



DENTAL EXTRACTIONS

Five Steps to Improve Client Education, Surgical Procedures, & Patient Care

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This is the fifth article in the **Practical Dentistry** series, which is focused on teaching veterinary professionals how to provide high-quality dental care as well as communicate with clients in order to help them understand why this care is so important for their pets.

The first four articles in the series can be found at todaysveterinarypractice.com under Article Lists:

1. **Dental Services: Good Medicine for Patients & Practices** (Sept/Oct 2011)
2. **The Importance of Dental Radiology** (Nov/Dec 2011)
3. **Proper Therapy for Endodontic Disease** (Jan/Feb 2012)
4. **Periodontal Disease: Utilizing Current Information to Improve Client Compliance** (Mar/Apr 2012)



DENTAL EXTRACTIONS OVERVIEW

- **Dental extractions** are a very common but potentially frustrating surgery, compounded by the fact that many practices undercharge for the procedure.
- **Proper client education** results in improved patient care, acceptance of dental procedures (ie, dental radiology), and practice income.
- **Appropriate pain management and postoperative care** are critical for patient comfort and help decrease complications.
- **Investing in superior equipment and hands-on training** results in decreased stress for the practitioner, efficient extraction procedures, decreased pain and surgical trauma for the patient, improved outcomes, and increased income for the practice.

Extractions are a very common procedure performed in veterinary dentistry. However, many veterinarians do not look forward to the procedure for several reasons:

- Extractions are typically difficult procedures—canine patients (especially large breeds) have large teeth and long roots.
- Most teeth that require extraction have some to significant pathology, which further complicates the extraction procedure.
- These procedures are generally undercharged. This may be due to the fact that, in the past, extractions were reserved for teeth that were already mobile or on the verge of falling out.
- Clients perceive that their pets' teeth are similar in size to human teeth; therefore, they do not realize the level of difficulty associated with extractions.
- Finally, pets rarely show signs of oral pain. This not only makes clients reluctant to pay for proper dental care, but veterinarians some-



Figure 1. Image showing the root size of carnassial teeth: The roots are significantly larger than the crowns (the dime is present to provide perspective). Visual evidence of the size of teeth can be shown to clients to help them understand the amount of work required to extract them.

Figure 2. Image of an extracted deciduous canine and incisor, revealing the ratio of root to crown and confirming the amount of effort needed for extraction

Figure 3. Luxating elevator (Integra, miltex.com)

times under prioritize dentistry due to the lack of obvious clinical signs.

These issues act as a vicious cycle, which affects the cost and perception of difficulty of veterinary dentistry as well as the awareness of dental disease and its resulting pain and complications. The following steps focus on how to improve patient care and practice income while decreasing the stress of dental extractions for practitioners.

STEP 1: CLIENT EDUCATION

As we know, the roots of canine and feline teeth are typically 2 to 3 times the size of the crown (**Figure 1**). This is especially true with deciduous teeth (**Figure 2**).

Your clients' perceptions of their pets' teeth is that the root is the same size or smaller than the crown, which is why they often question the cost of a procedure. The best way to educate clients is to show them an actual tooth (with intact root) or a radiograph of the same. Not only will this help them understand that extractions involve significant surgery, but it may encourage them to approve alternate means of treatment, such as endodontic therapy or periodontal surgery.

Extractions are a surgical procedure and should be invoiced as such. Referring to dental extractions as oral surgery helps change clients' perceptions of the procedure. I recommend that practitioners charge by time rather than by tooth and to align fees for oral surgery with those for other surgeries, such as laparotomies. This allows the practitioner to feel that the time and effort they are dedicating to the procedure is being properly compensated.

STEP 2: PROPER EQUIPMENT

As in all aspects of veterinary medicine, proper tools greatly facilitate ease and accuracy of procedures.

- **Elevators:** A new set of elevators can remarkably decrease surgical time. Old or dull equipment

lengthens the procedure time and increases surgical trauma. I recommend luxating elevators (**Figure 3**) to improve the extraction process, and have developed a kit for general practitioners (Niemiec Dental Extraction Kit, miltex.com).

