

# EXTRACTION DISSATISFACTION

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LVT, VTS Dentistry*



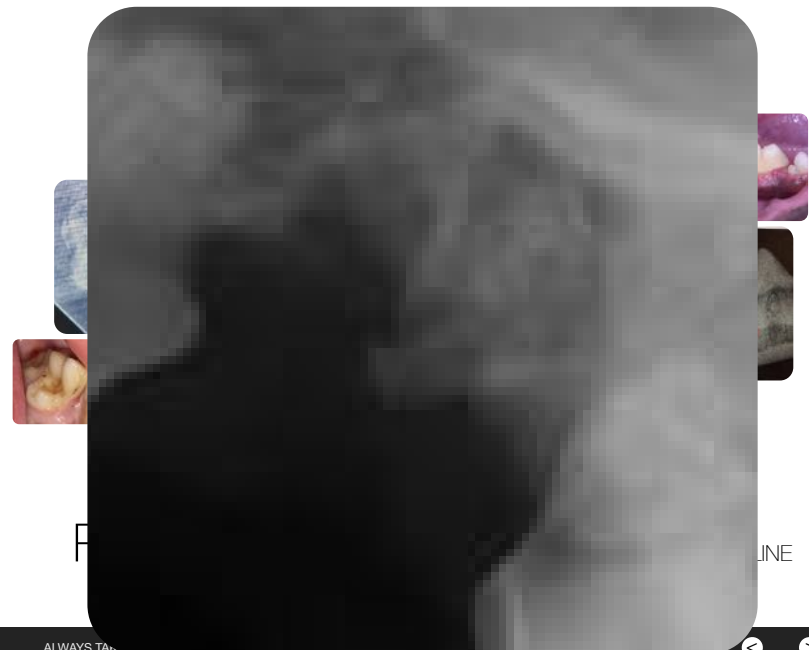
## TAKE FULL MOUTH RADIOGRAPHS ON EVERY PATIENT

- even if it's only 'a cleaning'
- missing teeth may not be missing, hidden problems below gums
- When teeth missing: 25% of dogs have retained tooth roots (RTR); 72% of cats have RTRs
- Study of 108/208 extractions:
  - all reported as fully extracted
  - 93% of cats with RTR
  - 82% of dogs with RTR



RADIOGRAPH: 2/3 OF TOOTH UNDER GUMLINE

ALWAYS TAKE A POST EXTRACTION RADIOGRAPH!



ALWAYS TAKE



## SAME LINGUAL; OPPOSITE BUCCAL RADIOGRAPHIC TECHNIQUE

- the root that shifts in the same direction as the generator is lingual or palatal. (Distal tube shift, palatal PM4 root is in the middle.)
- the root that shifts in the opposite direction is buccal



## 25% OF DOGS & CATS HAVE TDI

- TDI; Traumatic Dentoalveolar Injury
- Pulp Exposure=
  - Root Canal Therapy
  - or Extraction
- Uncomplicated Crown Fracture
  - May be non vital
  - Rough areas more prone to plaque & tartar accumulation
- MUST have Intraoral Radiography



