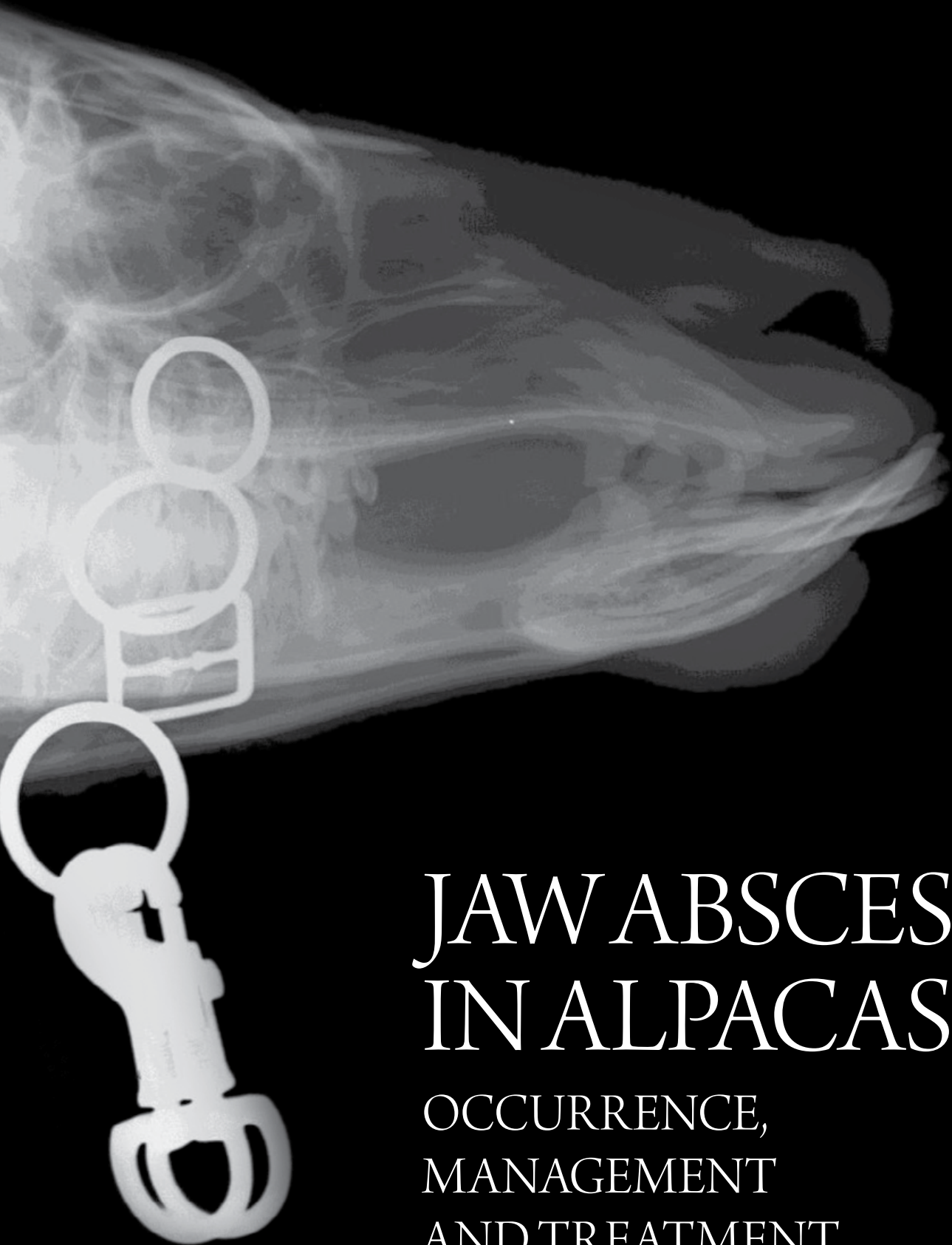




JAW ABSCESSSES IN ALPACAS:

OCCURRENCE,
MANAGEMENT
AND TREATMENT.

A condensed version of a dissertation
by **Marie Junck**, written during
her final year as a student at the
Royal Agricultural College.