- **Burs:** All multirooted teeth must be cut into single-rooted segments (sectioning). Furthermore, difficult extractions and retained roots are best handled via surgical methods, such as buccal cortical bone removal. These procedures are best performed utilizing carbide burs on a high-speed, air-driven handpiece, which can markedly decrease extraction time. While preference may differ, I recommend a good supply of cross-cut taper fissure burs (699, 701, 702, and 703 burs) for this purpose.
- **Note:** Dental burs are *disposable*, and should only be used for a few teeth or for one patient. Further use will increase trauma and surgical time. If the bur is continually stalling, replace the bur. If it continues to stall, have the turbine and/or delivery system professionally evaluated.

STEP 3: HANDS-ON TRAINING

This may be the single most important way to improve both patient care and appropriate compensation for extractions. Many veterinarians have received little to no training in veterinary dentistry or have learned older techniques. This has resulted in development of substandard techniques.

Dental extractions are an elegant procedure, best performed with care and patience. For example, too much pressure on the tooth will shift the trauma from the periodontal ligament to the tooth or jaw, resulting in a fracture instead of loosening the tooth.

Hands-on dental extraction laboratories provide training that:

- Teaches the most efficient and atraumatic way to

elevate and extract teeth

- Helps increase the speed of the extraction process, which ultimately results in more procedures being performed
- Improves patient care due to faster, less traumatic extractions, with fewer complications (eg, retained roots).

A hands-on wet lab taught by a boarded veterinary dentist will greatly improve your skill level within a single session (see **Educational Opportunities** for upcoming continuing education).

STEP 4: PRE- AND POSTOPERATIVE DENTAL RADIOGRAPHS

As noted previously, tooth/root pathology is one of the main reasons that extractions are difficult. Without the information provided by dental radiographs, the practitioner is destined to have difficulty with many extraction cases. Pre-operative radiographs document the need for extraction therapy and identify possible complications.

Dental radiographs are absolutely critical to detect:

- **Ankylosed Roots (Figure 4, page 64):** Classic in feline tooth resorption, but also common in older canine patients
- **Weakened Bone (Figure 5, page 64):** Found commonly in the area of the mandibular canines and first molars of small and toy breed dogs; significant alveolar bone loss can lead to an iatrogenic mandibular fracture during extraction procedures
- **Curved Roots (Figure 6, page 64):** Especially common in the 1st molars (maxillary and mandibular) of small and toy breed dogs; knowledge of this condition helps avoid root fractures
- **Extra Roots (Figure 7, page 64):** Supranumary roots can be seen in almost any tooth, but are most common in the maxillary 3rd premolar in cats (10% of these teeth are reported to have a supranumary root); radiographs provide invaluable information that helps avoid root fractures and retained roots.

EDUCATIONAL OPPORTUNITIES FOR DENTAL EXTRACTION TRAINING

- **American Veterinary Dental Forum (AVDF):** November 10 to 13, 2012; Seattle, Washington (avdf.org)
- **American Veterinary Medical Association (AVMA) Convention:** August 4, 2012; San Diego, California (avmaconvention.org)
- **San Diego Veterinary Training Center:** June 9 to 10 and August 18 to 19, 2012 (vetdentaltraining.com)

Postoperative dental radiographs should be taken to ensure complete extraction. A recent study (submitted for publication) revealed that 92% of extracted carnassial teeth have retained roots after attempts at removal (**Figure 8, page 64**). In addition to the study results, there are several other reasons that extraction sites be radiographed postoperatively:

- Most important, since small areas of root may be missed, good medicine dictates identification and removal of these root pieces.
- If treating an abscess, it may be unrelated to the tooth (eg, foreign body), regardless of pre-operative infection seen on radiographs.
- The vast majority of clients respond better to visual evidence rather than verbal; therefore, it is helpful for practitioners to create a book or slideshow highlighting the importance of radiographs. A visual teaching aid is available for this purpose (**The Importance of Dental Radiographs**, client educational poster, vetdentalrad.com).
- The **American Animal Hospital Association (AAHA) Dental Care Guidelines for Dogs and Cats** mandate postoperative radiographs (aahanet.org/PublicDocuments/Dental_Care_Guidelines.pdf).