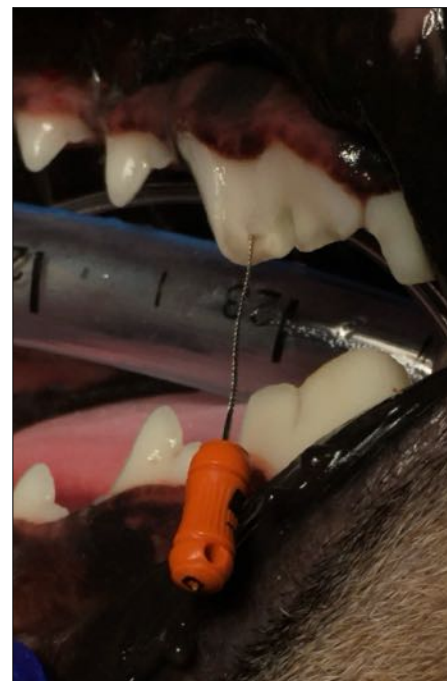
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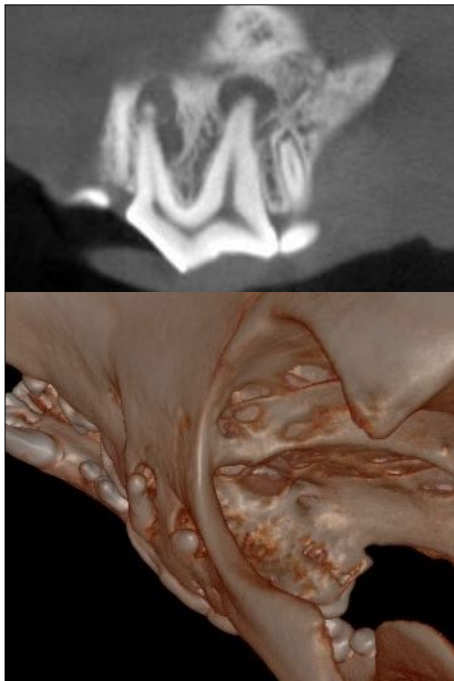
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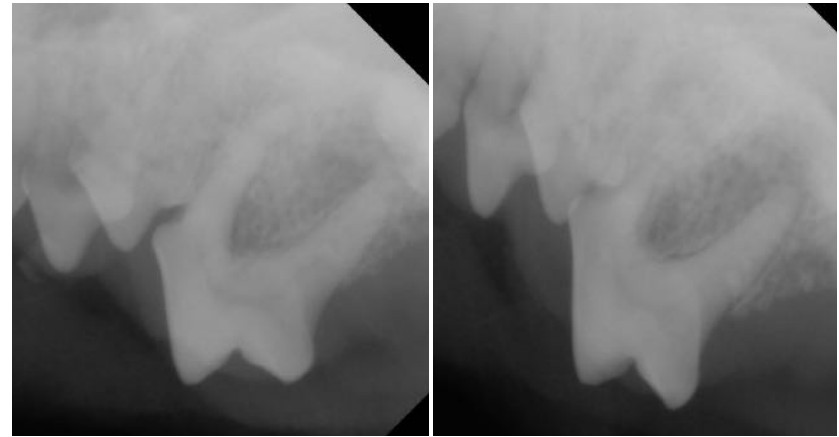
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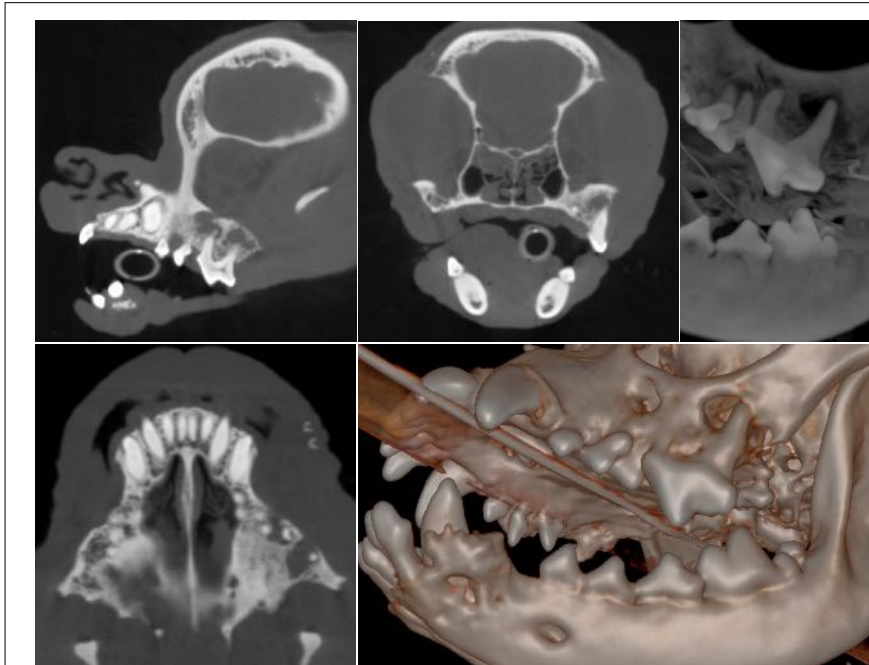
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## PRE-OPERATIVE INTRAORAL RADIOGRAPHS

- Documentation (charting)
- Anatomical abnormalities
  - extra roots
  - fused roots
  - curved roots (dilaceration)
- Pathology
  - tooth resorption
  - root fracture
  - crown fracture



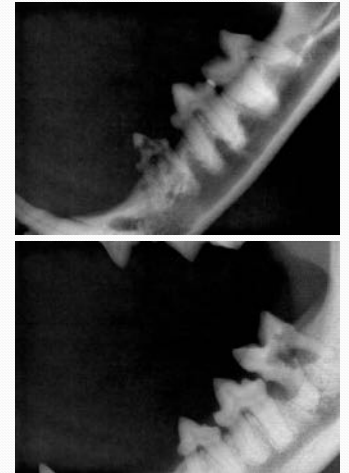


## PRE-OPERATIVE INTRAORAL RADIOGRAPHS



## Resorptive Lesions

- Replacement resorption
  - 'moth eaten,' looking like jaw
  - root resorbing
    - PDL not present
  - typically recurrent
- Inflammatory resorption
  - focal lucency
  - secondary to periodontal disease
  - incidence decreases with good dental care

