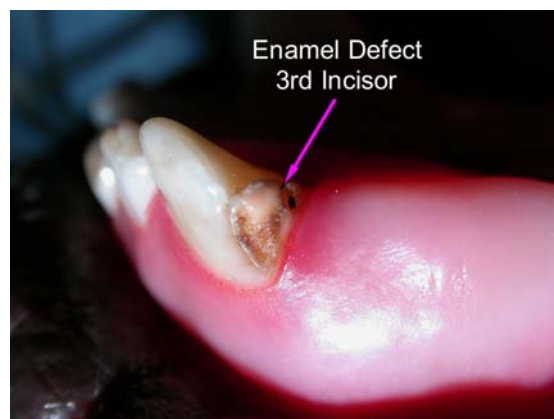


CASE OF THE MONTH (February 2008)

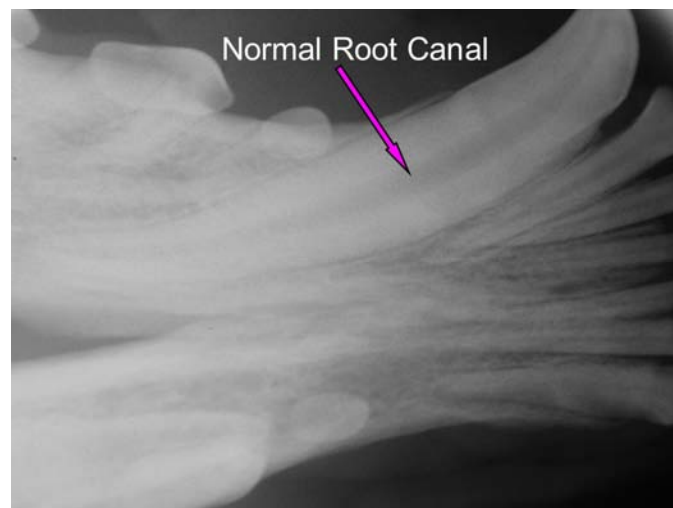
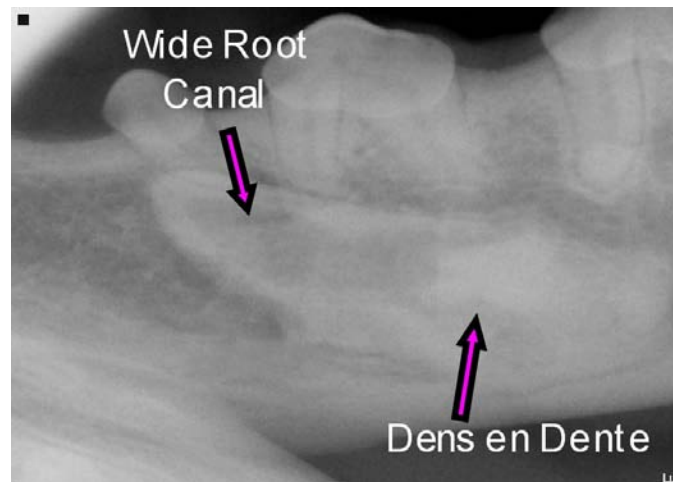
Signalment and History:

A 20 month old spayed female Great Dane presented with a missing left mandibular canine tooth.

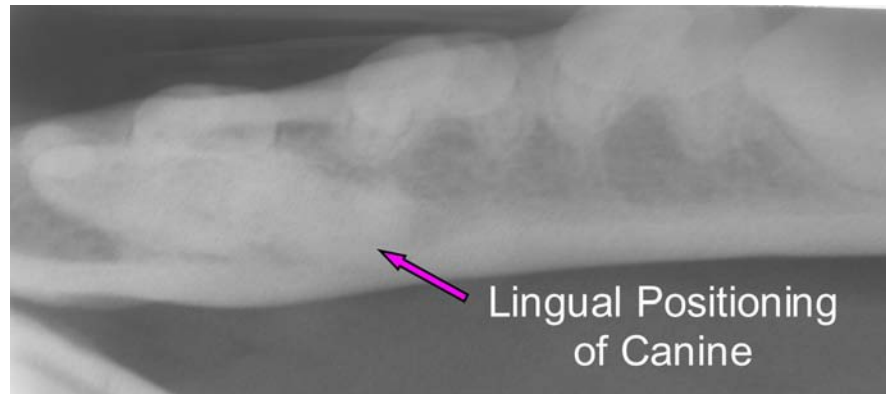
The patient was placed under general anesthesia and a complete oral examination was performed. The left mandibular 3rd incisor showed extrinsic staining and a deformity of the cusp on the distal margin. No other oral pathology was found.



