

## FOCUS ON: FELINE MALOCCLUSIONS

We see all sorts of malocclusions in dogs, largely because of the very broad range of shapes and sizes found among the various dog breeds. Pet cats have far less variation in shape and size and in general, have not been too dramatically altered from what nature has in mind for this species. Therefore, malocclusions in cats are less common than in dogs but they certainly do occur. Of course, some breeds, such as the brachycephalic breeds, are more prone to skeletal malocclusions than the DSH.

As with dogs, noting and addressing the malocclusion early can make a big difference for the patient. Put another way, failure to notice and address these problems can allow a bad situation to get much worse.

In essence, any time there is abnormal tooth-to-tooth or tooth-to-soft tissue contact some form of intervention is indicated. Since cats are obligate carnivores, they have a sectorial relationship with their posterior teeth (premolars and molars) which means that there should be no tooth to tooth contact at all. These teeth act like scissors to cut through tissue, not like our molars, which are designed to grind food.

One of the more common feline malocclusions we have been seeing in the last few years involves the sharp, prominent tips of the upper third and/or fourth premolars contacting and traumatizing the soft tissue of the mandible adjacent to the lower fourth premolar and molar respectively. Depending on the precise location and degree of contact, this may result in some localized gingival recession through to advanced periodontal disease of the lower teeth or ulceroproliferative lesions on/in the oral mucosa of the mandibles.

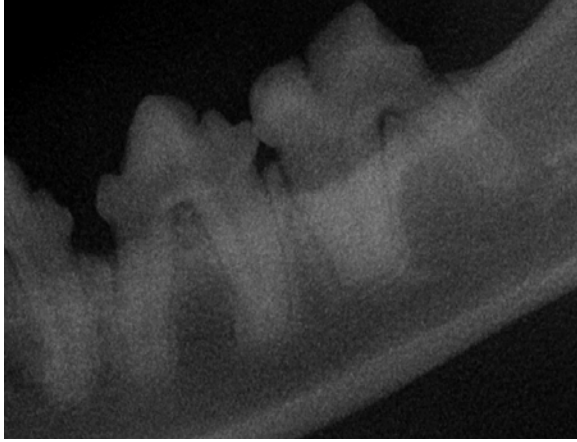
In the first photo, we can see where the tip of the upper fourth premolar has caused significant gingival recession on the buccal aspect of the lower molar. In the close-up, we can also see minor gingival recession at the mesiobuccal aspect of the lower fourth premolar caused by the upper third premolar. These findings were bilaterally symmetrical (i.e., the right side of the mouth looked just the same). These photos were

taken with the patient anesthetized on February 5<sup>th</sup> of 2007.



As always, before making any treatment decisions, intra-oral dental radiographs must be taken and here they are. The first film is of the left upper third and fourth premolars and molar and are within normal limits. The second film is a close-up of the left lower fourth premolar and molar and again, there are no radiographic abnormalities.





And here is a photo of the lower left molar on March 1<sup>st</sup> of 2007. While there is still some permanent tissue loss (gingival cleft), there is sufficient attached gingiva for good periodontal support of this tooth and the tissue now looks considerably healthier than pre-op.



Based on the clinical and radiographic findings, a conservative approach was selected. This involved odontoplasty (reshaping of the crown of the tooth) of the upper third and fourth premolar teeth to shorten and blunt them to take them out of contact with the mandibular tissues. This procedure is NFCO (see page one) as it will almost certainly end up exposing the porous dentin on the crown of the tooth (see [www.toothvet.ca/PDFfiles/endo.pdf](http://www.toothvet.ca/PDFfiles/endo.pdf) for more information on why that is a concern). The next step is to seal the freshly exposed dentin with a bonded resin to seal the tubules, reduce sensitivity and prevent oral bacteria from gaining access to the pulp inside the tooth.

In cases that have resulted in an ulceroproliferative soft tissue lesion on the mandibular oral mucosa, the odontoplasty will not be enough to alleviate contact with the hyperplastic tissue. Therefore, I also use radiosurgery to sculpt away the excess tissue.

The next photo is of the crowns of the left upper third and fourth premolars following odontoplasty and application of a bonded resin to seal the dentin. The change to the shape of the teeth is minor, but sufficient in this case to alleviate the contacts. If more than this amount of coronal tissue had had to be removed, it would have approached too close to the pulp for my comfort-level and I would have elected to extract the offending teeth.

If by the time the problem is noticed there is more serious periodontal disease than in the above case or any tooth resorption, I would extract the diseased lower teeth and the now-useless upper teeth. If you just remove the lower teeth, the upper teeth may traumatize the extraction sites resulting in recurrence of the problem.



The difference between a case that is managed by odontoplasty and sealant versus extractions can be very minor and subtle and it requires a very close inspection of the situation in three-dimensions to plan appropriate treatment for these cats. The most important thing that you, as a general practitioner can do is to be aware of the malocclusion and look for it in all your patients, especially juveniles who have just erupted their adult teeth. If there appears to be contact, have it treated without delay.