

Squeezy is a 6 year old FS Siberian Husky. She was presented for severe halitosis and the owner noticed abnormalities of her maxillary 1st molar teeth bilaterally. Squeezy was showing no signs of oral pain per her owner and was eating a well balanced adult dry dog food.

Clinical pictures of the abnormalities of the occlusal surface of the right (109) and left (209) maxillary 1st molar teeth, the patient is placed in dorsal recumbency:



Occlusal Surface of 109



Occlusal Surface of 209

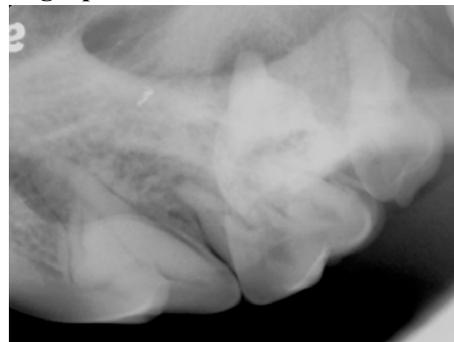
What is your next step for Diagnostics or Treatment?

A complete blood count and serum biochemistry were performed prior to anesthesia and were all within normal limits. Squeezy was placed under general anesthesia and full mouth radiographs were performed. Radiographs of 109 & 209 reveal circular lucencies in the middle of the occlusal surface and there is an obvious periapical lucency of the palatal root of 209. Oral examination and charting revealed a “crater like” lesion of the occlusal surface of 109 & 209, which was soft and “sticky” upon evaluation with an explorer. The left maxillary 1st molar tooth (209) had a brown colored piece of dog kibble present in the crater. There were 4mm periodontal pockets measured of the mesial and distal roots of 110 & 210.

Intraoral dental radiographs of 109 & 209:



109



209

Based on the clinical images and dental radiographs, what is your diagnosis?

Carious Lesions:

Dental caries is a multifactorial disease involving interactions between 3 factors: the teeth, the oral microflora and the diet.¹ It is caused by bacterial demineralization of the inorganic enamel layer and inorganic structures of the dentin. Plaque bacteria, which reside on the superficial surfaces of the teeth, use fermentable sugars (carbohydrates) from the diet as a source of energy², and changes in bacterial flora appear to be driven by changes in the diet.³ Products of carbohydrate fermentation are acidic and can cause demineralization of enamel and dentin.⁴ Dental caries lesions are most commonly found on the flat occlusal surfaces of the teeth, specifically the maxillary molar teeth and the distal aspect of the crown of the mandibular first molar tooth in dogs. Most carious lesions are seen in patients that eat table scraps (breads, sugars, ice-cream, etc).

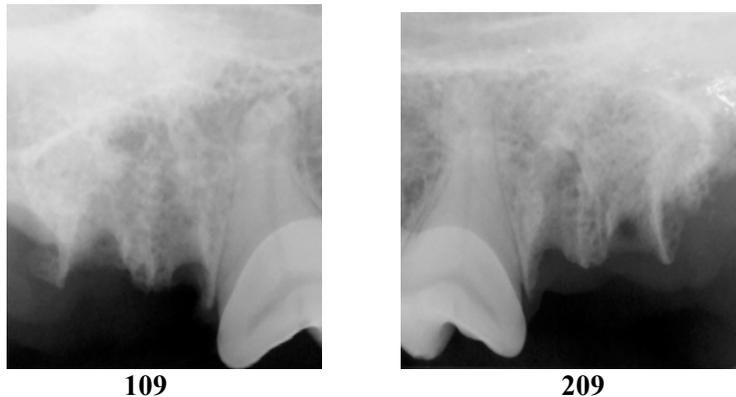
Progression of dental caries lesions causes demineralization of the enamel and dentin, allowing bacteria to enter the dentin tubules and, eventually, resulting in inflammation of the pulp. An important sequela of pulpitis is pulp necrosis⁵, which can result in periapical lesions.

Carious lesions may be seen as the large lesions in the pictures above, however they may also be small and pin-point in size—always evaluate these with your dental explorer and if the explorer “sticks” in the lesion, it is a dental caries. If found early enough and there is no pulp involvement, the caries could be debrided and filled (just like in human dentistry)

What is the best treatment option for this pet?

Since the carious lesions in Squeezy have destroyed much of the functional crown of the maxillary 1st molars bilaterally, surgical extractions were the best treatment option. Carious lesions that have not destroyed a lot of tooth structure and are found on the mandibular 1st molars, many times can be treated with root canal therapies. Root canal therapies are not usually recommended for the maxillary 1st molar teeth because in prepping the tooth for root canal therapy much of the crown would be removed and would not be ideal.

Postoperative intraoral dental radiographs revealing complete extraction of 109 & 209 due to the carious lesions. As an incidental finding 110 & 210 were also extracted due to advanced periodontal disease with alveolar bone loss.



1. White SC, Pharoah MJ. Dental Caries. In: *Oral radiology, principles and interpretation*. 6th ed. St. Louis: Mosby, 2009; 270-280.
2. Hale FA. Dental caries in the dog. *J Vet Dent* 1998; 15:79-82.
3. Ruby J, Goldner M. Nature of symbiosis in oral disease. *J Dent Res* 2007; 86:8-11.
4. Cawson RA, Binnie WH, Barrett AW, et al. Dental Caries, its sequelae, and regressive changes to teeth. In: *Oral Disease*. 3rd ed. St. Louis: Mosby, 2001; 3.2-3.11.
5. Gorrel C. Common oral conditions. In: *Veterinary dentistry for the general practitioner*. Philadelphia: Saunders, 2004;77-78.