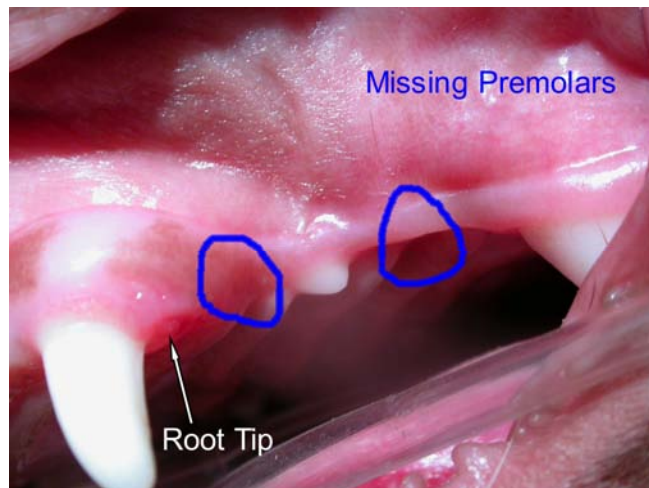


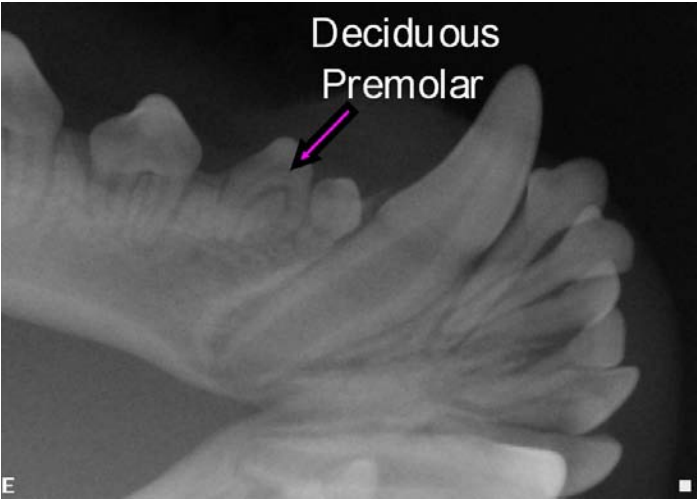
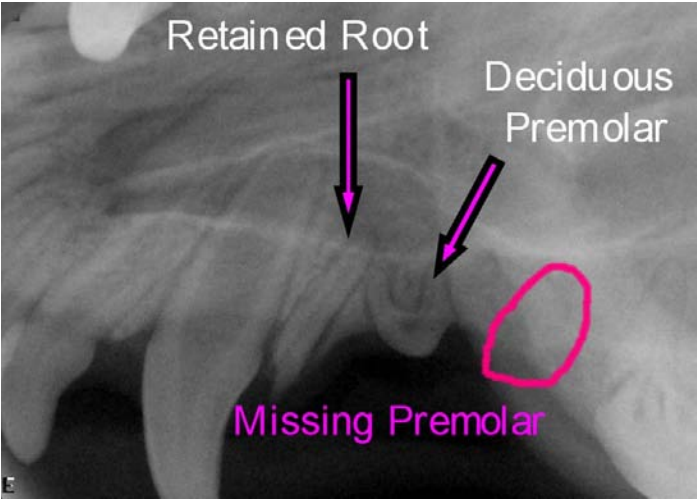
## CASE OF THE MONTH (June 2007)

### Signalment and History:

A nine month old male Chihuahua presented with multiple missing teeth. During the initial oral examination with the patient awake, it was determined that the first and third maxillary premolars were missing bilaterally. Since a complete oral examination cannot be performed without general anesthesia, it was emphasized to the owner that additional pathology might be detected after anesthetizing the patient.



During the oral exam under general anesthesia, we found that both mandibular third molars were missing as well. In addition, we discovered a fractured root tip just distal to the left maxillary canine tooth. Full mouth radiographs revealed a retained root of the left maxillary deciduous canine tooth in this position. We also found that all of the above listed missing teeth were, in fact, truly missing. A coincidental finding was that the second premolars in all four quadrants were, in actuality, deciduous teeth with no permanent succedaneous teeth.



**Procedure:** A left infraorbital regional block with lidocaine and bupivacaine was administered. A vertical longitudinal incision was made over the retained deciduous canine root through the attached gingiva and into the alveolar mucosa. The retained root was removed and the incision closed with 4-0 Monocryl.



**Discussion:** Several important points can be illustrated with this rather simple case. First, “the real oral examination begins under general anesthesia.” No matter how thoroughly you might examine your patient while awake in the exam room, it is very common to discover additional pathology once the patient is anesthetized. At this time the patient is not jumping all over the exam table and resisting your diagnostic efforts. Additionally you are able to use an important tool, the periodontal probe, which would be uncomfortable in a patient that is awake. You are able to accurately count all of the teeth with the aid of general anesthesia. The third mandibular molars are commonly missing in small breeds of dogs, but it is nearly impossible to accurately confirm their presence or absence without anesthesia. A great opportunity for accurately counting teeth is when the young patient is already under general anesthesia for a neuter or ovariohysterectomy. Finding subgingival teeth and dealing with them at this time will prevent much oral pathology in the patient’s future.

Intraoral radiography, which can only be performed under general anesthesia, can open up a whole new world of oral diagnosis. In fact, sixty per cent of oral pathology is hidden beneath the gingiva where it will go undetected without radiography. The status of missing teeth can only be evaluated through intraoral radiography. If an apparently missing tooth is found to be present but unerupted, there is potential for the formation of a dentigerous cyst which can cause serious damage to the surrounding bone and neighboring teeth. Left untreated, a dentigerous cyst can also transform into an ameloblastoma. Dentigerous cysts will be discussed in more detail in a subsequent newsletter.

Once the apex of a tooth is closed, the potential for further eruption has ceased. If an unerupted tooth has a closed apex, it needs to be extracted to remove the potential of becoming a dentigerous cyst. If an unerupted tooth has an open apex, it may be possible to enhance its chances of eruption through the use of an operculectomy procedure.

Another finding in this case was that the second premolars in all four quadrants were deciduous teeth with no permanent successors to take their place. We did not extract these teeth because they had a normal, healthy root structure and our belief is that a deciduous tooth is better than no tooth at all. In many of these cases the deciduous teeth will last the lifetime of the patient. However, if a problem occurs with such a tooth later on, it can be dealt with at that time.

Last but not least, a retained root should be extracted whether it is deciduous or permanent. The fracture of the deciduous canine tooth in this case caused a pulp exposure, which leads to bacterial invasion and pulp necrosis. Periapical extension of the pulp infection can also damage the permanent tooth.

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