The study focuses on providing preventative measures regarding jaw abscesses and to advise owners and breeders on a condition that affects a significant part of the alpaca population. The particular anatomy of alpaca teeth predisposes them to dental problems, including tooth root abscesses and jaw bone infections (osteomyelitis). The most common factor believed to cause jaw abscesses in alpacas is feed, which can puncture the gum and lead to infection¹. The main difference between tooth root abscesses and osteomyelitis is that tooth root abscesses affect a specific tooth, while osteomyelitis is present in the jaw bone and is detected radiographically by sclerosis and periosteal bone formation². The dense maxillary bones of herbivore appear to provide adequate protection against the potential spreading of the disease, but the height of the crowns of herbivore teeth, with a large part under gum level, seems to suggest an easily accessible path for infection to spread from the tooth to the bone³. This study looks at 17 affected animals along with their management and treatment after diagnosis. The data used in this study was obtained from owners and breeders from various countries (United States, New Zealand, Canada and United Kingdom) via email communication.

Females were more often diagnosed with jaw abscesses than males (12F vs. 5M), while the age of the animal did not seem to affect the occurrence of the condition: the median age of the studied alpacas was 3.6 years, with an age range of four months to 11 years. The majority of abscesses were discovered in spring, which could be due to the lack of vitamin D available during the winter months (less sunlight, shorter days), making the jaw bone more fragile in osteomyelitis cases; or the presence of grass seeds in the spring, increasing the chance of gum lesions when ingested by alpacas. Over half of the studied alpacas -ten animals (59%) - suffered from abscesses located on the lower jaw. Six abscesses (35%) were located on the left side of the animal's face. One alpaca suffered from bilateral abscesses. The average herd size was 47 alpacas and eight of 17 animals (47%) presented signs of pain (when the abscess was touched or noticed in their chewing). Medical treatment included 15 different drugs, the most popular

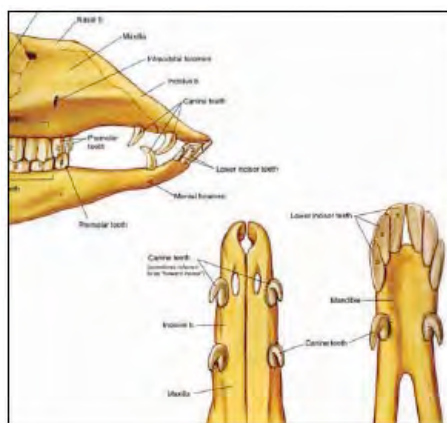


Fig. 1: Alpaca Teeth Diagram

(Budd, 2012)

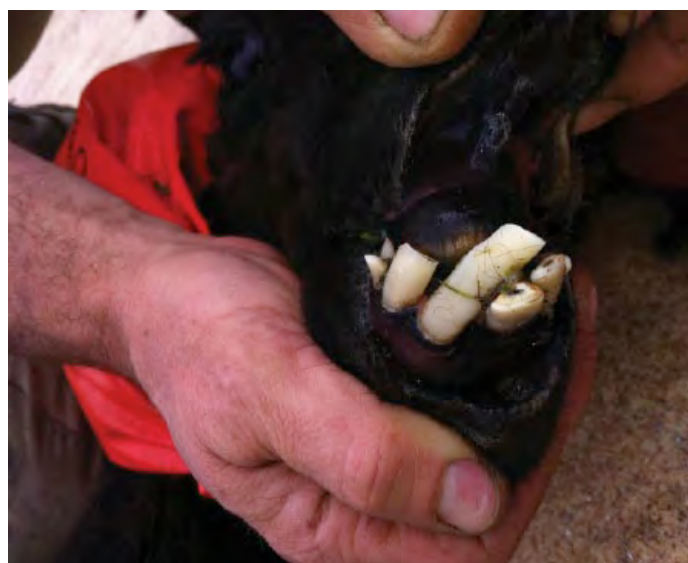
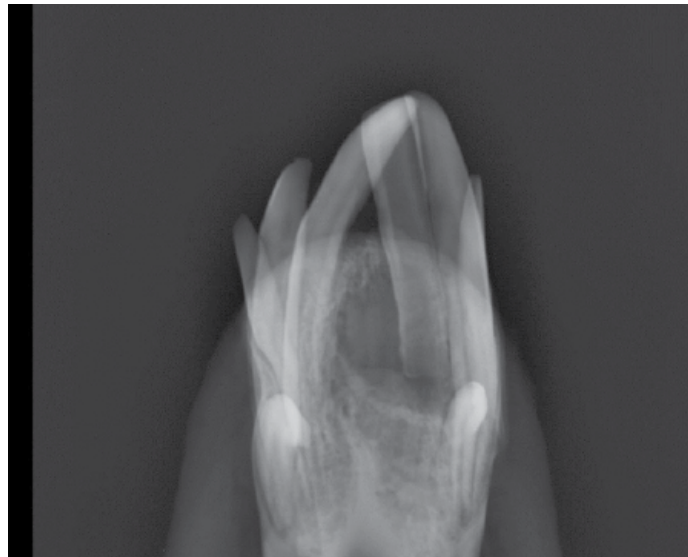
being florfenicol, sodium/potassium iodide, penicillin, Excenel which contains ceftiofur and isoniazid. Surgical treatment was not popular, with only four out of 17 animals (24%) undergoing surgery. Ten animals (59%) presented complications, three were eventually euthanized and nine of 17 alpacas (53%) suffered from recurrences at an average of six months intervals.

