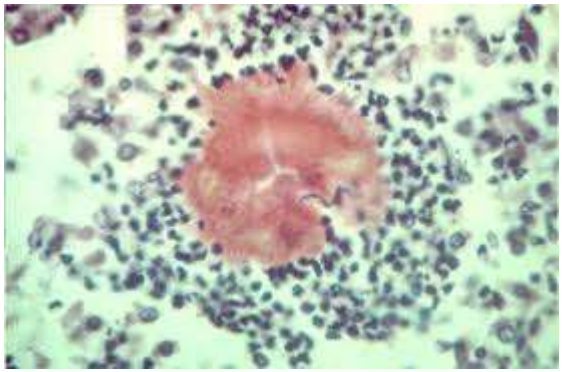
Actinobacillosis
(Wooden tongue)



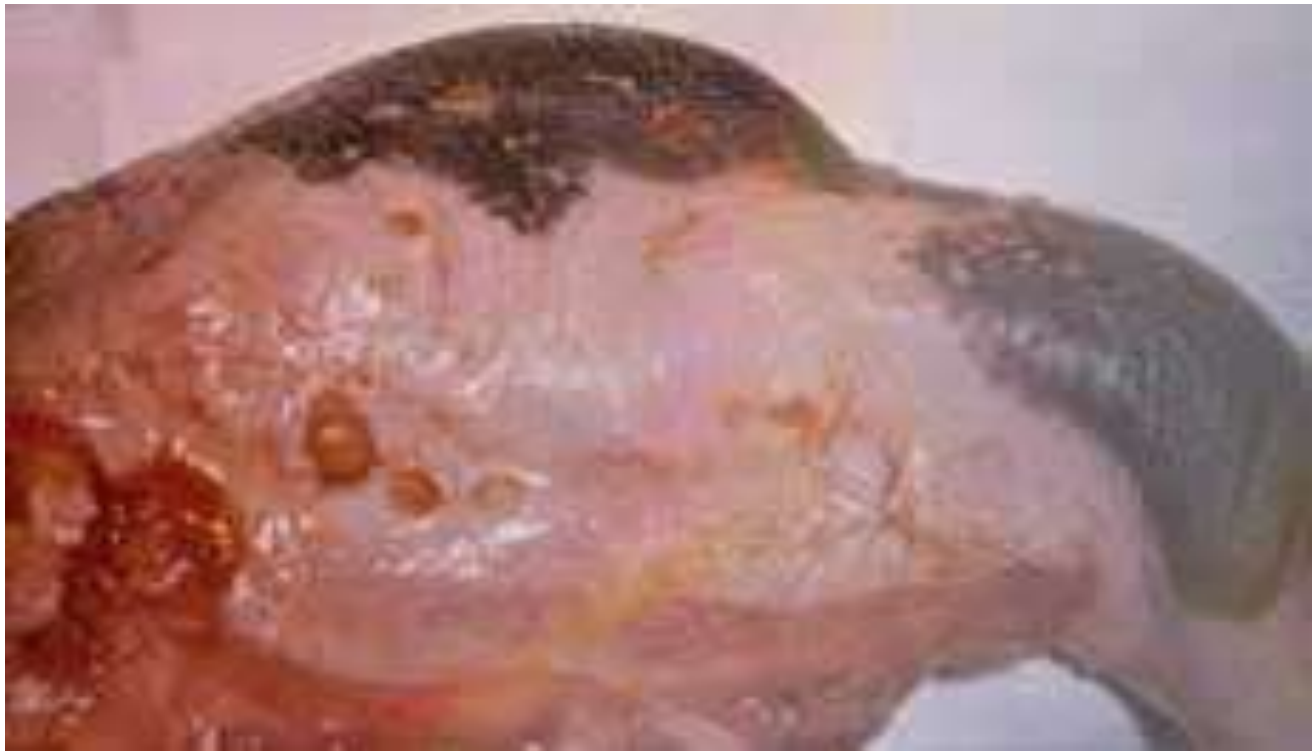
It is a chronic pyo- granulomatous disease affecting soft tissues of the head and neck and the associated lymph nodes, sometimes the tongue may be involved.

Actinobacillosis. Multifocal, well demarcated yellow lesions in the retropharyngeal lymph node of a bovine

Swelling around the lower jawbones may occur with wooden tongue. The bottle jaw may be confused with lumpy jaw, but the swelling is much softer

Wooden tongue is usually detected when a cow is seen with its tongue protruding from its mouth

A tongue removed from a cow with wooden tongue. Note the yellow lumps of 'actino' granules bursting out of the swollen tongue — both in the black pigmented section and lower down near the base.

