

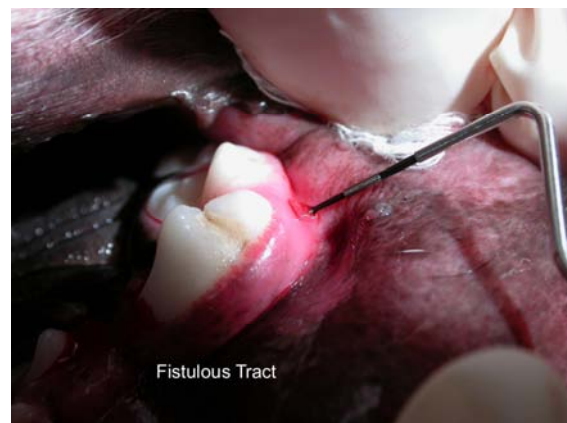
## CASE OF THE MONTH (December 2006)

### Signalment and History:

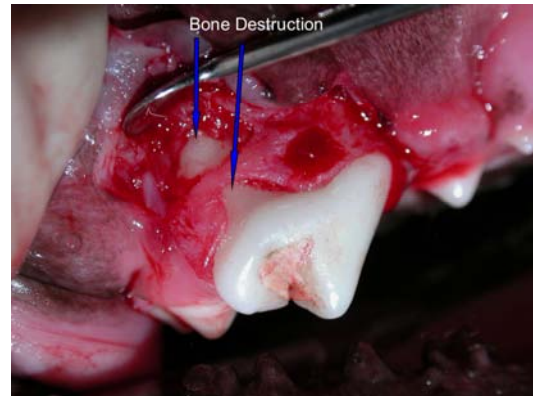
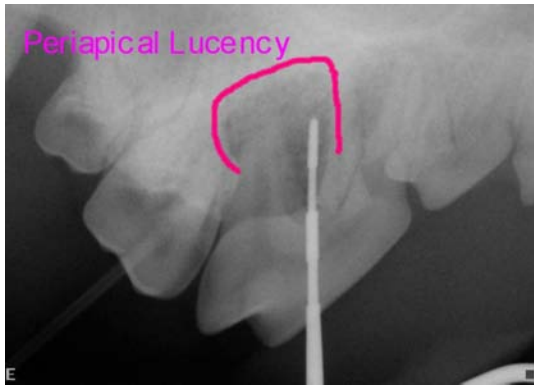
A 16 month old neutered male Boston Terrier presented with a right infraorbital swelling and no apparent dental disease. Although there was mild calculus present on the 4th premolar, there was no fracture, crown discoloration, or obvious gingival inflammation present.



The patient was treated with antibiotics and initially the swelling responded. After a recurrence, the patient was referred to our Oral Health Department for examination under general anesthesia and intraoral radiographs. An enamel defect was found on the palatal surface of the 4th premolar. A fistulous tract was also detected on the buccal surface of the 4th premolar.



Intraoral radiographs showed a large periapical lucency associated with the distal root of the 4th premolar. The periodontal probe illustrates a communication between the fistulous tract and the periapical lesion.



**Procedure:** A right infraorbital regional block with bupivacaine was administered. A full thickness mucoperiosteal flap was created for exposure and this revealed the extensive bone destruction and root exposure that had occurred. A high speed bur was used to remove a portion of the alveolar bone and section the three-rooted carnassial tooth into three single-rooted segments. After gentle elevation and extraction of these roots, the alveoli were curetted and the flap was closed with 4-0 Monocryl without tension. The patient was discharged with Clindamycin and Rimadyl for pain control. A one week post-op recheck found the patient to be fully recovered with no infraorbital swelling and exhibiting normal behavior and appetite.



**Discussion:** This case illustrates a few important points to consider when creating a list of differential diagnoses. First, this patient was only 16 months of age at presentation. At this young age, dental disease is not usually high on the list of suspects for causing an infraorbital swelling. This underscores the fact that we need to be suspicious of dental disease regardless of the age of the patient.

Secondly, the affected tooth did not have a direct pulp exposure such as a fracture. However, it did have an enamel defect, possibly due to enamel hypoplasia, or possibly due to a fracture from chewing on some hard object. Once the enamel is gone, the dentin is exposed to the oral environment. Dentin is a porous material, having some 30-40,000 microscopic tubules per mm<sup>2</sup> of surface area. These tubules have a direct communication with the pulp of the tooth. Bacteria are able to travel through these tubules, infect the pulp of the tooth, and in this case, cause pulp necrosis resulting in an abscess. It is important to note that a tooth abscess can occur without a direct pulp exposure.

Thirdly, this case demonstrates the importance of general anesthesia when performing a thorough oral exam. The location of the enamel defect in this patient made it impossible to visualize without general anesthesia.

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