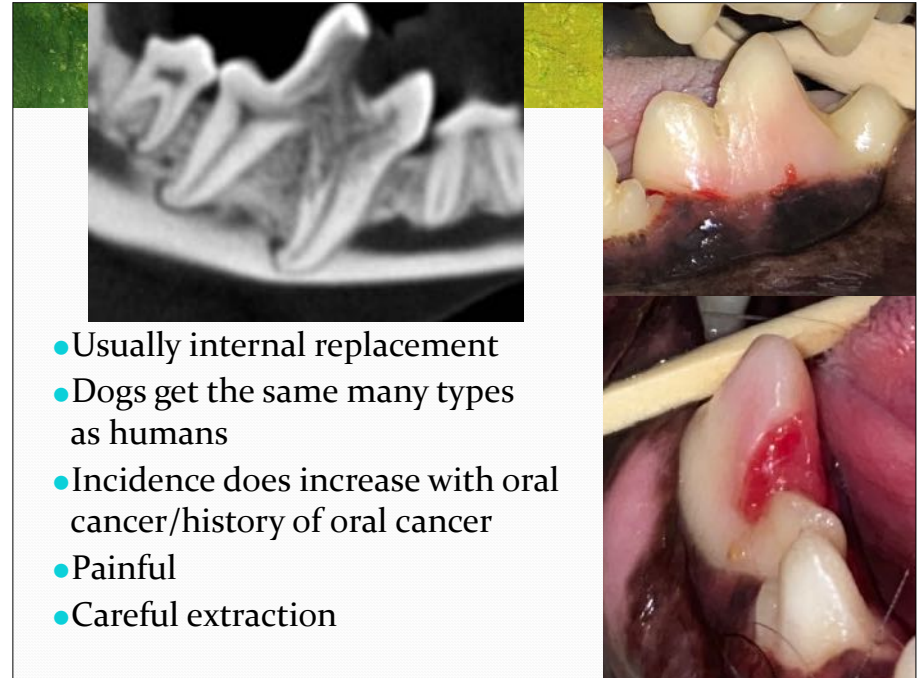


## Tooth Resorption in Dogs

- Usually internal replacement
- Dogs get the same many types as humans
- Incidence does increase with oral cancer/history of oral cancer
- Painful
- Careful extraction

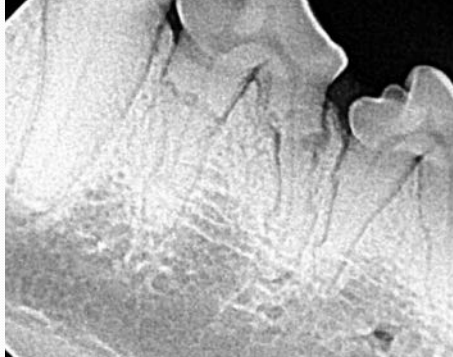


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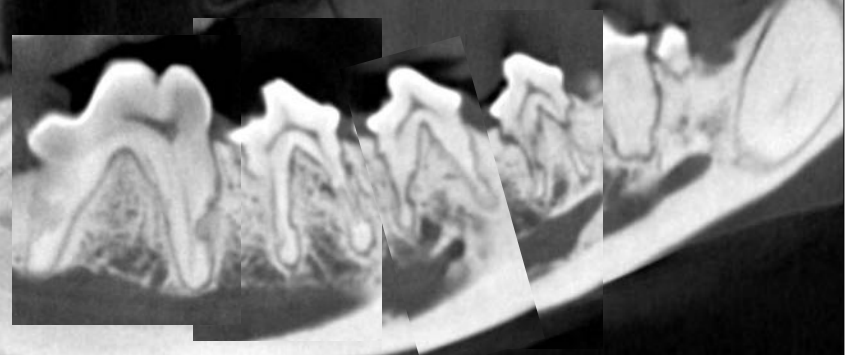
## Root Resorption

- May be related to chronic chewing
- CTM (no action) unless:
- Extraction if resorption exposed to gingiva/fluids



