

FELINE STOMATITIS/GINGIVITIS: WHEN YOU'VE TRIED EVERYTHING ELSE!

True or False - Full-mouth extraction is too aggressive.

False: The decision to recommend full-mouth extractions can be a difficult one. A pet owner's first response to this recommendation usually goes something like this: "You want to do what!? Doesn't that seem drastic? How will my pet eat?" *Veterinary practitioners understand clients' concerns and give much thought to the treatment plans they recommend.* In many cases, the veterinarian may be intimidated by the thought of extracting all the teeth and therefore reluctant to advise this course of action. However, for a few oral disease processes, this is in fact the best treatment. Feline stomatitis/gingivitis is one such disease (Fig. 1). While it is not yet known what causes this disease, it is believed that dental plaque plays a significant role in the inflammatory process.

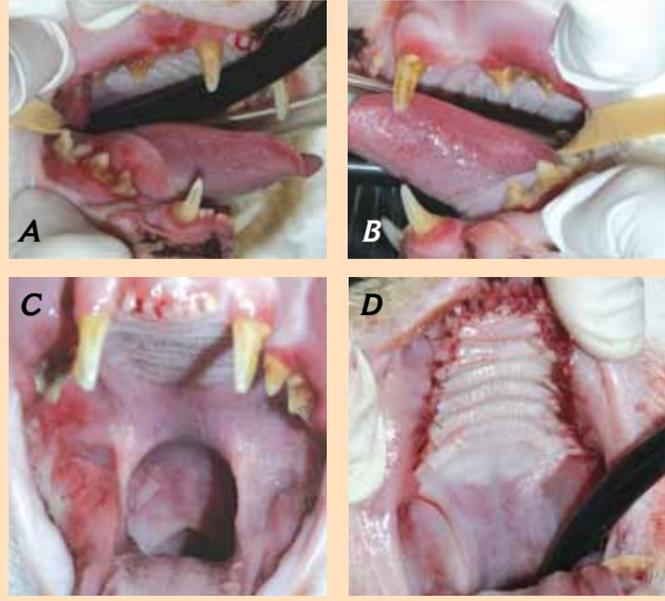


Fig. 1 Photographs of an 11-year-old DSH cat with severe stomatitis/gingivitis surrounding all teeth (A and B) and stomatitis present in the area lateral to the right palatoglossal fold (C). Closure of mucoperiosteal incisions following full mouth extractions (D).

the long term, this procedure is more likely to succeed than medical management using antibiotics, corticosteroids, and/or immunosuppressive drugs. If full-mouth extraction is indicated, then don't wait to make the recommendation. Many cats' mouths are so painful with their teeth that *they actually feel better and eat better the day after surgery than they did the day before.* Some will even eat hard food again! Because we know that most cats recover extremely well following full-mouth extractions, we believe that you can recommend this treatment with confidence (Fig. 2).



Fig. 2 Complete healing of mucosal incisions 2 weeks postoperatively.

Since most cats do not allow daily tooth brushing, this presents a significant problem in trying to manage the disease medically. *Stomatitis/gingivitis is also a very painful disease process and causes many cats to become anorexic.* In our experience, full-mouth extraction is the only treatment that results in significant improvement or complete resolution of clinical signs in the majority of cats (about 80-90%). In

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SUMMER NEWSLETTER

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Drs. Mark M. Smith and Kendall G. Taney are partners in the Center for Veterinary Dentistry and Oral Surgery established in 2006. Dr. Smith is a Diplomate of the American College of Veterinary Surgeons and the American Veterinary Dental College. He was Professor of Surgery and Dentistry at the VA-MD Regional College of Veterinary Medicine at Virginia Tech for 16-years before entering private practice in 2004. Dr. Smith is Editor of the Journal of Veterinary Dentistry and co-author of Atlas of Approaches for General Surgery of the Dog and Cat.



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LEAVING BROKEN TOOTH ROOTS - PLAYING WITH FIRE!

True or False - Generally it is acceptable to leave broken tooth roots since it does not cause a problem.

