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[Home](#) > Tooth resorption: Name it to tame it in your veterinary patients

## Tooth resorption: Name it to tame it in your veterinary patients

Tooth resorption is present in almost all our patients, but how do you classify it, and when do you treat it? Veterinary dentist Dr. Mary Volker has answers.



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VETERINARY MEDICINE

When it comes to tooth resorption, nomenclature is important, [Fetch dvm360](#) educator Mary Krakowski Volker, DVM, DAVDC, a partner at Animal Dental Center, tells us. Why? Because treatment depends on the type of resorption present. And of course we don't use the same names in both dogs and cats because that would be too easy.

Currently, there are three types of tooth resorption in cats, and six types in dogs, and all of them are treated differently, says Dr. Volker. Are you treating correctly?

### The case in cats

In Dr. Volker's mind, every cat has tooth resorption until proven otherwise—up to 67% are affected depending on which study you read. It's painful and progressive—we cannot stop the resorptive process—and the cause of the disease has still not been determined. Tooth resorption is more common as cats age and is usually present in multiple teeth. The mandibular third premolar is the most common tooth affected. If you are examining a cat and notice a gingival "lump" in the area where a third premolar tooth should be, that is almost always secondary to tooth resorption, says Dr. Volker.

The types of feline tooth resorption:

**Type 1:** A hole is present in the tooth (Figures 1 & 2). Typically, the resorptive lesion is found at the cemento-enamel junction or furcation. Radiographically, the tooth roots have the bright opacity of a root and a clear periodontal ligament space is present.

Treatment: Extraction is indicated.



Figure 1 (all photos courtesy of Dr. Mary Volker)



Figure 2

**Type 2:** The roots are replaced with alveolar bone (you'll note radiographic evidence of reduced radiodensity of the roots and loss of periodontal ligament, and the roots will appear to have an opacity similar to adjacent alveolar bone; Figures 3-5).

**Treatment:** If the crown is involved, perform a crown amputation. If only the root is involved, periodic radiographic monitoring is recommended, or a crown amputation can be performed.



Figure 3

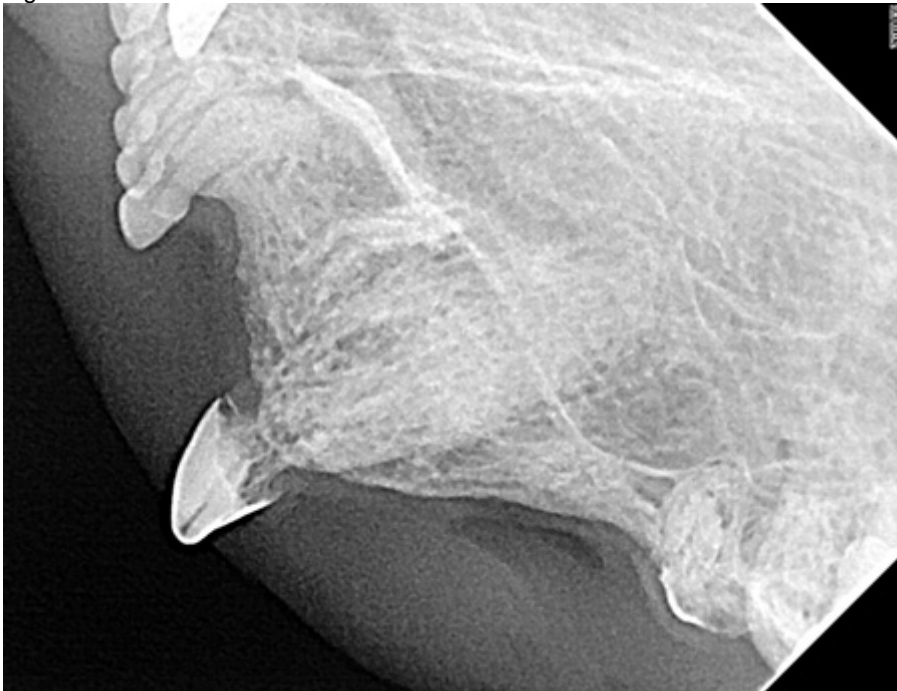


Figure 4



Figure 5

Type 3: One root is Type 2 and one root is Type 1 (Figure 6).

Treatment: Section the tooth, and treat each root according to the type of resorption present.