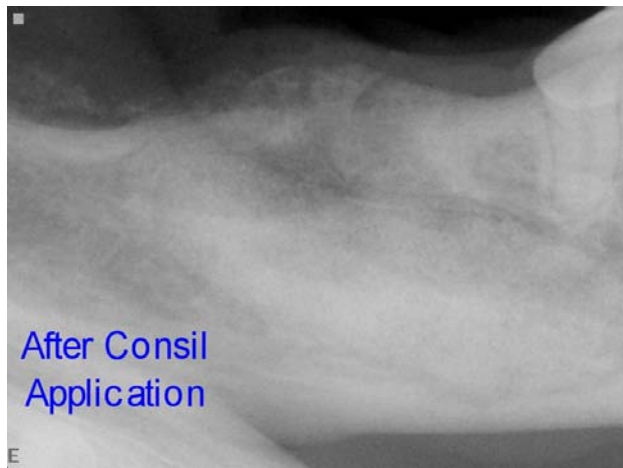
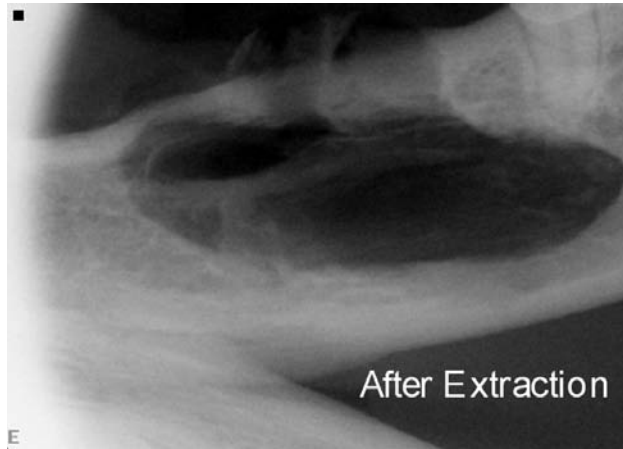
Intraoral radiographs were taken and the left mandibular canine tooth (304) was found to be impacted. This tooth was located more caudal than normal. The tip of the cusp was located at the level of the first premolar and the apex was at the level of the 3rd premolar. We determined that this tooth was non-vital due to the large size of its root canal when compared to the same tooth on the opposite side. This tooth also exhibited an abnormal internal structure that suggested dens en dente formation. The surface of the cusp of this tooth appeared to be scalloped and uneven. A radiolucency around the cusp indicated early dentigerous cyst formation.



Procedures: A decision was made to surgically extract this tooth. An occlusal intraoral image was obtained to determine the best surgical approach. This image showed that the impacted canine was located medial to the mandibular canal, so we elected to make an intraoral lingual approach.



A full thickness mucoperiosteal flap was created for exposure and the 1st and 2nd premolars were extracted to enhance exposure of the impacted canine. A dental bur on a highspeed handpiece was used to remove the bone overlying the impacted tooth. The restricted visibility from this approach led to some difficulty in determining how much bone needed to be removed for complete exposure of the tooth. Therefore we periodically exposed radiographic images with a probe placed in the surgery site to assess our progress. Once the tooth was removed, a post-op radiograph demonstrated a large defect remaining in the mandibular bone. This defect was filled with Consil, an osseoconductive product, to aid in alveolar ridge integrity and to help maintain the strength of the mandible. The periodontal flap was closed with simple interrupted sutures of 4-0 gut.





Discussion: In previous cases we have emphasized the importance of radiographing areas of missing teeth. Often the tooth is truly missing and no treatment is needed. The presence of an impacted tooth requires surgical intervention. This tooth showed evidence of early dentigerous cyst formation as well as pulp necrosis. Either of these conditions demands immediate attention. A dentigerous cyst may lead to painful swelling, a weakening of the mandible, and eventually, an ameloblastoma. Pulp necrosis leads to production of chemical inflammatory mediators which cause pain. In addition, necrotic tissue is predisposed to anachoresis, or blood born infection.

The clinical evidence in this case suggests trauma as the etiologic agent. The enamel defect seen on the left mandibular 3rd incisor is a developmental anomaly that occurred while this tooth was developing subgingivally. This damage occurred during the process of amelogenesis, or enamel production. Likewise the damage to the unerupted canine arose during its development. Systemic disease during the development of these teeth could cause these defects. Systemic involvement, however, would likely involve other areas of the oral cavity as well. The localized aspect of these defects implicates trauma as the likely culprit.

“Dens en dente” literally means “tooth within a tooth”. This condition is an uncommon developmental anomaly characterized by an invagination of the enamel, dentin, and pulp within the tooth bud, radiographically giving the appearance of a tooth within a tooth. This tooth was submitted for histopathological evaluation and this diagnosis was confirmed. Again, the likely cause in this case is trauma.



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