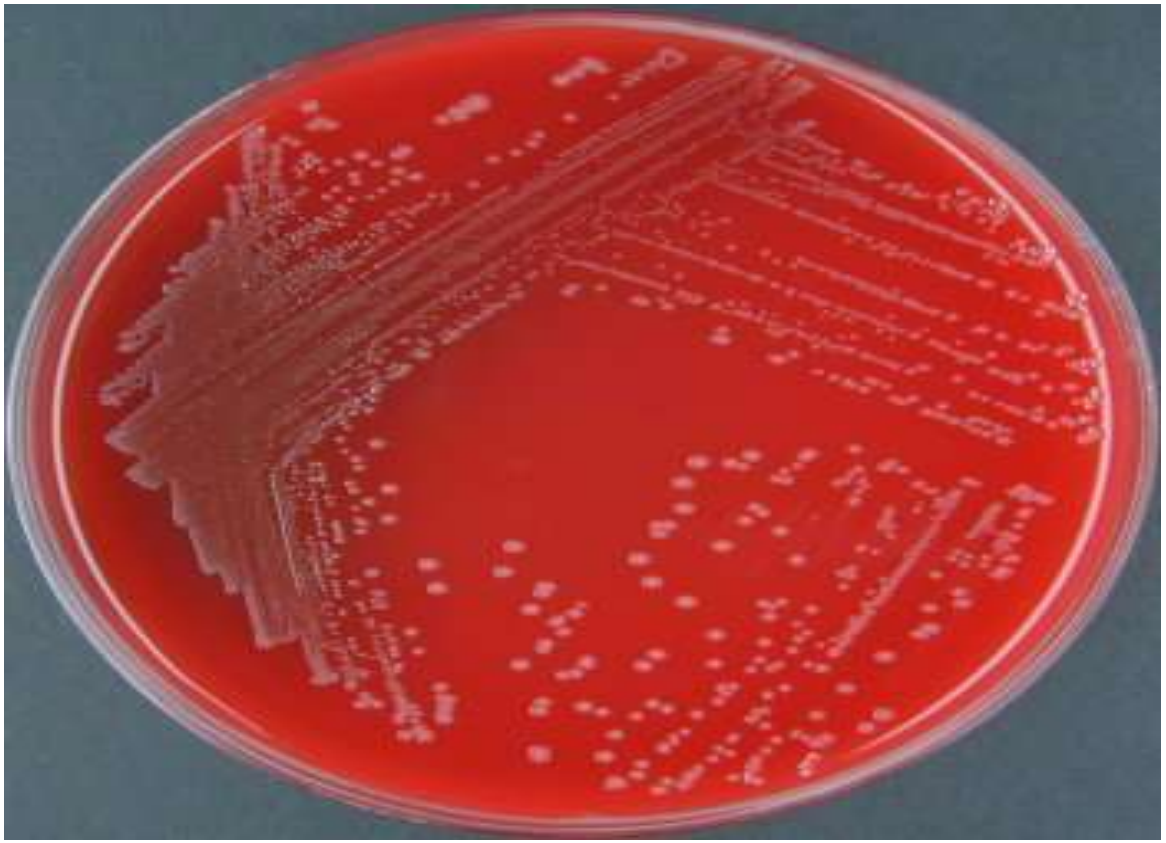


CHRONIC ACTINOBACILLOSIS WITH TONGUE INVOLVEMENT

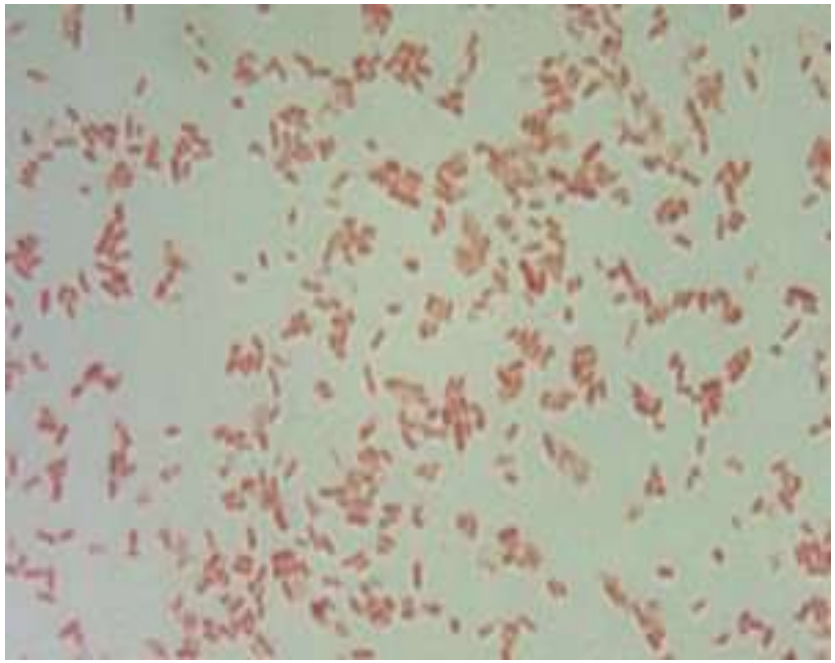
Actinobacillus lignieresii affecting submandibular lymph nodes and soft tissues.

Actinobacillus lignieresii

Small to medium sized, grey colonies



Etiology; *Actinobacillus ligneriesii*, gram negative rods, aerobic non motile oxidase and catalase positive bacteria.



Occurrence; Worldwide in distribution of sporadic nature.

Source of infection; *A. ligneriesii* is a normal inhabitant of the oral cavity and rumen of ruminants. It is susceptible to ordinary environmental conditions;it does not survive on hay or straw for more than 5 days.

- In cattle infection most commonly occur through ulcerating or penetrating lesions in the tongue or oral mucosa caused by teeth or hard dry spiny food (endogenous infection).

Pathogenesis; Local infection by penetrating organism------- acute inflammatory reaction----- subsequently---- granulomatous lesion with necrosis and suppuration--- discharge of pus to the exterior------ spread to regional lymph nodes is usual--- lingual involvement in cattle--- interfere with prehension and mastication--- due to acute inflammation in early stages ---- distortion of tongue in late stages—visceral involvement is recorded.

Clinical findings;

Cattle:

*Glossal actinobacillosis is usually acute in onset.

*Animal being unable to eat for a period of 48 hours.

* Excessive salivation.

* Gentle chewing of tongue as if foreign body is present in the mouth. * The tongue is hard on palpation especially in the base, the tip appear to be normal.

