

CASE OF THE MONTH (August 2009)

Signalment and History: A three year old neutered male Great Dane/Lab X was referred for evaluation and treatment of possible carious lesions of both maxillary 1st molars. The referring doctor had performed a dental prophylaxis two weeks previously when these lesions were discovered.

Procedures: The patient was placed under general anesthesia for an oral examination and intraoral radiographs. These lesions were examined and identified as true carious lesions.



Next, intraoral radiographs were taken of both of the involved teeth, searching for evidence of endodontic involvement.



Although both carious lesions could be detected radiographically, no endodontic involvement was seen.

A white stone on a highspeed handpiece was used to remove the carious dentin and create the cavity preparation.



After the cavity prep was completed, the lesion was acid etched with 37% phosphoric acid.



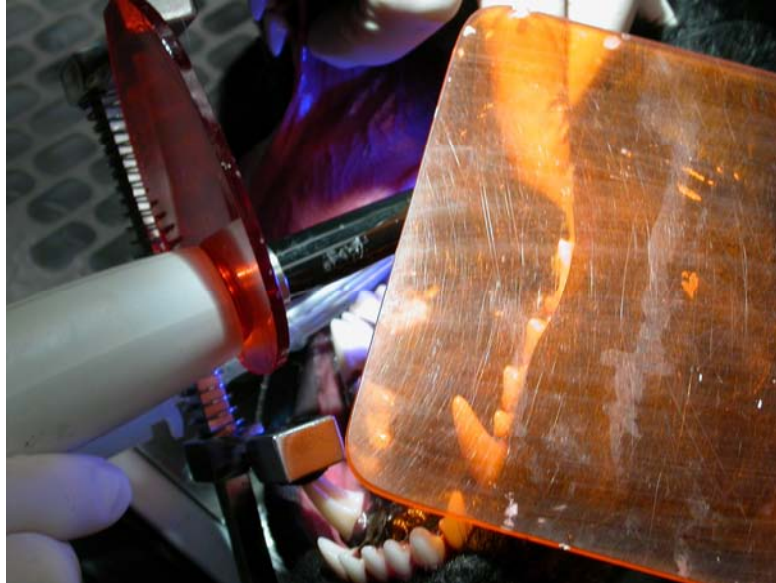
The cavity prep was then coated with a bonding agent.



The composite restorative material was placed and manually formed into the cavity prep.



An LED curing light was used to harden the composite restorative material.



The restoration was smoothed with a set of finishing disks.



An unfilled resin was applied to the finished restoration to help prevent marginal leakage. This completes the restorative process.



Discussion: Caries, or cavities, which are very common in human dentistry, are seen infrequently in veterinary dentistry. There has been only one occurrence of a true carious lesion reported in the literature in the feline species. The commonly seen resorptive lesions of feline patients are caused by an entirely different etiology.

Although true caries do occur in canine patients, we only see three or four cases per year in our dental practice.

Why is the incidence so low? The answer pertains to the etiology of caries. Caries are initiated by bacterial metabolism of carbohydrates, usually sugars. When the carbohydrates are metabolized, three acids are produced: acetic, glucuronic, and lactic acid. These acids attack the enamel, causing demineralization and destruction. This destructive process continues into the dentin and will proceed into the pulp if not contained. The end results are pain, irreversible pulpitis, and pulp necrosis.

Our canine patients don't often develop caries for three reasons. First, they do not eat diets with significant sugar content. Second, the pH of the saliva is higher in canines than humans, and this tends to neutralize acid production. Third, the shape of most of the canine species' teeth are pointed and not conducive to retention of food on the occlusal surface. The most obvious exception to this feature is in the molar teeth, whose occlusal surface is flatter with developmental grooves similar to human teeth and more conducive to food retention. In the dog, caries are found most commonly in the maxillary 1st molars.

COMMUNITY ANIMAL HOSPITAL

John A. Koehm, D.V.M., F.A.V.D.

Fellow of the Academy of Veterinary Dentistry

4871 Summit Ridge Drive

Reno, NV 89523

(775)-746-0333