History and Physical Examination Findings

A 12.5-year-old sexually intact male Prevost's squirrel (Callosciurus prevostii) was evaluated because of right-sided facial swelling and a recent history of dysphagia and stridor. The squirrel was anesthetized to allow for physical examination and collection of blood samples. Physical examination revealed a fracture of the maxillary right third premolar tooth and an associated abscess. Results of hematologic and serum biochemical testing were within reference limits for this species. While the squirrel was anesthetized, radiographs of the skull were obtained (Figure 1).

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

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Figure 2—Same ventrodorsal radiographic view as in Figure 1. Notice the radiopaque masses at the apices of all 4 incisors (circles); opacity of the masses is similar to opacity of the teeth.

Figure 3—Left dorsal–right ventral oblique (A) and right dorsal–left ventral oblique (B) radiographic views of the skull of the squirrel in Figures 1 and 2. Notice the irregularly shaped radiopaque mass extending into the nasal cavity (arrow).

Diagnostic Imaging Findings and Interpretation

Irregular masses with an opacity similar to that of the teeth can be seen near the roots of all 4 incisor teeth (Figure 2). To better characterize the masses, oblique radiographic views of the skull were obtained (Figure 3). An irregular tubular mass can be seen extending from the root of the maxillary left first incisor tooth into the left nasal cavity. The radiographic findings were suggestive of an odontoma.

Treatment and Outcome

The fractured premolar tooth was extracted, but because of the extent of the lesions and the advanced age of the squirrel, the masses surrounding the incisor roots were not surgically treated. After surgery, the squirrel was treated with antimicrobials and fed a soft diet. The facial abscess resolved, but 11 months later, the squirrel was euthanized because of an unacceptable quality of life.

At necropsy, a mass was found obstructing the left nasal cavity. The mass had caused mild deviation of the nasal septum, but the vomer appeared unaffected. Histologically, the lesion was composed of a mass of irregular toothlike structures with little intervening fibrous connective tissue and no epithelial cells. The histologic findings were most consistent with a diagnosis of compound odontoma.

Comments

Odontomas are benign but expansile tumors of dental origin. They are classified as compound or complex.1 In compound odontomas, toothlike structures are grossly evident, whereas complex odontomas bear little resemblance to teeth.2 Odontomas have been identified in a number of species, including dogs, humans, a tiger, and an elephant, but are more common in animals with continuously growing teeth, such as mice, rabbits, chinchillas, and guinea pigs.3,4,5,6

In mice, rabbits, chinchillas, and guinea pigs, odontomas are typically associated with the apices of the premolar and molar teeth, whereas in prairie dogs, odontomas can form near the apex of the incisor teeth and grow to obstruct the nasal cavity.2,7 Affected prairie dogs often have some degree of dyspnea and dysphagia,2,7 and clinical signs in the squirrel described in the present report were similar to those reported for prairie dogs. In particular, the caretakers reported that the squirrel had moderate dyspnea and audible respiratory sounds. On physical examination, the respiratory sounds were referred to the upper airways and nostrils, but the uniformity and volume of airflow through the nasal cavity were not evaluated.

In prairie dogs, formation of odontomas is hypothesized to be linked to captivity and may be related to mechanical tooth trauma resulting from persistent chewing on hard objects.8,9 Although persistent chewing on the enclosure had not been reported for the squirrel described in the present report, it remains a possible contributory factor.