False: Leaving broken tooth roots almost always causes a problem especially in diseased teeth. *The dog seems fine... the retained tooth roots must not be a problem.*

Do you have a radiograph to support this assumption? Many times when there are missing teeth radiographs reveal the presence of tooth roots, and worse, infected tooth roots (Figs. 1-3). The dog or cat may "seem fine" to the owner based on continued eating and drinking, but pets have a high priority to eat and drink just like we do! Surely, periapical abscesses would be painful as they are for us. Owners understand that it can be difficult to remove the equivalent of "wisdom" tooth roots. Fracturing tooth roots is inevitable and happens to us too! If you do not have the proper equipment to remove fractured tooth roots, or are uncomfortable trying to "dig" them out, there is nothing wrong with a referral for this complication. *It seems that veterinarians are embarrassed to admit that tooth roots were fractured as a complication of the procedure.* Then again, how many referrals are made for other diseases or treatments that have complications eg. leaking bowel anastomosis or cystotomy closure; delayed fracture union or non-union; perforated corneal ulcer. The more extractions you do, the more likely this complication will occur. *And that's how we present the problem to owners.... a complication, not a mistake or error!* The key is to remove fractured tooth roots acutely or before they become a problem, or recommend that a specialist remove them. When owners ask *"Aren't tooth roots supposed to be removed as part of the extraction?"* We respond "yes, and that's why we are glad your veterinarian referred you and your pet to us so that we can help take care of this complication". It is important that the owner understands how difficult it can be to remove fragile, diseased tooth roots. Again, retained, fractured tooth roots are a complication. *Don't let it be an embarrassment!*

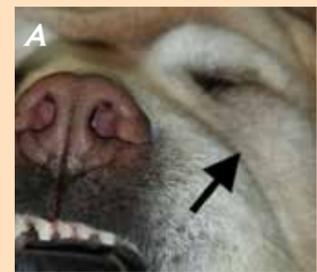


Fig. 1 Photograph (A) and radiograph (B) showing retained maxillary fourth premolar tooth roots and periorbital edema (arrow) in a Labrador retriever.



Fig. 3 Photograph (A) of a missing mandibular fourth premolar tooth, and fractured left carnassial teeth. A dental radiograph shows the retained tooth roots (arrow) and periapical abscesses of the fourth premolar and first molar roots (B).

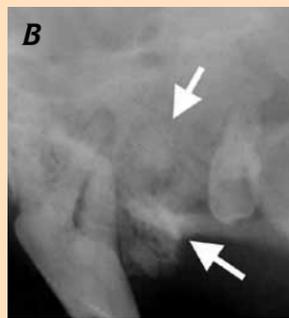


Fig. 2 Photograph (A) and radiograph (B) showing retained maxillary first molar tooth roots (arrows) and fourth premolar abscess with an associated periorbital draining tract (arrow).

DENTAL EMERGENCIES.

True or False - There are no emergencies in veterinary dentistry.

False: Fortunately there are very few true emergencies in veterinary dentistry. True dental emergencies are generally a result of direct trauma to the teeth or oral structures. Tooth avulsion is one such emergency. This most commonly occurs with the maxillary canine tooth and may be a result of a pet getting its mouth stuck in something and pulling back forcefully, or dog fight or other trauma. A complete avulsion occurs when the entire crown and root are removed from the socket (Fig. 1). There can also be lesser degrees of avulsion or luxation which should be treated as soon as possible. For complete avulsion, it is best to replace the tooth properly within one hour of the incident. This is a very short period of time and may not always be possible. If you have a client who calls or presents a pet with this injury, the tooth should not be cleaned or manipulated in any way, but should be placed into a cup of milk immediately and should be referred for replacement of the tooth. Water is not an appropriate medium for maintaining the periodontal ligament cells that need to be vital for reattachment of the tooth into the socket.

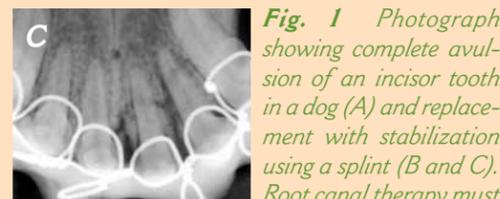


Fig. 1 Photograph showing complete avulsion of an incisor tooth in a dog (A) and replacement with stabilization using a splint (B and C). Root canal therapy must also be performed in 2-4 weeks due to disruption of the blood supply to the tooth.

Once the patient arrives at our facility, we will replace the tooth into the socket and stabilize it with a splint for 4-6 weeks (Fig. 1). These teeth will always require root canal therapy because the blood supply will be permanently disrupted, however, the teeth often heal within the socket and continue to be functional.

Another time-dependent emergency in veterinary dentistry is a complicated tooth fracture in an animal less than 18-months of age (Fig. 2). Pets under 18-months of age may not have fully developed root structures and it is very important to try to preserve the vitality of a fractured tooth so that it may continue to mature into a functional part of the dentition (Fig. 3). A procedure called a vital pulp therapy can be performed to keep the tooth "alive" so it can develop normally (Fig. 3). It is important to know exactly when the fracture/trauma occurred because as time increases the likelihood that the tooth will survive decreases. The basic rule is that these teeth should be treated within 48-hours of the trauma. If you have a patient that you suspect has had one of these injuries or any injury you feel needs immediate attention, please do not hesitate to contact us and we can treat them on an emergency basis during our normal business hours.

