

LEARNING WITH CONFIDENCE HOW TO...SURGICALLY EXTRACT CAUDAL CHEEK TEETH IN THE DOG (4TH PREMOLAR, 1ST AND 2ND MOLARS)

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OVERVIEW

Caudal maxillary cheek teeth can be some of the most frequently addressed teeth, while also being the ones that give practitioners the most fits. Anatomy of these three-rooted teeth pose large crowns and smaller roots. Proximity to the maxillary sinus and ventral aspect of the orbit make these extractions challenging.

PRE-PLANNING (INTRAORAL RADIOGRAPHY)

Intraoral dental radiography is essential in any oral surgical procedure, but most importantly insuring that all three roots are imaged and that there is no overlapping (superimposition) roots. Therefore, distal to mesial AND mesial to distal imaging are useful in identifying each tooth root, especially those of the 4th premolar.

PROPER EQUIPMENT IS THE KEY!

One must have the right equipment on board to perform these surgical extractions. The following are recommendations to help make this an easier procedure:

- Dental Luxators (sharp!)
- Winged elevators (sharp!)
- Dual edged periosteal elevator (sharp!)
- Root tip retrieval forceps
- #2 or #4 round bur OR #330 pear bur
- #701L crosscut bur
- Goldman-Fox, Iris or Strabismus scissors
- Atraumatic tissue forceps (Debakey)
- Medium grit football diamond
- Miller bone curette
- 4-0 (FS2 needle) or 5-0 (P3 needle) poliglecaprone-25
- LED or Fiberoptic swivel tip high-speed handpiece
- Magnification and illumination

FLAP WELL TO PREVENT A FLOP

Whatever flap you chose, plan it out first. If you are removing the 4th premolar only, it is possible (but not necessarily needed) to have a bilaterally divergent flap to remove this tooth. In most instances, either a single vertical release (between the 3rd and 4th

premolar) or an envelope flap may be needed. For removing the 1st molar (with or without the 2nd molar), an envelope flap is most ideal.

MAXILLARY 4TH PREMOLAR

Clinical videos of an extraction of this tooth will be shown. A few keys to remember are:

- Make sure your vertical release extends beyond the mucogingival (MG) line and is between the 3rd and 4th premolar.
- Remove buccal bone carefully using either a round #2 or #4 OR a #330 pear bur. Start at the bone margin and move in a brushing/swaying motion, carefully removing bone but not traumatizing the tooth. Make sure you see the entire outline of the root from mesial to distal.
- Amputate the caudal cusp of the 4th premolar CAREFULLY using a 701L crosscut bur avoiding any contact to the adjacent 1st molar. This allows for a straight-line access to elevation or luxation of the distal root.
- Make deep enough moats but insuring they are not too wide using a 701L crosscut bur.
- When removing the palatal root, make sure you carefully remove the interradicular bone between the buccal root and the palatal root, thus exposing the palatal root. Make a moat using your 701L crosscut bur.
- Use luxators, especially on the palatal root when needed
- When closing (after alveoplasty and radiographs) , make sure the 1st suture is a collar protecting the 1st molar, then continue suturing.
- Suture 2-3 mm apart with bites at least 3 mm away from the incision line

MAXILLARY 1ST AND 2ND MOLARS

Clinical videos of surgical extraction of these teeth will be narrated. A few keys to remember are:

- Make sure your envelope flap has enough exposure.
- Use of a #330 pear bur helps prevent a vortex-effect using a crosscut bur macerating buccal mucosa.
- The buccal bone overlying the 1st molar is VERY THIN, so be careful not to gouge or lacerate the underlying tooth root.
- Section the tooth in a “T” fashion. May times, a crown amputation of these large crowns gives the DVM a better view of the underlying roots.
- Care is needed in avoiding too wide a moat and avoid contact of the adjacent 4th premolar.
- Use luxators carefully and slowly, but they are quite effective in getting a deep purchase. You can then follow up with winged elevators
- The palatal root can be removed via a lever force in many instances. Using a larger winged elevator can be levered against the crown at the root level, to basically ‘pop’ the tooth out.
- It is recommended to remove the 2nd molar at the same time the 1st molar is surgically removed. This will allow for a better purchase of distal and caudal buccal mucosa. Care is needed not to traumatize the underlying blood vessels!

POST OPERATIVE INSTRUCTIONS AND MEDICATION

Canned or moistened dry food for 10-14 days

Avoid antibiotics unless there is systemic disease, or the patient has severe periodontal disease.

NSAID's can be used provided renal and hepatic function are within appropriate levels

Gabapentin @ 10 mg/kg bid/ tid for 5-7 days

+/- Trazadone for those anxious pets

0.12% chlorhexidine rinse may be used to remove debris from the suture line during the healing phase

*Once the maxillary 4th premolar is removed, the mandibular 1st molar will attract more plaque and calculus. Inform the owner of this to keep this tooth clean.

REFERENCES

Lobprise HB, Dodd JR. Wiggs Veterinary Dentistry Principles and Practice, 2nd ed. Hoboken, NJ: Wiley Blackwell; 2019: 229-264.

Bellows J. Small Animal Dental Equipment, Materials, and Techniques, 2nd ed. Hoboken, NJ. Wiley Blackwell; 2019: 279-297.

Vertstraete FJ, Lommer MJ. Oral and Maxillofacial Surgery in Dogs and Cats. Philadelphia, NJ: Saunders; 2012: 97-161.