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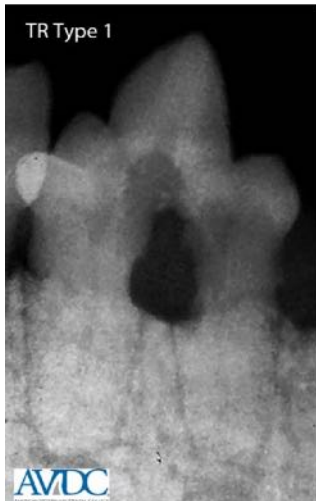


IS IT OKAY TO LEAVE ROOTS BEHIND? NO

## FOCAL LUCENCY

*remove all root structures  
as noted by periodontal  
ligament presence*

TR Type 1



AVDC

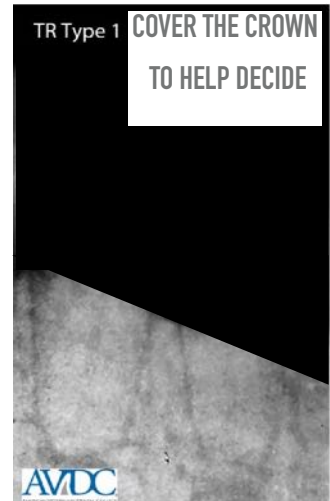
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## FOCAL LUCENCY

*remove all root structures  
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TR Type 1

COVER THE CROWN  
TO HELP DECIDE

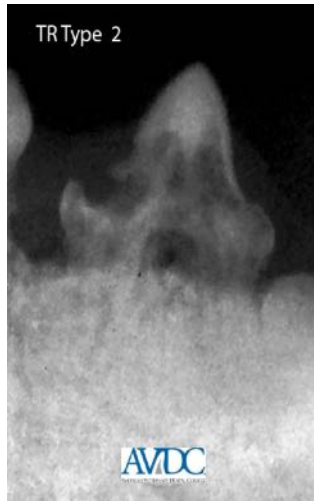


AVDC

IS IT OKAY TO LEAVE ROOTS BEHIND?

## REPLACEMENT RESORPTION

*use Modified Extraction  
Technique (MET) to the level of  
alveolar bone: crown  
amputation with surgical closure*



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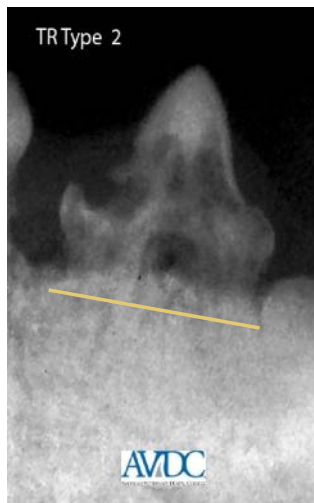
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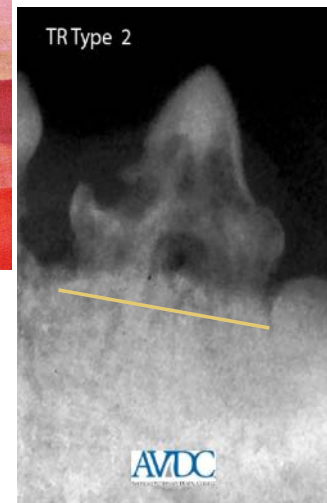


IS IT OKAY TO LEAVE ROOTS BEHIND?

**YOU MUST INFORM CLIENT AND  
DOCUMENT THE INTENTIONAL  
ROOT RETENTION (IRR) AND  
CONTINUE TO MONITOR (CTM)**

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IS IT OKAY

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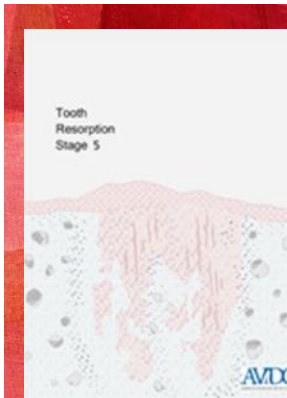
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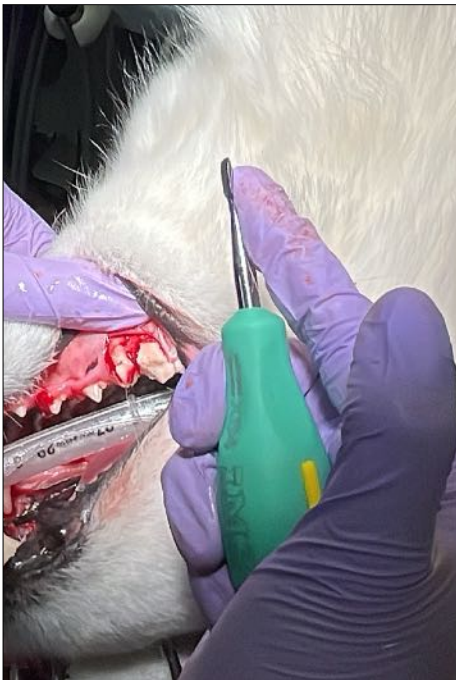
## TR STAGE 5