* Manipulation of the tongue is painful.
* Nodules and ulcers are present on the side of the tongue; an ulcer may be present at the anterior edge of the dorsum of the tongue.
* In later stages the acute inflammation is replaced by fibrous tissue, the tongue become shrunken and immobile with difficulty in prehension.

* Lymphadenitis is common and is mostly independent on lesions in the tongue. There may be visible and palpable enlargement of the submaxillary and parotid lymph nodes. Local firm swellings develop and often rupture discharging thin odourless pus. Healing is slow and relapses commonly occur.

- Enlargement of the retropharyngeal lymph nodes interfere with swallowing and produce loud snoring respiration.
- *Actinobacillus granuloma may appear on the external nares, skin or eye lids, they are pliable on palpation, red and bleeds easily.

Sheep; * Tongue is not usually affected.

*Lesions up to 8 cm may appear on the lower jaw, face and nose or on skin folds from lower jaw to the sternum.

* They are superficial or deep extending to the cranial or cervical lymph nodes.

* Discharging viscid, yellow green granular pus through multiple small openings.

* Extensive lesions lead to fibrosis which may physically impede prehension and respiration. Affected animals may starve to death.

* Involvement of nasal cavity leads to continuous bilateral nasal discharge.

* *A. lignieresii* can cause mastitis in ewes.

Diagnosis;

1.Characteristic clinical signs.

2. Direct microscopical examination of a squash- prepared pus smear stained with Gram's stain. It reveals large number of Gram negative pleomorphic rods.

