

LUMPY JAW AND WOODEN TONGUE IN AN ADULT DROMEDARY CAMEL: CASE REPORT

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Lumpy jaw is caused by different bacterial species and therefore it is important to identify the pathogen. Actinomycosis caused by *Actinomyces* (*A.*) *bovis*, a Gram-positive, anaerobic, organism causes the classical lumpy jaw in cattle, a suppurative alveolar periostitis often involving the third and fourth molars. In chronic cases the osteomyelitis is surrounded by periosteal new bone and fibrous tissues producing cavities in the bones; the bone is “eaten away”. The pathogen penetrates the wound of the oral mucosa caused for example by a wire, coarse hay stems or sticks. *A. bovis* is part of the normal oral flora of ruminants. The lesions most frequently involve the mandible and the molars, the maxillae and other bones of the head.

Actinobacillosis with 22 different species of which few are important pathogens like *Actinobacillus* (*A.*) *pleuropneumoniae*, *A. suis*, *A. equuli* and *A. lignieresii* are responsible for different diseases. *A. lignieresii* occurs in sheep, horses, dogs and ruminants. It is a Gram-negative anaerobic coccobacillus, which causes tumorous abscesses mainly of the tongue in bovines. A hard granulomatous mass develops in the

tongue causing anorexia and excess salivation. The tongue is hard and wooden and it is therefore named “wooden or timber” tongue (Markey *et al*, 2013). The disease resembles lumpy jaw disease as often the jaws are also involved. Wooden tongue disease is caused by wounds in the mouth mucosa by stemmy feed or pastures covered with penetrating plant awns like thistles.



Fig 2. Lumpy jaw cut open displaying white necrotic material



Fig 1. Lumpy jaw presented as an orange-size granuloma of the right mandible



Fig 3. “Wooden tongue”

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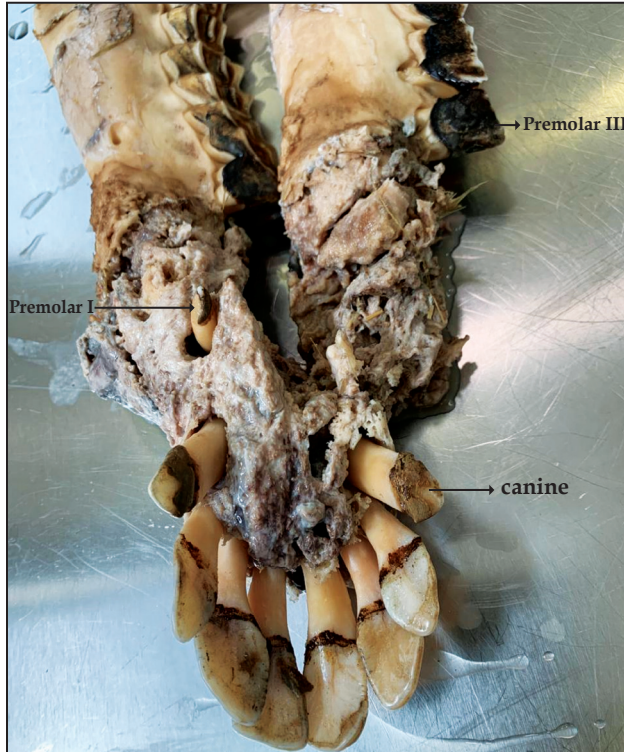


Fig 4. Large parts of the Pars incisiva of Corpus mandibulae were eaten away between canine and premolar III of both mandibles

A pregnant dromedary camel in poor condition was sent to CVRL where a necropsy was performed. An orange-size hard granuloma was observed on the right lower jaw. The skin was intact (Fig 1). When opened dry necrotic mass protruded (Fig 2). The tongue lost its lining displaying necrotic material inside the tongue. When touched, it was hard like wood, therefore named wooden tongue (Fig 3). Both mandibles were macerated and it was observed that both lower jaws were affected. Large parts of the Pars incisiva of Corpus mandibulae were eaten away between canine and premolar III (Fig 4). Histology of the jaw lesions displayed a granuloma containing fungal elements surrounded by pyogranulative inflammation (Fig 5).

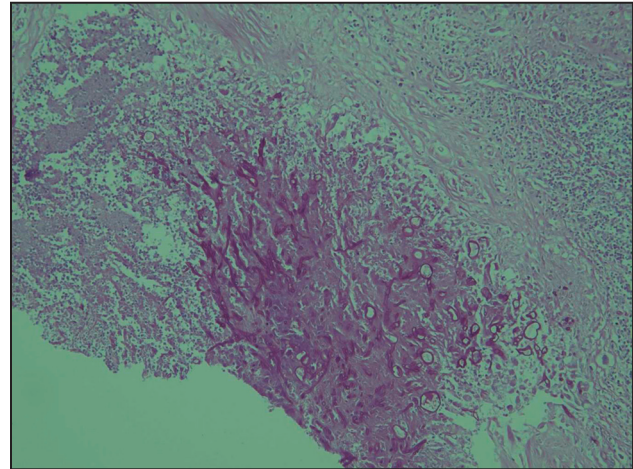


Fig 5. Histology of lumpy jaw in PAS stain showing fungal filaments and abscess formation

From the jaw's abscess, *Fusobacterium mortiferum*, *Streptococcus sanguinis*, *Pediococcus acidilactici*, *Aspergillus ochraceus* and *Trichosporon mucoides* were isolated. It is not clear which bacterial or fungal species had caused the lumpy jaw, but most probably all together. Actinomyces or Actinobacillus bacteria were not isolated. Lumpy jaw in camels is rare and has very seldom been reported. Fowler (2010) reported Actinomycosis in a llama and Wernery *et al* (2014) in dromedaries. However, according to Manefield and Tinson (1996) in contrast to other species Actinomycosis is almost never seen in dromedaries.

References

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