\* Classification by  
\* severity and/or depth  
\*



TOOTH REMNANTS ARE  
ONLY VISIBLE AS  
IRREGULAR OPACITIES;  
GINGIVA COVERS

OFTEN TREATMENT GOAL IS TO HELP ADVANCE TO STAGE 5



WE WISH WE HAD KNOWN SOONER  
REGARDING ORAL SURGERY:

- Use slow controlled pressure to fatigue the PDL during extractions.
- Sing elevator music.
- Always use a finger stop
- Should plan to use a 'zombie' every time you use a bur
- \*\*Warning Graphic Image\*\*



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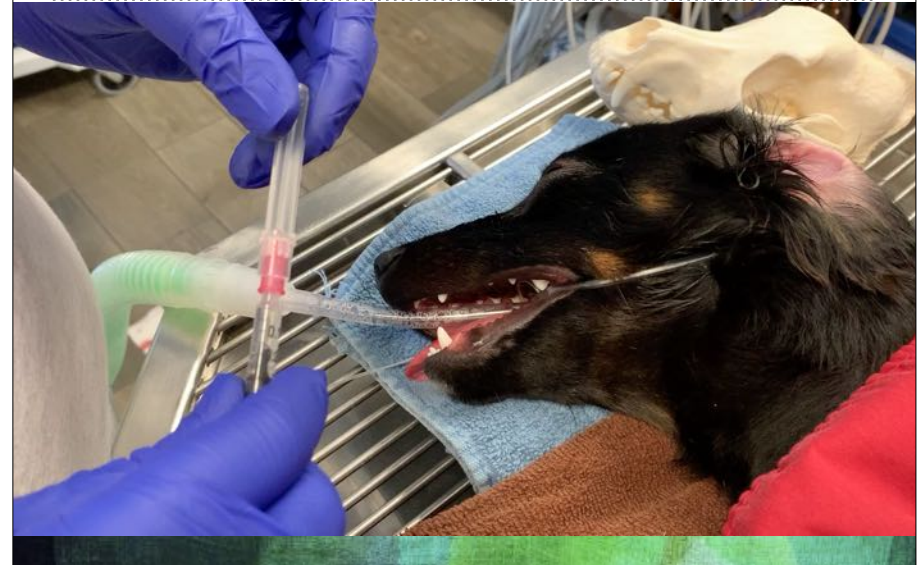
## REGIONAL BLOCKS

- Caudal maxillary
  - Behind zygomatic arch
  - Potential for eye damage



- Access
  - Behind zygomatic arch
  - bent needle behind last molar (depress globe to see tissues move)
  - deep infraorbital

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## CAUDAL MANDIBULAR (INFERIOR ALVEOLAR)

- Intraoral or extraoral approach
- Palpate last molar inside, angular process outside
- Halfway between – palpate bundle entering mandible on lingual side
- Direct needle against periosteum
- Should impact entire mandible
  - *May decrease sensation to the tongue*
  - Monitor closely post-operatively

