Feline Enigmas
Are we any closer to the truth?

I was recently asked to speak at the Hill's European Symposium on Oral Care in Amsterdam. Among the speakers were Colin Harvey (University of Pennsylvania) and Ross Harley (University of Bristol) speaking on odontoclastic resorptive lesions and feline gingivstomatitis respectively. Though there continues to be considerable research into the etiology of these conditions, the answers still elude us. However, there were some interesting new findings brought to light that are worth sharing.

With regard to Odontoclastic resorptive lesions, there have been a number of interesting studies and ideas published or soon to be. Though we used to call these "neck lesions" because they seemed to occur at the cervical part of the tooth (the junction of the crown and root), it is now apparent that they can occur anywhere along the root.

One study looked at 80 clinically normal teeth from cats that had at least one clinical resorptive lesion. 100% of these clinically normal teeth had microscopic evidence of early resorptive lesion within the periodontium, usually in the non-cervical area.

A similar study looked at several clinically normal teeth from cats with clinical ORLs and some from cats with no clinical ORLs. In this study, 60% of the teeth from ORL cats had microscopic external root resorption while only 8% of teeth from ORL-free cats had such microscopic lesions. All of these microscopic lesions were in the middle or apical portion of the root.

Histologically, affected and clinically normal teeth in ORL-affected cats tended to have thicker, irregular cementum, especially in the region of the alveolar crest when compared with ORL-free cats.

Finally, a study looking at serum calcitonin and serum 25 Hydroxy Vitamin D found that the levels of both were significantly higher in ORL-affected cats than in ORL-free cats.

What do all these studies mean? It's still too early to say for sure. But the finding of the microscopic lesions certainly explains why restoring clinical lesions does not work. Filling the big holes does nothing to stop the process from continuing to destroy tooth structure. The final study also suggests that ORLs might be the result of Vitamin D toxicosis. We have been fooled into thinking we have the answer before, only to find it was another blind alley. We will have to wait to see if this hypothesis holds up under scrutiny.

Dr. Harley reiterated that feline gingivostomatitis is an aberrant local immune response of unknown origin. He suggested that a persistent antigen exposure leads to an aberrant or frustrated immune response that leads to tissue damage. This poses a number of questions.

What is the antigen? Frequently these cats act as if the antigen if bacteria (plaque intolerance theory) in that they respond (to some degree) to a thorough oral hygiene procedure and/or antibiotic therapy. Bartonella has been implicated, though the proponent of this theory just happens to own the only lab that offers a diagnostic test for Bartonellosis. Other suspects include feline calici virus, herpes virus, dietary antigens and host antigens.

Cats with chronic gingivstomatitis may have elevated serum IgA, but they tend to have reduced salivary levels of IgA – is this a cause or a result of the condition?

The damage caused by chronic gingivostomatitis provides a pathway for further antigen exposure and so the problem tends to become self perpetuating. Epithelial ulcerations, ORLs and periodontal attachment loss all make the cycle of inflammation and tissue destruction hard to break. Though various medical regimens have shown some promise in some cats, extraction continues to be the most reliably predictable way to help these cats. If extraction does not clear the problem, it at least makes the cats easier to manage medically.

Some cats, even after whole mouth extraction, continue to have trouble. One possibility is that the antigens (bacterial, viral, dietary?) enter the tissues by ascending the salivary ducts. There is some histological evidence that this is happening at least in some cases.

So, we have not yet solved the riddle of the etiology of these frustrating feline conditions, nor can we offer much in the way of treatment other than extraction. However, we are getting closer and while we are going about our daily lives, it is good to know that there are vigilant and energetic researchers working hard to get us the answers we need.