History and Physical Examination Findings

A 17-month-old female llama (Lama glama) was referred to the Purdue University Veterinary Teaching Hospital for evaluation of a mass involving the rostral portion of the mandible. The mass had been present for approximately 3 months and had, during this time, progressively enlarged despite treatment as a suspected tooth root abscess, including extraction of the deciduous mandibular right incisors, debridement, and systemic and local antimicrobial administration.

On initial examination, the llama appeared bright, alert, and responsive and was in good body condition. Abnormal findings were confined to the oral cavity. The mandibular right incisors and left first incisor were missing, and the remaining mandibular left incisors were palpably loose and laterally displaced. An excoriated, round mass was centered over the area of the previously extracted right incisors, and an abrasion was apparent on the dental pad opposite the mass.

A lateral radiographic view of the rostral portion of the skull obtained 1 month prior to examination at the teaching hospital (Figure 1) was submitted for review. In addition, the llama was anesthetized and an intraoral ventrodorsal radiographic view of the rostral portion of the mandible was obtained.

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page

Figure 1—Lateral (A) and intraoral occlusal (B) radiographic views of the rostral portion of the skull in a llama evaluated for a mass involving the rostral portion of the mandible.
Diagnostic Imaging Findings and Interpretation

On the intraoral radiographic view, an expansile mass involving the right side of the mandible can be seen (Figure 2). The mass crosses the symphysis, displacing the deciduous left second and third incisors laterally. The caudal aspect of the symphysis does not appear to be affected. Mandibular cortical erosion and periosteal new bone formation along the rostral aspect of the right mandibular body are also evident, and irregular patterns of mineralization can be seen within the mass. The radiographic appearance of the mass is most consistent with a locally aggressive neoplasm.

Treatment and Outcome

Histologic examination of a biopsy specimen obtained prior to referral was consistent with a diagnosis of ameloblastoma. Bilateral rostral mandibulectomy to allow en bloc excision of the mass was recommended.

With the llama in dorsal recumbency, an elliptical, circumferential mucosal incision was made, roughly 0.5 cm caudal to the area of the third incisors. The mucosa was elevated, and an oscillating saw was used to transect the mandible caudal to the mass, leaving the mandibular symphysis intact caudally. The incised surface of the bone was curetted to contour the edges of the remaining bone, and an intraoral radiographic view was obtained to ensure that the mass had been completely removed. The mucosal incision was closed routinely.

Histologically, the mass consisted of an infiltrative, poorly circumscribed neoplasm composed of large islands and thick cords of epithelial cells with peripheral palisades of neoplastic columnar and round epithelial cells. These odontogenic epithelial areas were interspersed with areas of fine fibrous connective tissue. A morphologic diagnosis of ameloblastoma was made.

The surgical site healed without complications. Two years after surgery, the llama was able to prehend food well and maintained a good body condition. No permanent incisors erupted. The postoperative appearance was cosmetically acceptable. No regrowth of the tumor or postoperative complications have been reported.

Comments

Dental disease is a common problem in New World camelids, and 2 other reports describe odontogenic neoplasia in a 9-month-old male llama euthanized because of a keratinizing ameloblastoma of the maxilla and a 4-year-old male llama in which an ameloblastic odontoma involving the rostral portion of the mandible was diagnosed at necropsy. In both of these cases, radiographic findings were indicative of a neoplastic mass but treatment was not pursued because of the extensive damage and uncertain prognosis.

Most odontogenic tumors are benign, but they are often locally invasive and aggressive. Misdiagnosis often delays appropriate diagnosis and treatment. As a result, more radical treatment is often necessary and may be accompanied by a poorer prognosis. In the llama described in the present report, timely radiography and referral for surgical excision resulted in a successful outcome.

Findings in this llama emphasize that odontogenic tumors should be included in the differential diagnosis of dental disease in New World camelids. High-quality radiographic views should be obtained early in the course of the disease.

References