Inferior Alveolar, extraoral technique



Inferior Alveolar, intraoral technique





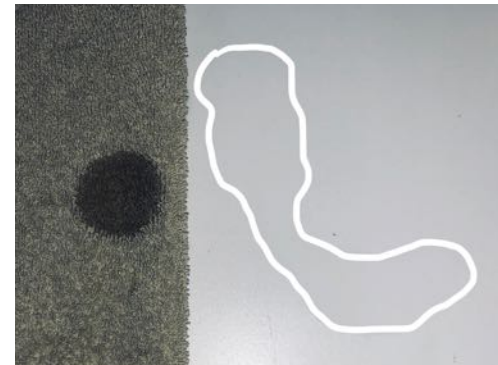
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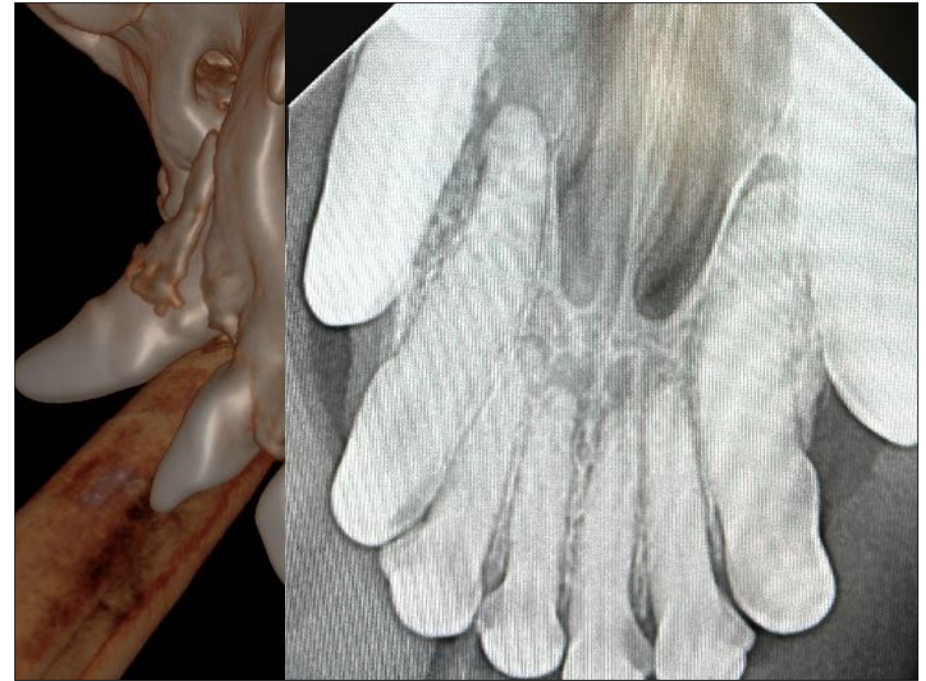
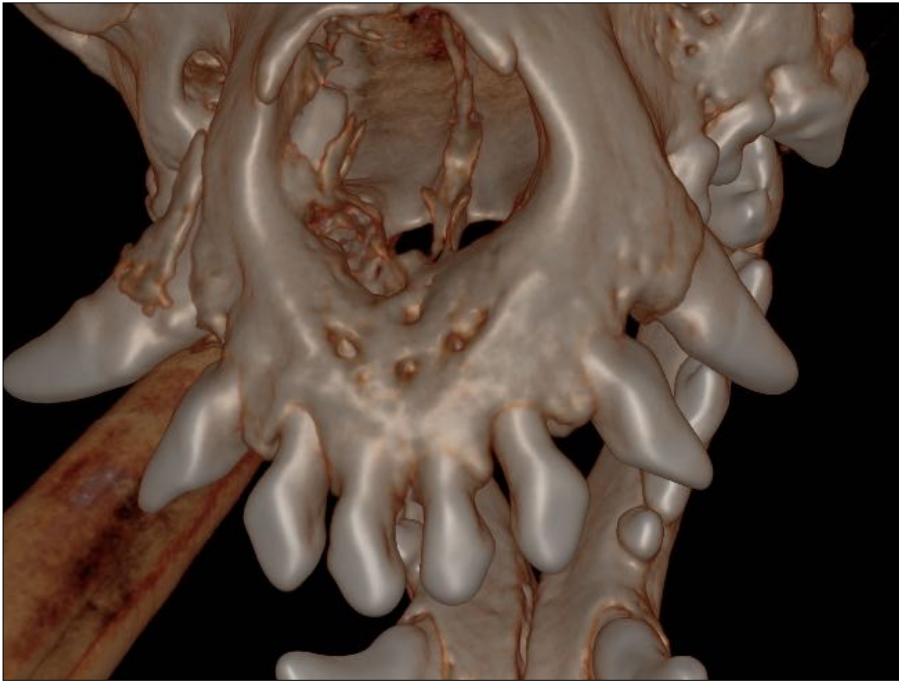
## CAUDAL MANDIBULAR (INFERIOR ALVEOLAR)



## ELEVATION FORCES

- Deliberate, patient
- Control elevator
  - Advance into PDL space
  - Finger stop
  - Not lateral luxation upper canine
- Between teeth
- Between tooth segments





