

CASE OF THE MONTH

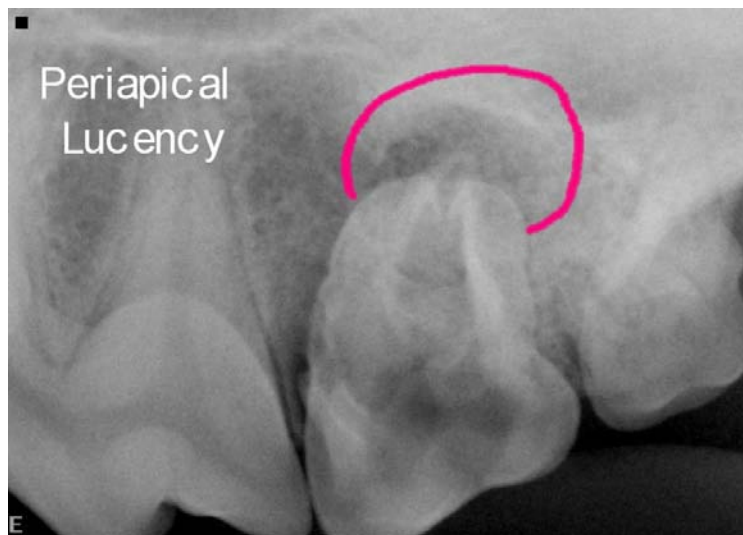
(April 2007)

Signalment and History:

A two year old neutered male Golden Retriever presented with marked gingival recession and root exposure of the left maxillary 1st molar. The exposed roots showed significant deposition of calculus. With the exception of moderate coronal calculus, the rest of the oral cavity was quite normal. Primary periodontal disease was not at the top of the list of suspected etiologies due to the patient's age, the generally good oral health, and the localized characteristic of the pathology. I questioned the owner with regard to the patient's oral behavior, such as chewing on sticks or other objects, but did not find any apparent pattern.

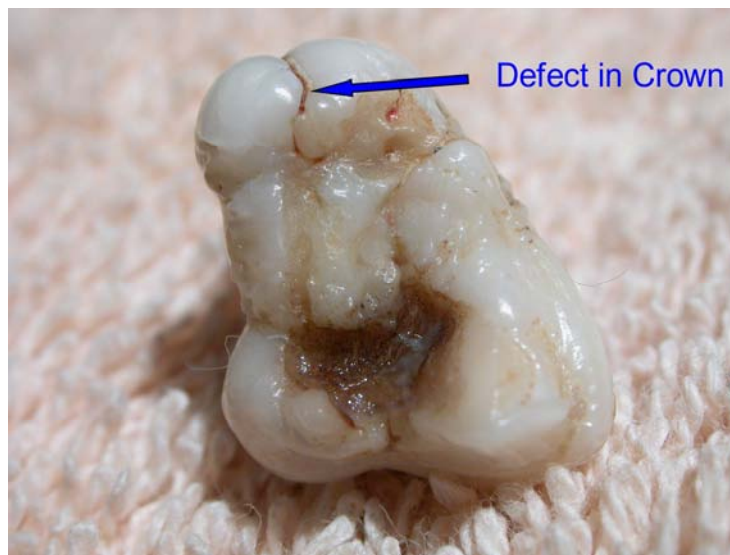


Procedures: The patient was placed under general anesthesia in order to facilitate a thorough oral exam and intraoral radiographs. This tooth showed a mobility of grade two. Intraoral radiographs revealed a large periapical lucency around the palatal root of this tooth as well as a pulp chamber and root canal much larger than normal for a dog of this age. Both of these factors are indicative of endodontic disease with pulp necrosis.



A regional nerve block consisting of a combination of lidocaine and bupivacaine was administered into the left infraorbital foramen. Due to the severe periodontal disease and bone loss associated with this tooth we were able to extract the tooth using a simple extraction technique rather than using a surgical approach. After extraction, the alveolus was curetted and a partial closure was accomplished with 4-0 Monocryl. It was not possible to close the site completely due to loss of gingival tissue associated with the gingival recession.

Discussion: After extraction, a close examination of the tooth revealed the etiology. A linear enamel defect was found on one cusp of the crown of this tooth which communicated with the pulp chamber. This defect is the result of an anomalous development of the tooth bud while it was still forming subgingivally. As a result, bacteria from the oral environment easily gained access to the pulp chamber, where they infected and killed the pulp of the tooth. Since only a single tooth was involved, the most likely cause is trauma to the tooth bud during its developmental phase.



After pulp necrosis had occurred, two important events took place. First, the odontoblasts residing in the pulp were killed. Since they are responsible for the continual growth of the dentinal walls, this thickening of the dentinal walls ceased, leaving a large root canal.

Secondly, the endodontic infection extended through the apex of the roots and secondarily caused a severe periodontal involvement. This periodontal infection was responsible for the gingival recession, periodontal bone loss, and root exposure. This tooth therefore was suffering from a combination of an endodontic infection and a periodontal infection. Such a combination is referred to as an endo-perio lesion, and since the endodontic portion occurred first, it is classified as a Class I endo-perio lesion.



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