- An English owner discovered that after giving young cria additional ADE monthly until they reach two years of age and during winter months, she has not had any further problems as the bones and teeth seem to develop better.
- Multiple owners based in New Zealand have discovered the bacteria for bovine wooden tongue in their grazing pastures. Superphosphate was also reported to be used as pasture fertilizer in New Zealand, three alpacas presented jaw abscesses while superphosphate was in use and the condition has not been reported after the fertilizer was replaced.

The particular anatomy of alpaca teeth predisposes them to dental problems, including tooth root abscesses which can originate from misaligned teeth or foreign objects perforating the gum, jaw bone infections, incisor and molar overgrowth restricting the animal's feeding, and sharp fighting teeth which can injure the alpaca as well as other animals. Alpacas have a full set of adult teeth by the age of 6, the total number of teeth changing according to gender, with females having 30 and males 32. The additional pair of teeth in males are fighting teeth, females seldom have visible fighting teeth and these are not

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present at birth but emerge around 2 years of age. Alpacas have six lower incisors and a hard upper palate replacing incisors and facilitating chewing of grass and plants. There are six molars on each jaw used to crush food before it is swallowed and chew the cud; they are the hardest teeth to work on as they are located at the back on the animal's mouth which does not open wide. Alpacas usually have no or very little enamel on the inside part of their teeth and experience tooth growth continually into adulthood, their incisors are deciduous and replaced by permanent teeth at regular intervals. An alpaca with correctly aligned dentition will wear down its incisors by chewing, long lower jaws are common in alpacas and if the lower incisors do not meet³.

Untreated tooth root abscesses can develop into osteomyelitis and early diagnosis is crucial in order to prevent the spread of infection. Surgical treatment is not a guaranteed cure and the risks associated with surgery should be assessed beforehand. Multiple treatments are available to combat this condition but their success rate depends on the individual alpaca and testing the abscess fluid is crucial in order to determine which drug will work best for the animal. Routine examination of teeth is advised as the facial

fleece of alpacas along with cud chewing makes it more difficult to diagnose a jaw abscess. Good quality, long-stemmed forage is essential in the prevention of oral lesions and gum perforations, which usually lead to jaw infections. Overall, jaw abscesses – whether dental or osseous – can be efficiently treated with the appropriate treatment and care. However, healing time can be lengthy and recurrences are frequent.

Alpaca owners need to be aware that untreated tooth abscesses can develop into osteomyelitis and that early diagnosis is crucial in order to prevent this. Alpacas as young as 4 months old have been diagnosed with jaw abscesses, emphasizing the need for regular dental and facial examination. Surgical treatment should be used as a last resort if the alpaca does not respond to medical treatments, dental surgery can be uncertain in camelids, post-operative complications are common and the weak structure of alpaca jaw bones can lead to fractures during tooth removal. Multiple treatments are available to combat this condition but their success rate depends on the individual alpaca and testing the abscess fluid is crucial in order to determine which drug will work best for the animal. Intravenous administration of potassium

or sodium iodide seems to be fairly efficient but its possible side effects need to be considered beforehand. Excenel and Nuflor were also successful treatments with the least amount of subsequent complications. Good quality, long-stemmed forage is essential in the prevention of oral lesions and gum perforations, which usually lead to jaw infections. Overall, jaw abscesses – whether dental or osseous – can be efficiently treated with the appropriate treatment and care. However, healing time can be lengthy and recurrences are frequent. 🐾

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