ONF Repair



ONF Repair



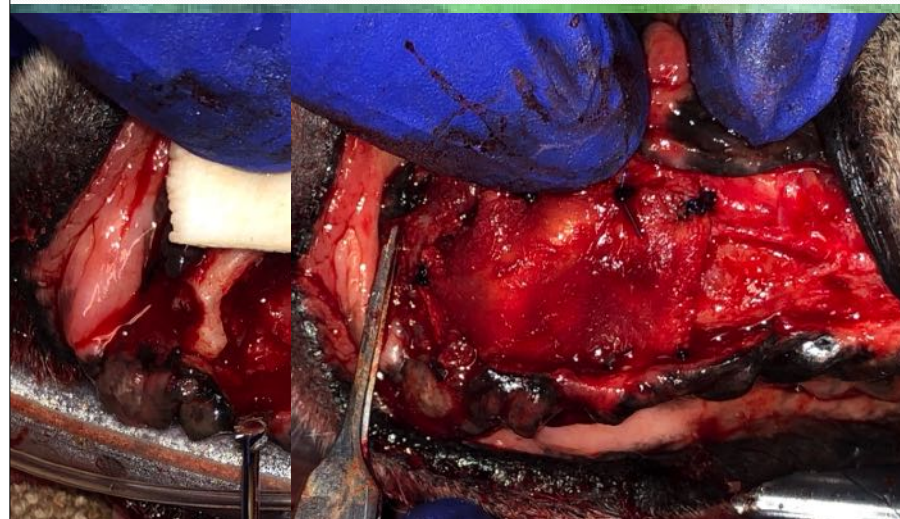
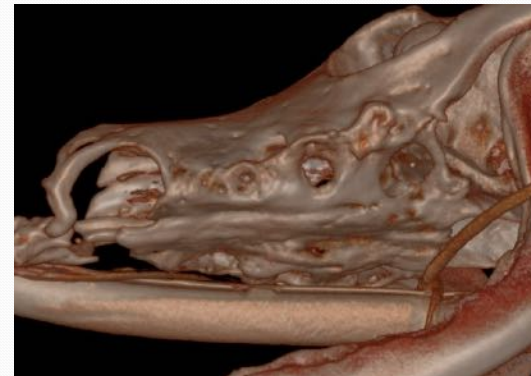


## ONF Repair



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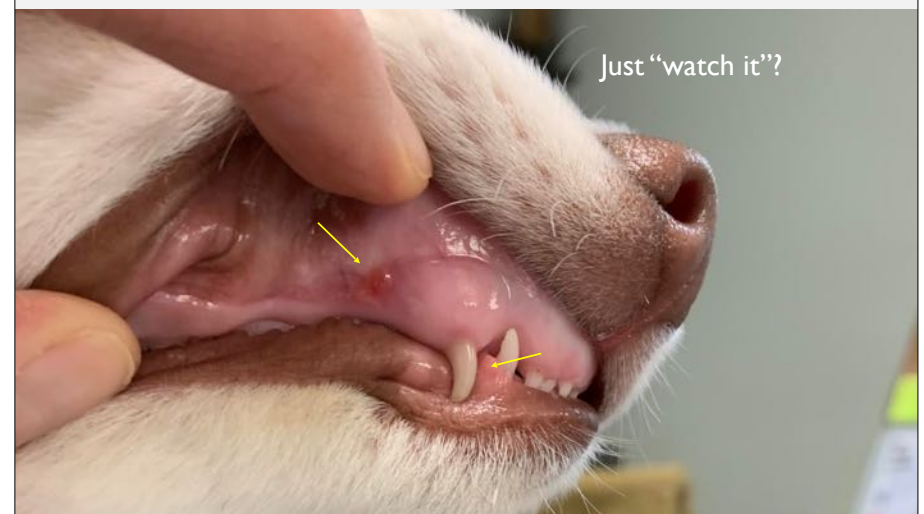
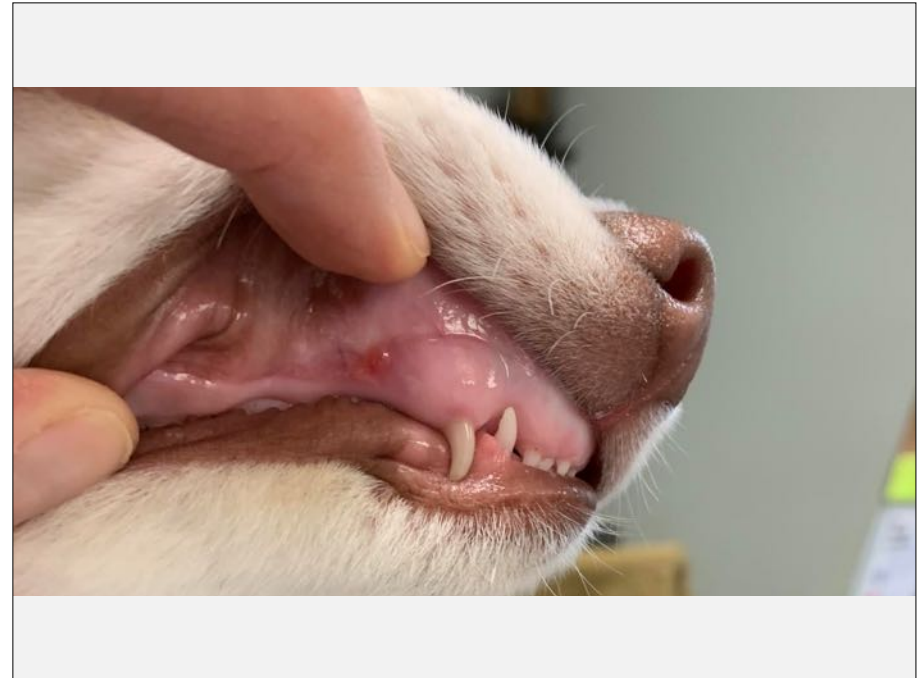
- No tension
- May obtaining tissue by hingeing the palate
- Sutures need to be supported
  - by bone
  - horizontal mattress,
  - knot over tissue, not incision