Note that early Type 2 tooth resorption is typically not painful if it only involves the root (i.e. if it is only radicular without coronal or supragingival involvement). It becomes painful when the crown is involved. If your explorer does not detect a lesion supragingivally, Dr. Volker says you can offer crown amputation at the time of diagnosis, but you do not necessarily have to treat at that time. However, it's very important to prepare the client by saying it will progress (but it may take years!) and will typically require treatment at some point.



Figure 6. A tooth with Type 3 tooth resorption, where the mesial root of the third premolar tooth has Type 1 tooth resorption and the distal root has Type 2 tooth resorption.

## The details in dogs

Tooth resorption is most common in large-breed dogs and older dogs, says Dr. Volker. In dogs, treatment depends on whether the tooth is alive or not as well as whether there's inflammatory tooth resorption. Even though there are six types, Dr. Volker says general practitioners should focus on the three most common types—non-inflammatory external replacement resorption, apical periodontitis (external inflammatory resorption) and external cervical root surface resorption.

**Non-inflammatory external replacement resorption.** This type of resorption is similar to Type 2 in cats and is most likely progressive. Most of the time, these teeth appear normal on oral examination and the dog is asymptomatic. The cause is unknown but the condition seems to occur more in dogs that are heavy chewers and may be due to the death of periodontal ligament fibers from repeated compression, says Dr. Volker. Periodic radiographic monitoring is recommended if there is only radicular (root) involvement and the teeth otherwise appear vital radiographically and clinically. Treatment of lesions that involve the crown is crown amputation, but treatment is not required until the resorption involves the crown, at which point Dr. Volker says it becomes painful. If you don't treat that day, remember to document it!

**Apical periodontitis.** External inflammatory resorption, a.k.a. a tooth root abscess, is the most common type in dogs, says Dr. Volker. Carnassial teeth are over-represented because those are the teeth dogs tend to fracture. Dr. Volker perfectly describes this type as having a halo around a "gnarly"-looking root apex on radiograph. In comparison, non-inflammatory external replacement resorption is smooth and has the opacity of bone. Technically speaking, she would record it as "a complicated crown-fractured maxillary fourth premolar tooth with evidence of inflammatory apical resorption." Treatment is extraction or root canal therapy, depending on the degree of resorption.

**Cervical root surface resorption.** This is an external inflammatory resorptive defect at the cemento-enamel junction, often in the furcation. These guys look very similar to Type 1 resorption in cats and clinically present like a tooth with a big hole in it. Dr. Volker sees this condition most commonly in small-breed dogs with concurrent periodontal disease. These lesions will be noticeable in different locations than where caries might occur; caries tend to occur on occlusal surfaces whereas these resorptive lesions are near the cemento-enamel junction. Treatment is extraction.

A few dental pro tips from Dr. Volker:

Instead of charging per tooth extraction, Dr. Volker recommends charging for surgical time, because everyone knows that the time it takes to extract a canine tooth or carnassial tooth in a German Shepherd is not the same as that in a Chihuahua.

If you're struggling to get a cat owner to consent to an anesthetized dental examination and professional dental cleaning, then you likely will have a battle on your hands if you then turn around and tell the client that their cat needs extractions for problems that they can't appreciate. Dr. Volker says that when counseling owners, prepare them before anesthesia that even though the mouth looks normal, you may find tooth resorption that will need to be treated.

Fully examine the mouth of every pet before anesthetizing that pet and performing any dental work—this allows you to give the owner a more accurate treatment estimate. Save your fingers by using the end of a long cotton-tipped applicator to lift the lip on an angry cat.

Cats should have full-mouth dental radiographs every time they are anesthetized for dental work. A skilled technician should be able to take full-mouth radiographs in three to four minutes, and the patient can remain in dorsal recumbency for all views.

Inflammatory mediators associated with oral neoplasia are associated with higher rates of tooth resorption of teeth at tumor sites as well as sites distant from the oral tumor.

There are **stages** of tooth resorption in cats that describe how far the disease has progressed, but Dr. Volker says don't get caught up in stages, because **type**, which determines treatment, is much more important to a general practitioner.

Always note missing teeth in the record, always recommend radiographs to the client and, if declined, document that you recommended dental radiographs to the client. Dental radiographs should be mandatory. If they are made an option most clients will elect to "opt out" and save some money. Dental radiography is good medicine, and good medicine is good business!

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