What Is Your Diagnosis?

History

A 24-year-old mule was evaluated because of swelling over the right maxilla and unilateral nasal discharge of 3 months’ duration. The referring veterinarian initially suspected the problem was related to a tooth root. The swelling was lanced, the rostral maxillary sinus flushed, and the mule treated with penicillin G procaine (22,000 U/kg [10,000 U/lb] of body weight, IM, q 12 h) and gentamicin sulfate (6.6 mg/kg [3 mg/lb], IM, q 24 h) for 10 days. Treatment resulted in temporary resolution of the nasal discharge. However, approximately 1 week later, nasal discharge recurred and the mule was referred.

On examination the mule was in good physical condition. Swelling was apparent over the right maxilla, and a sanguinopurulent discharge was evident from the right nostril. Discharge was also detected from a draining tract on the caudodorsal aspect of the maxillary swelling. Airflow from the right nostril was decreased, compared with the left nostril, and a foul odor was evident and associated with airflow from the right nostril. The right submandibular lymph node was large. The right maxilla was distorted laterally from the level of the second premolar caudally to the lateral canthus of the eye. Radiographs were obtained of the nasal passages and paranasal sinuses (Fig 1).

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

Figure 1—Right lateral (left) and dorsoventral (right) radiographic views of the head of a 24-year-old mule evaluated because of swelling over the right maxilla and unilateral nasal discharge.
Diagnosis

Radiographic diagnosis—Soft tissue opacification of the right maxillary sinus and lysis of the maxillary bone (Fig 2).

Comments

A large space was apparent between the fourth premolar and the first molar on the right upper dental arcade. The right maxilla had an overall increase in opacification, and the caudal half of the right nasal cavity contained multiple ill-defined radiolucent areas. The most probable diagnosis was neoplasia, although other differential diagnoses included invasive abscess, maxillary sinus cyst, and progressive ethmoid hematoma.

During oral examination with the mule anesthetized, the gap between the fourth premolar and the first molar was found to communicate with the maxillary sinus. Both teeth had severe root erosion and a soft tan tissue adherent to the remaining root tips. The maxillary sinus contained a soft tan tissue. Lymphosarcoma was diagnosed on the basis of histologic evaluation of this tissue, and the mule was euthanatized.

After euthanasia, computed tomography (CT) of the skull was performed. A mass occupying the right nasal conchae was evident, as was destruction of the nasal and maxillary bones (Fig 3). The frontal, maxillary, and sphenopalatine sinuses were filled with a soft tissue or fluid substance. Results of CT supported the diagnosis of neoplastic invasion of the right nasal passages and contributed to our understanding and interpretation of the radiographs.

Radiographs are routinely used for evaluating the skull of horses and mules with nasal or sinus disorders. However, determining lesion severity or offering an accurate prognosis may be difficult solely on the basis of radiography. More detailed information regarding the extent of disease processes may be gathered from tomograms. Use of CT allows for reconstruction of 3-dimensional images, evaluation of both sides of the skull without superimposition of structures, and objective density measurements of desired regions. Although tomograms of the skull of the mule of this report were obtained postmortem, CT could have been performed before biopsy to provide a more complete characterization of the nasal mass.