3. Isolation and identification of *A. ligneriesii*.

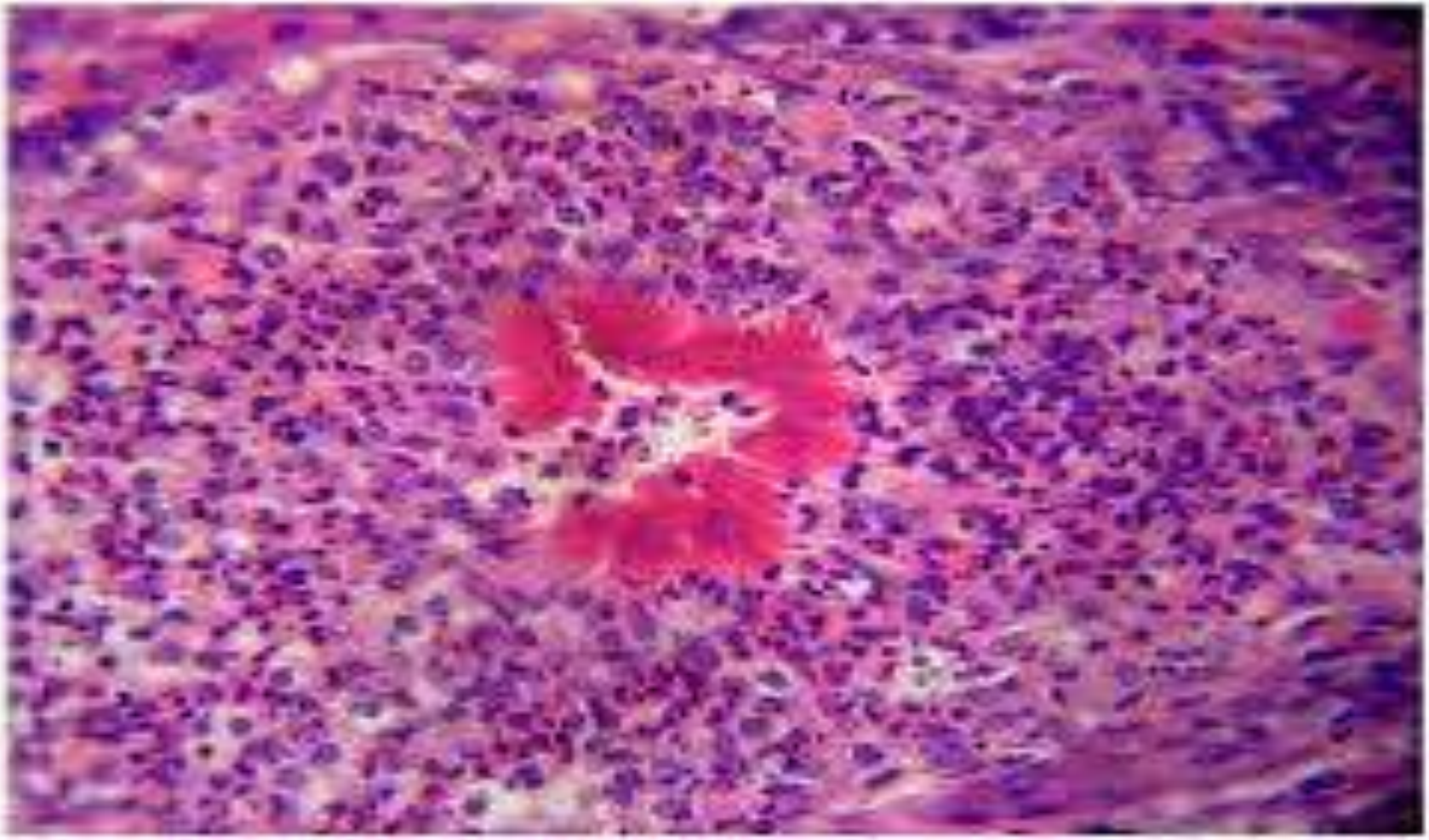
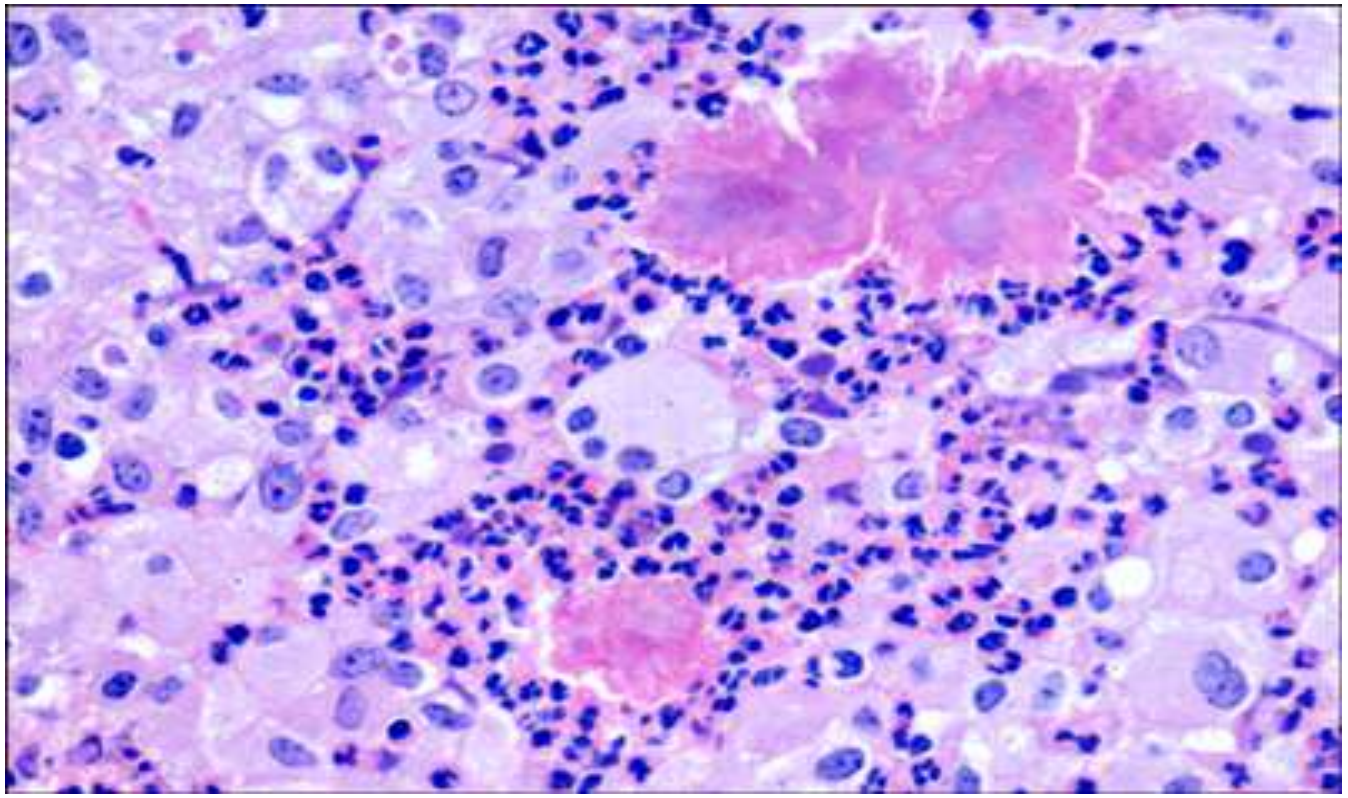


