Boning Up on Periodontal Repair

This report evaluated use of a synthetic bone graft particulate (Consil, Nutramax Laboratories) and 24% EDTA gel (Prefgel, Biora, Inc) to treat an infrabony defect. A 7-year-old, female spayed American Eskimo dog was presented for an oral examination and professional dental cleaning. Sedation was required for the examination, and several pathologic changes were noted. The mandibular right second molar (410) had a mobility index of 2. A 4-mm periodontal pocket was present in the mesial aspect of the tooth, extending to involve the furcation. A 6-mm pocket was present at the distal aspect of tooth 409. The maxillary right (105) and left (205) first premolars had a mobility index of 3, and a 4-mm pocket was present around the circumference of each tooth. Stage IV periodontal disease affecting teeth 105, 205, and 410 was diagnosed. The treatment plan included extraction of 105, 205, and 410. Open debridement and curettage of the region around tooth 409 was performed. The exposed root surface was treated with 24% EDTA gel for 2 minutes. After a sterile saline rinse, the synthetic bone graft particulate was mixed with 0.9% sterile saline and placed to evenly fill the defect and the extraction site from tooth 410. The flap was repositioned and sutured. Chlorhexidine gel (CET gel, Virbac) was dispensed for application twice a day for 2 weeks. Follow-up care included home care and professional dental cleaning at 6-month intervals. Eight months following surgery, dental radiography showed bone deposition at the distal aspect of 409 and restoration of the periodontal space; results at 33 months were comparably positive.

COMMENTARY: The studied bioactive glass product is approved for use in veterinary medicine as a grafting material for infrabony defects. It is an osteoconductive material, acting as a matrix for migration of cells to aid in production of new bone. Other osteoconductive materials— hydroxyapatite and tricalcium phosphate—are not as effective in impeding down growth of the epithelial tissues that prevent new attachment, and decalcified freeze-dried bone allograft, used in human patients, is cost-prohibitive for veterinary periodontal surgery. Thus, the bioactive glass product is worth consideration. —Patricia Thomblison, DVM, MS