Images in Veterinary Dental Practice

Figure 1—Radiographic projection of the maxillary right canine in a dog examined because of hypersalivation and reluctance to chew on the right side of its mouth.

History and Physical Examination Findings

A 6-year-old spayed female mixed-breed dog was examined because of hypersalivation and reluctance to eat on the right side of its mouth. The dog had recently been adopted from a local humane society. The owner reported that the dog apparently shifted food from the right to the left side of its mouth when eating.

On physical examination, the dog appeared to be unthrifty and underweight. Oral examination revealed widespread gingival edema and oral malodor. Gingival hyperplasia with apparent pseudopocket formation was evident around the maxillary right canine (tooth 104), and close examination revealed a fistulous tract apical to the mucogingival junction. Results of a fecal examination for ova and parasites and a heartworm test were negative. Results of a CBC and serum biochemical profile were unremarkable.

The dog was anesthetized with sevoflurane, and a complete oral examination was performed. The only abnormality was a labial pseudopocket involving tooth 104 that was presumed to be a result of long-standing periodontitis and a 10-mm-deep infrabony pocket (periodontal pocket with its base apical to the alveolar crest) on the palatodistal surface of this tooth. Radiographs of tooth 104 were obtained (Fig 1).

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

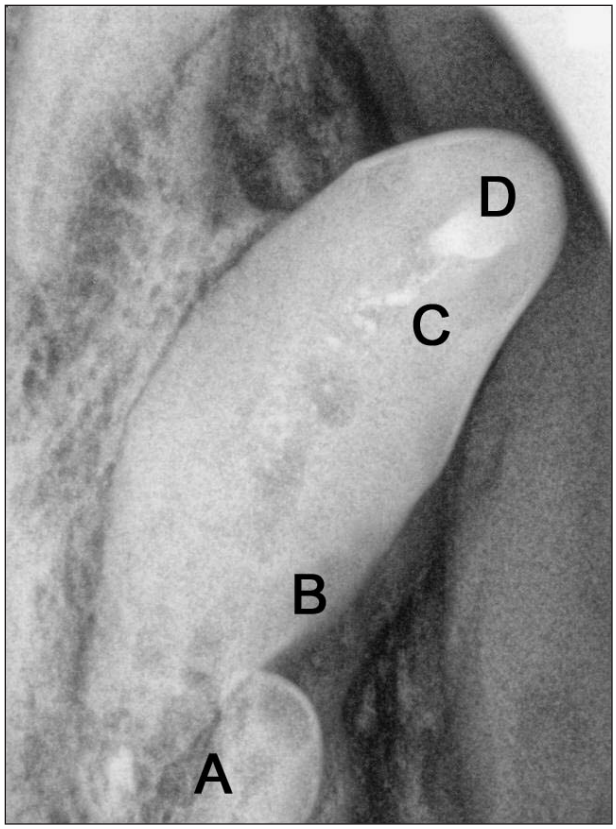

Figure 2—Same radiographic view as in Figure 1. Notice the area of root resorption (A), with osteolysis of periapical bone and loss of the lamina dura; radiopaque material is evident in the periapical area. In addition, there is a defect in the wall of the tooth (B), and the pulp canal contains poorly defined radiopaque densities (C). An amalgam restoration (D) is also evident.

Radiographic Diagnosis

The apex of the root appeared to be resorbing, with osteolysis of periapical bone and loss of the lamina dura; radiopaque material was seen in the periapical area. There appeared to be a communication from the apex of the tooth to the area of the infrabony pocket seen during oral examination. Poorly defined radiopaque densities were evident in the pulp canal. A class VI fracture of the tooth with amalgam restoration was evident. The radiographic diagnosis was a class II endodontic-periodontic lesion.

Treatment and Outcome

The radiographic findings suggested that inappropriate endodontic treatment had been attempted in this dog prior to its being adopted by its current owners. With failure of endodontic treatment in an immature tooth, closure of the apex of the tooth root is not evident, and root resorption can occur, along with osteolysis of the periapical bone. Bacterial infection can ascend from the apex of the tooth along the periodontal ligament to the crestal bone or can penetrate the lamina dura, cortical bone, and overlying soft tissue, resulting in a fistulous tract. These patients are difficult to treat, as both the endodontic and periodontal lesions must be addressed.

Owners of the dog elected to have the tooth removed. At the time of extraction, a communication between the oral and nasal cavities (ie, an oronasal fistula) was identified. Bone augmentation and a simple full-thickness mucoperiosteal flap were used after tooth extraction to repair the oronasal defect. The dog was treated with amoxicillin-clavulanate (12.5 mg/kg [5.7 mg/lb], PO, q 12 h) for 21 days after surgery. Morphine sulfate (0.5 mg/kg [0.23 mg/lb], PO, q 12 h) was administered for the first 4 days after surgery for analgesia. The owners were given instructions for follow-up periodontal care.

Comments

This case points out the necessity of high-quality dental radiography before, during, and after treatment in dogs with dental lesions. Radiography is essential in the development of a proper treatment plan, helps to ensure intraoperative success, and allows for postoperative monitoring. In all of the subdisciplines of veterinary dentistry, including periodontics and endodontics, use of improper techniques and materials may lead to catastrophic consequences.

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