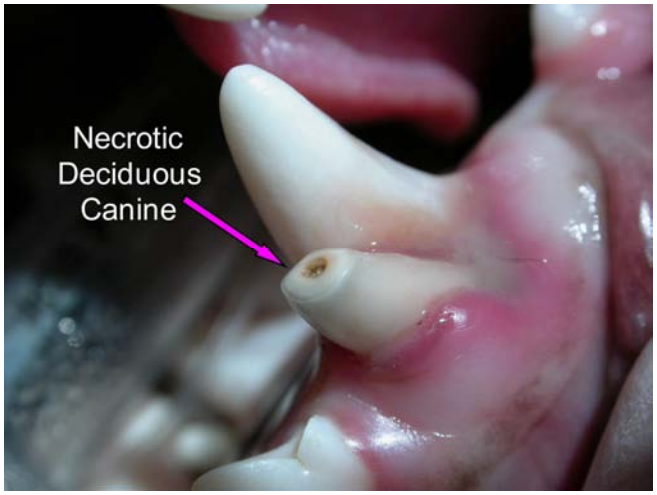
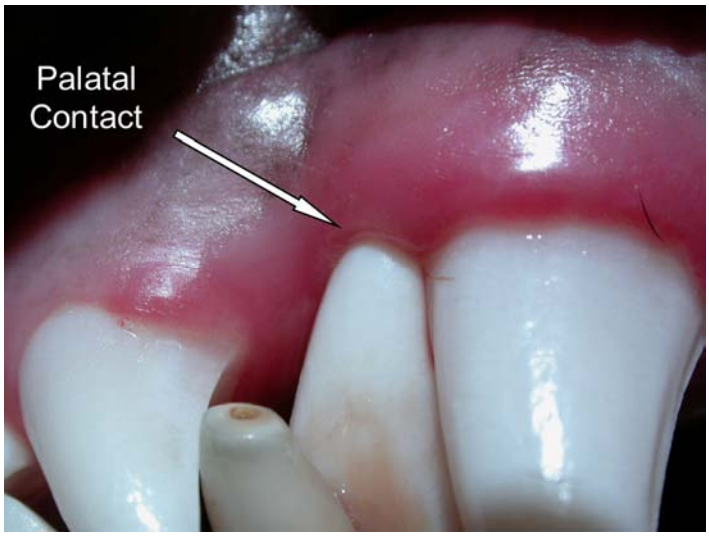
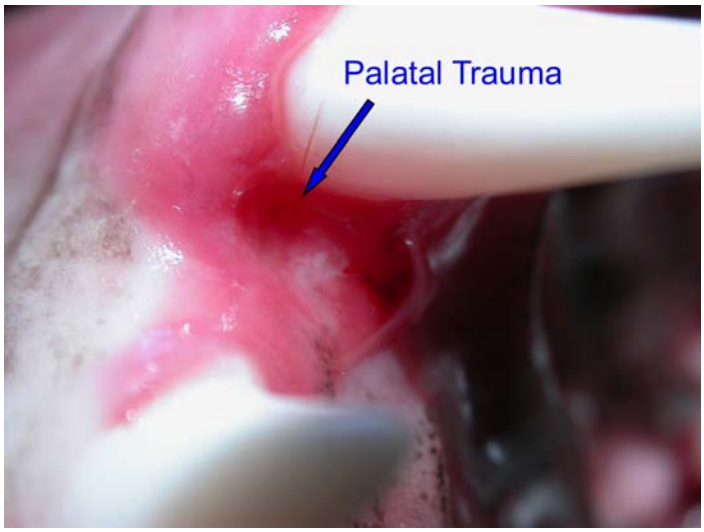
CASE OF THE MONTH
(November 2007)

Signalment and History:

A six month old female German Shepherd presented with bilateral retained mandibular deciduous canine teeth. Both teeth had transverse fractures of the cusps with pulp exposure and as a result, both were non-vital. In addition, the left mandibular permanent canine tooth was base narrow in position and was contacting the edge of the palate, causing palatal trauma.




Palatal
Contact


Palatal Trauma

Procedures: Pre-extraction radiographs were taken and both deciduous canine teeth were extracted. Both teeth showed evidence of abscessation when extracted.

The base narrow left mandibular canine tooth was impaled in a rim of gingival tissue at the edge of the hard palate in the diastema between the left maxillary 3rd incisor and the left maxillary canine tooth. In order to correct this situation we first used a CO_2 laser to perform gingivoplasty for the removal of the gingival rim. This step prevents the tooth from becoming impaled in this tissue again in the future. Next we acid etched the cusp of the mandibular canine tooth and created a composite extension on the tip of the tooth. This extension in essence lengthens the tooth and this also prevents the tooth from becoming impaled in the gingiva again. In addition, it creates a lever effect and each time the patient closes her mouth a passive orthodontic force is created which pushes the canine tooth buccally or laterally into the normal position.


Gingivoplasty


Composite
Extension


Completed
Procedure

Discussion: If you look closely at the photos of the fractured deciduous canine teeth, you will see that these fractures are perfectly transverse and symmetrical, almost as if they were fractured intentionally. This is, in fact, what happened in this case. The practice of "clipping" retained deciduous teeth in puppies is performed by some breeders in hopes that the resulting infection in these teeth will speed up the exfoliation process and cause them to fall out.

There are several reasons why this procedure is to be condemned. First of all is the severe pain that results from direct pulp exposure. When the pulp is exposed to the oral cavity, the nerves of the pulp are also exposed, causing severe pain, the same as if this procedure had been performed upon a human youngster.

When the pulp is exposed, this creates a wide open avenue for bacterial migration into the pulp, resulting in irreversible pulpitis and pulp necrosis. After killing the pulp of the tooth, this endodontic infection migrates through the apical delta at the apex of the root and infects the alveolar bone supporting the tooth. In some cases it will also cause damage to the permanent tooth that resides close by. Ironically, this infection also kills the osteoclasts, the very cells that are instrumental in the resorption of the deciduous tooth that cause it to fall out. After their death, the loss of the tooth is often actually delayed.

From an orthodontic perspective it is important to remember that the permanent mandibular canine tooth always erupts to the lingual side of the deciduous tooth. If the deciduous tooth is still present in the mouth when the permanent tooth erupts, the permanent canine tooth has the potential of erupting too far lingually and contacting the roof of the mouth, resulting in palatal trauma.

Another potential problem with leaving a deciduous tooth in the mouth after the permanent tooth has begun erupting is crowding of the teeth. Any time the teeth are crowded there is an increased chance of food, hair, and other debris accumulating in this area and predisposing to periodontal disease.

The rule of dental succession states that "no two teeth of the same type should remain in the mouth at the same time." This means that as soon as the permanent tooth appears peeking through the gingiva, the deciduous tooth should already be gone. If it is still present, it must be extracted immediately. To wait and see what happens is asking for trouble and is not the proper thing to do.

COMMUNITY ANIMAL HOSPITAL
John A. Koehm, D.V.M., F.A.V.D.
Fellow of the Academy of Veterinary Dentistry
4871 Summit Ridge Drive
Reno, NV 89523
(775)-746-0333