Fig.3. Pyogranulomatous dermatitis with neutrophils surrounding eosinophilic club-like rosettes (Splendore-Hoeppli phenomenon). HE. 400×.

- Actinobacillar pyogranuloma. Bacterial colonies are surrounded by eosinophilic club-like bodies, neutrophils, and large macrophages. H&E stain, ×400.



- confluent pyogranulomas containing small colonies of rod-shaped bacteria surrounded by eosinophilic club-like bodies.Gram and Ziehl-Neelsen stains for acid-fast organisms were then carried out; results were Gram-negative and non-acid-fast, respectively. Accordingly, a histological diagnosis of chronic pyogranulomatous inflammation caused by*Actinobacillus*-like bacteria (probably *A. lignieresii*) was reached.

Differential diagnosis : * Foreign body in the mouth. *Actinomycosis * Tuberculosis. * Rabies. * Caseous lymphadenitis in sheep

Treatment: The earlier the treatment is instigated, the more likely it is to be successful. Early treatment of wooden tongue is usually successful, but advanced cases may fail to respond.

1. Iodides is the standard treatment with dramatic results, iodides act by reducing fibrous tissue formation rather than by direct bactericidal effect. Oral or intravenous iodides dosing may be used.

1. Potassium iodide 6-10gram / day for 7-10 days given orally as drench to cattle. It is a time consuming but effective treatment. Treatment with iodide preparations may be used till iodism develops (lacrimation, anorexia, coughing with dandruff formation).

2. Sodium iodide; 1g/12 Kg body weight given i.v.as a 10% solution in one dose in both cattle and sheep. One course of 1 or 2 treatment is usually sufficient to for soft tissue lesions; signs of acute actinobacillosis disappear in 24-48 hours.

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3. Sulphonamides, penicillin, streptomycin and other broad spectrum antibiotics are also used.

Control: * Quick treatment of affected animals and prevention of contamination of pasture, fodders and waterers with pus of infected animals.

*** Isolation of animals with discharging lesions although the disease does not spread readily unless predisposing environmental factors cause a high incidence of oral lacerations.**