



DENTISTRY



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TOOTH EXTRACTION IN CATS: TIPS AND TRICKS

Introduction

Tooth extraction is, apart from periodontal treatment, the most common procedure in feline dentistry. Radiographic examination prior to extraction of a tooth is mandatory: many cats have tooth resorption (more than 50% of cats presented for oral problems), sometimes most of the tooth root is already resorbed. In most cases, a surgical or open extraction technique is indicated: the roots are very fragile, and the presence of resorption makes root fracture more likely.

Equipment

Extraction is a surgical procedure with instruments entering the tissues, hence the equipment used should be sterile.

Needed are:

- N° 3 scalpel handle and scalpel blade N°11 or 15
- periosteal elevator (small size)
- luxators, elevators and/or extractors of suitable (small) size
- small extraction forceps (not mandatory)
- root tip forceps (not mandatory but helpful)
- rotating equipment with irrigation (turbine, contra-angle or straight handpiece), selection of burs (round, pear-shaped and fissure burs)
- basic surgery kit: tissue forceps, scissors, small needle holder
- suturing material: absorbable monofilament suturing material (e.g. Monocryl®, Monosyn®) size 5-0

General extraction technique

Technique varies according to the instrument (elevator, luxator, extractor) used. Closed extraction is indicated for small single rooted teeth, such as the incisors. Most other teeth require an open (surgical) technique.

First, the gingival attachment is cut. Then, technique varies depending on the instrument used. Whatever instrument is used, the correct size (small for cats) is chosen to accommodate the root surface of the tooth to be extracted, and the

instrument should in most cases be used at the whole circumference of the root (with the exception of canine teeth). Forceps are not necessary, and if used should only be used when the tooth is extremely loose in its socket. Once the teeth are extracted, the alveolar bone is smoothed using a slow speed bur with irrigation or using a rongeur. When a flap was raised, it is sutured without tension in a simple interrupted pattern.

- *luxator*: the luxator is introduced into the gingival sulcus at a slight angle with the tooth. It is then further advanced into the periodontal space by applying gentle apical pressure, working its way around the circumference of the root. Luxators are used for cutting periodontal ligament
- *elevator*: the elevator is introduced into the gingival sulcus at a slight angle with the tooth. It is then further advanced into the periodontal space, and rotated along its long axis for 10-15°, and then held in place for at least 10 seconds. This will stretch the periodontal ligament fibers, and they will eventually break.
- *extraktor*: the tooth crown should be amputated to allow straight access to the periodontal space. The extractor is advanced into the periodontal space by applying gentle apical pressure at the distal and mesial surfaces of the root, and slid buccally and lingually/palatally to cut the periodontal ligament around the whole circumference of the root.

Technique for premolars and molars

A full thickness mucogingival flap is raised to expose the tooth neck, and in multirooted teeth the furcation. This can be either an envelope flap or triangular flap with the releasing incision at the rostral side. Triangular flaps give better exposure, especially if alveolar bone needs removing. Multirooted teeth are sectioned in as many parts as there are roots using a turbine with a pear-shaped or fissure bur. Especially when multiple teeth need removing, it is advised to remove some of the buccal alveolar bone, ideally using a pear-shaped or round bur in a contra-angle or straight handpiece, using copious water irrigation. Each part is then luxated/elevated as if it was a single rooted tooth. If multiple neighbouring teeth need to be extracted, an elevator can be used between the parts that need extracting: the instrument is placed perpendicular to and



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between the two fragments, and rotated along its axis. Care should be taken to avoid force, since this will cause fracture of the fragile cat roots.

Technique for canine teeth

A triangular full thickness flap is raised to expose the alveolar bone. Pedicle flaps should be avoided, since due to shrinkage they will become too narrow for good healing. One third to half of the buccal alveolar bone is removed with a round or pearshaped bur in a slow handpiece with water irrigation. It is helpful to amputated the crown of the canine tooth to get more straight access to the periodontal ligament space.

Using an elevator or luxator at the palatal side of an upper canine should be avoided, since only a small amount of bone is present between the tooth and the nasal cavity: penetrating the nasal cavity would thus be unavoidable. The design of an extractor (very thin blade) allows that some work can be done at the palatal side of the upper canine with less risk. The mandibular canine is the most difficult tooth to extract, with the highest risk of mandibular fracture. Care should be taken to avoid the use of force on the mesial and distal surfaces of the tooth.

Technique for root fragments

Different methods can be used. Surgical loupes are very helpful to visualize the tiny root tips in cats.

- introduce a small luxator or extractor between the root and the alveolar bone, without putting pressure on the tooth fragment itself, and work your way around the fragment.
- raise a flap, or extend the flap that was already made, and remove the buccal bone overlying the root tip with a round or pearshaped bur in a slow handpiece. This will help you visualize the fragment before introducing the small luxator.

Conclusion

To extract teeth in cats, a careful and precise technique is required and the correct size of instruments should be used with patience to avoid complications such as root fracture, mandibular fracture, oronasal fistula. Preoperative radiographic examination is mandatory.