History and Physical Examination

A 4-year-old 10.1-kg (22.2-lb) spayed female Miniature Schnauzer was evaluated because it had developed halitosis. The patient’s primary veterinarian had performed annual examinations and vaccinations. The dog was also seen regularly by a groomer for nonanesthetized tooth scaling but had never had periodontal treatment. A physical examination was performed, and results were considered normal except for oral examination findings. The rectal temperature was 100.7°F, and heart and respiratory rates were within respective reference ranges. Oral examination of the conscious patient revealed a calculus index of 2, gingival index of 3, and plaque index of 3.1 Gingival recession associated with the maxillary incisor teeth and mobility of these teeth were noted. A raised 3-mm circular lesion was observed buccally on the mucogingival junction over the mesial root of the left mandibular first molar tooth.

Following sedation with buprenorphine (0.01 mg/kg [0.005 mg/lb]) and medetomidine (0.003 mg/kg [0.001 mg/lb]), IM, anesthesia was induced with diazepam (0.15 mg/kg [0.07 mg/lb]) and propofol (4.7 mg/kg [2.14 mg/lb]), IV. After intubation, anesthesia was maintained with isoflurane in oxygen. The dog received an SC injection of ampicillin (27.5 mg/kg [12.5 mg/lb]). Complete oral examination and dental charting were performed, and full-mouth intraoral radiographs were obtained. The distal aspect of the left mandibular first molar tooth had a probing depth of 4 mm. The mesial aspect of the left mandibular second molar tooth had a probing depth of 6 mm, and the tooth had stage 1 mobility (scale, 1 to 3).1 The left mandibular first and second molar teeth each had a gingival index of 2 out of 3.1 The buccal lesion at the mucogingival junction over the mesial root of the left mandibular first molar tooth was associated with a draining tract and identified as a parulis (Figure 1). The left mandibular third molar tooth was absent. A radiograph of the caudal aspect of the left mandible is provided (Figure 2).

Determine whether additional studies are required, or make your diagnosis, then turn the page→
Treatment and Outcome

Seventeen teeth were extracted because of periodontitis. The left mandibular first and second molar teeth were sectioned and extracted by means of an extraction technique with a mucogingival flap and periodontal alveolectomy.\(^3\) Complete extraction was confirmed radiographically. The alveoli were debrided, as were the bony defects associated with the periodontal lesions of the roots of the left mandibular first molar tooth. The extraction site was closed with 5-0 absorbable suture\(^4\) in a simple interrupted pattern. The dog recovered from anesthesia without complications. The owners were instructed to feed softened food and not provide hard chew toys for 14 days. The dog was prescribed tramadol (2.5 mg/kg [1.1 mg/lb], q 12 h, for 7 days).

Two weeks after surgery, an oral examination revealed that the extraction sites had healed well and the client reported that the dog had returned to normal activity. The patient had a plaque index of \(^1\) on the remaining teeth. An oral hygiene program was prescribed for use at home, including daily brushing of the teeth and use of an antiseptic oral rinse solution. The client was counseled to stop having the groomer scale the teeth and was given a copy of the American Veterinary Dental College position statement on nonprofessional dental scaling.\(^4\)

**Comments**

Gingivitis is the earliest stage of periodontal disease and can be recognized during oral examination of an awake patient.\(^5\) Gingival recession can be associated with alveolar bone loss, but alveolar bone loss can be present without gingival recession, as observed at the distal root of the left mandibular first molar tooth in the dog of this report. The diagnosis of periodontitis in veterinary patients requires periodontal probing and oral radiography under general anesthesia.\(^6\)

The lesion found buccally on the mucogingival junction over the mesial root of the left mandibular first molar tooth was associated with a class II periodontic-endodontic lesion, which is a primary periodontal lesion with secondary endodontic involvement.\(^7\) Radiographic evaluation was critical for this diagnosis; the normal appearance of the crown of the tooth masked the severity of the underlying disease. There are 3 pathways of communication between the pulp and the periodontium: dentinal tubules, nonapical ramifications, and the apical foramina.\(^8\) The initial lesion was likely the area of vertical bone loss at the distal root. The endodontic system of this tooth likely became involved by bacterial invasion through apical foramina or nonapical ramifications connecting the periodontal ligament space with the pulp cavity. Tooth fracture, if present, would have indicated a class I endodontic-periodontic lesion. A tooth with a class III periodontic-endodontic lesion would have both primary endodontic and primary periodontal disease (eg, a tooth with periodontal disease that was subsequently fractured).

If periodontal disease had been recognized earlier in the dog of this report, progression of bone loss and subsequent extraction of the left mandibular first and second molar teeth may have been prevented by appropriate periodontal treatment.\(^9\) Endodontic treatment of the left mandibular first molar tooth was not considered a viable option given the severity of bone loss and the difficulty in providing the necessary oral care (in the caudal region of the patient’s mouth) at home.\(^10\) Class II periodontic-endodontic lesions carry a poor prognosis for successful treatment.\(^8\)
Findings in the patient of this report exemplify how severe dental disease can be overlooked without thorough oral examination and dental radiography under general anesthesia as well as the limited value of supragingival scaling in a nonanesthetized patient. This report also illustrates the importance of intraoral radiography in the diagnosis of periodontal and endodontic disease and planning of appropriate treatment.

a. 5-0 Monocryl, Ethicon, Guaynabo, Puerto Rico.

References