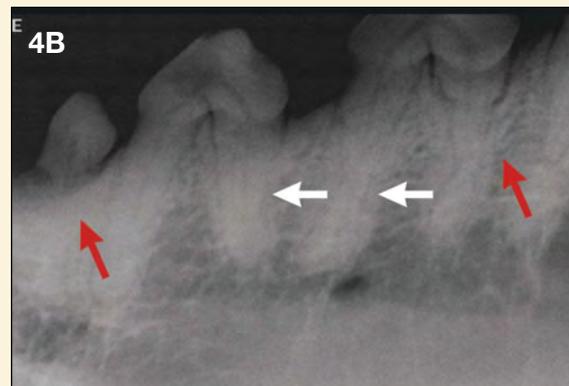
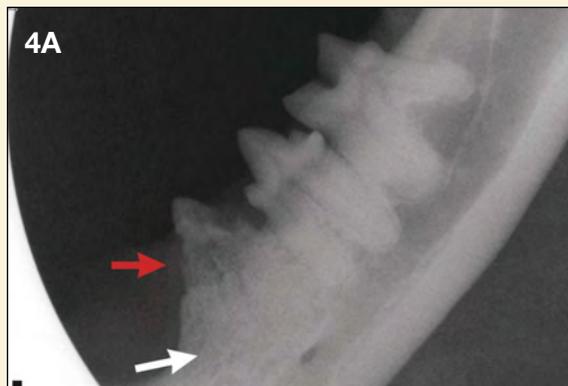


Figure 4. Tooth resorption (red arrows) and ankylosis (white arrows) in (A) feline patient and (B) canine patient



Figure 5. Severe periodontal disease and alveolar bone loss (arrow), resulting in < 0.3 mm of alveolar bone remaining at the apex of the mesial root of the mandibular first molar. These conditions predispose the patient to an iatrogenic pathologic fracture.



Figure 6. Severe curve in the mesial root of the mandibular first molar, which will greatly complicate the extraction process

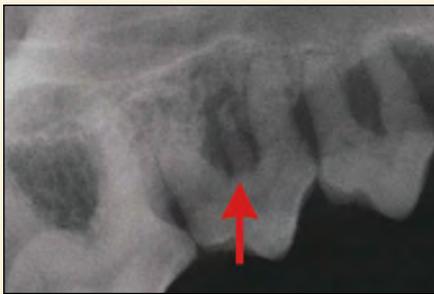


Figure 7. Supranummary root (arrow) of the maxillary third premolar

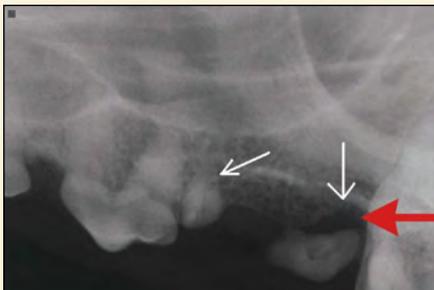


Figure 8. Retained roots (white arrows) following an extraction attempt of a maxillary 4th premolar; the distal root also has periapical rarefaction (red arrow), indicating active infection.

STEP 5: PAIN MANAGEMENT & POSTOPERATIVE CARE

Extractions are a surgical procedure and can result in significant intra- and post-operative pain. All practitioners should be patient advocates and prescribe pain medications.

Regional (local) anesthesia should be performed for all extractions. These nerve blocks are generally taught during hands-on dental laboratories. Regional anesthesia should be invoiced as a separate line item on the bill. Make sure clients understand that this procedure helps provide proper pain management for their pets.

Pain medication should be prescribed for a minimum of one week for all patients that undergo extraction therapy. I generally use a combination of a NSAID (meloxicam; Metacam, boehringer-ingenelheim.com) and tramadol for dogs and one dose of meloxicam (if renal function and blood pressure are adequate) combined with a week of oral buprenorphine for cats.

In **antibiotics** are indicated, **probiotics** (Fortiflora, purina-veterinarydiets.com) are also recommended to avoid gastrointestinal upset. A **high-calorie soft food** (Prescription Diet a/d, hillsvet.com) or a **liquid diet** (REBOUND Liquid Diet, virbacvet.com) may be needed for patients that are not eating well post-operatively.

Oral medications, such as tablets or capsules, may be easier for the client to administer with a **commercial coating** (Pill Pockets, greenies.com)

A topically applied **collagen supporting gel** (MAXI/GUARD, addisonlabs.com) can also be prescribed postoperatively to help decrease infection and speed healing. ■

FIGURE CREDITS

Figure 2 reprinted from *Improving Dental Compliance*, video available at vetdentalrad.com.

Figure 4 courtesy of San Diego Veterinary Dental Training Center, vetdentaltraining.com.

Figures 6, 7, and 8 reprinted from *Importance of Veterinary Dental Radiology*, client education poster available at vetdentalrad.com.



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