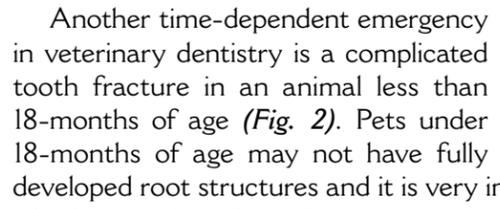


Fig. 2 Diagram (A) and photograph (B) of a fractured tooth with pulp exposure, also known as a complicated crown fracture.

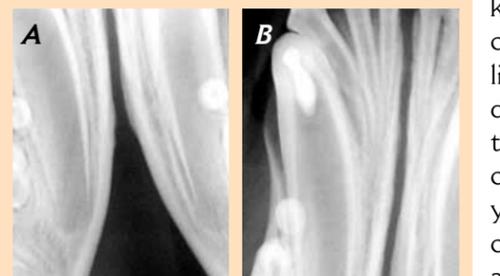


Fig. 3 Radiograph of immature canine teeth with open apices (A). When these teeth are fractured, they are best treated with vital pulp therapy within 48-hours of the injury (B).

SAVING TEETH WITH PERIODONTAL DISEASE.

True or False - The only treatment for periodontal disease is extraction of the teeth.

False: Periodontal is a term that describes the tissues that support or are "around" the teeth as one would expect from the origin of the word. The periodontium is made up of four tissues that include the alveolar bone, periodontal ligament, cementum of the tooth root, and the gingiva. Periodontal disease presents as four grades of severity. Grade 1 periodontal disease is gingivitis and is the only truly reversible stage because there has not been any loss of periodontal tissues. Grade 2 periodontal disease involves up to 25% loss of some portion of the periodontal tissues, usually alveolar bone around the neck of the tooth. As the severity of disease increases, the percentage of periodontal tissue loss increases. Grade 3 is 25- 50% loss and grade 4 is greater than 50% loss of periodontal support (Fig. 1). Most teeth classified as having stage 4 disease are quite mobile and in nearly all cases will be recommended for extraction. Some periodontal pathology may be the result of retained deciduous teeth or nearby severely diseased teeth (Fig. 2). There are techniques available that can save strategic teeth that are not in the very advanced stages of periodontal disease. These techniques are dependent on a dedicated owner and the right patient. If the owner is not able or willing to perform excellent home care then these techniques may be wasted. Periodontal surgery first involves removing diseased tissue around the tooth in question. Advanced flap techniques can be used for access to the disease periodontal tissues (Fig. 4A). Once thorough debridement is performed, there are many materials available that can potentially allow for "regrowth" of some or all of the four periodontal tissues. This technique is called guided tissue regeneration and its main goal is to prevent reformation of diseased periodontal pockets and encourage reattachment of the normal periodontal cells and tissues to the tooth. In some cases, an increase in alveolar bone height can be achieved. Materials used may include any combination of autogenous bone or synthetic bone grafts (Fig. 3), concentrated antibiotic substances such as Doxirobe (Fig. 4B), and various types of membranes (Fig. 5) that promote specific growth of periodontal tissues in a certain order so that the diseased state does not return. *With your recommendation and the right owner, we can save strategic teeth with established periodontal disease.*



Fig. 1 Severe horizontal and vertical bone loss of > 50% of the alveolar bone around this mandibular fourth premolar indicates a poor prognosis for advanced periodontal surgery. By extracting this tooth and performing debridement after extraction, the adjacent first molar can be preserved. **Fig. 2** Retained deciduous teeth can create crowding and pockets that can jeopardize important adjacent teeth, such as the permanent maxillary canine tooth. **Fig. 3** Synthetic bone graft placement after access and debridement of diseased tissue with periodontal open flap technique. Synthetic hydroxyapatite crystals create a scaffolding for the ingrowth of new bone. This type of material is called osteoconductive, meaning conducive to bone growth in the proper environment but will not induce bone growth.

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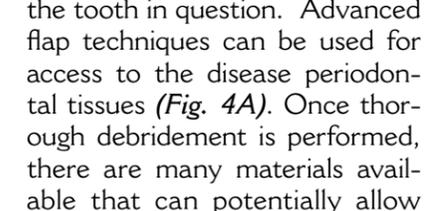


Fig. 4 Flap procedure for open debridement of root and periodontal support tissues from a pocket created by a retained deciduous tooth (A). Doxycycline gel is used to create an environment that promotes periodontal healing (B).



Fig. 5 Diagram of a membrane in place for guided tissue regeneration to treat periodontal disease and preserve the tooth.