## Fractured Deciduous Teeth

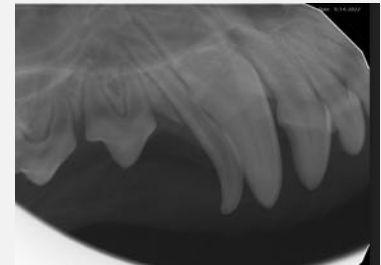
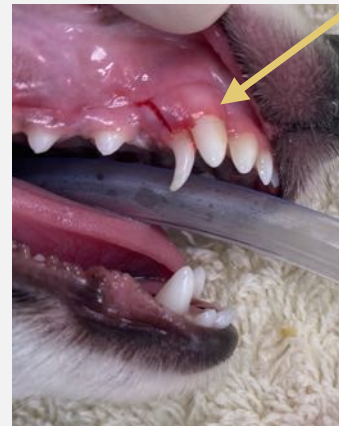
- Infection or abscess can affect underlying tooth bud
- Report of tetanus acquired through fractured deciduous tooth
- Careful extraction
- Thin root and crown walls





*Be gentle to avoid this!  
Do warn of possible damage to underlying adult dentition*

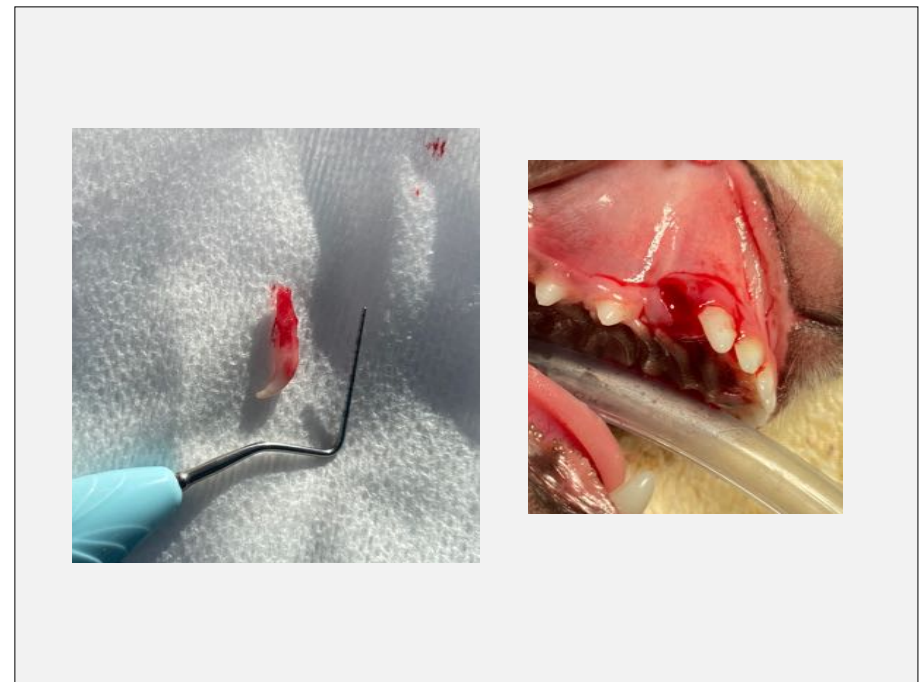
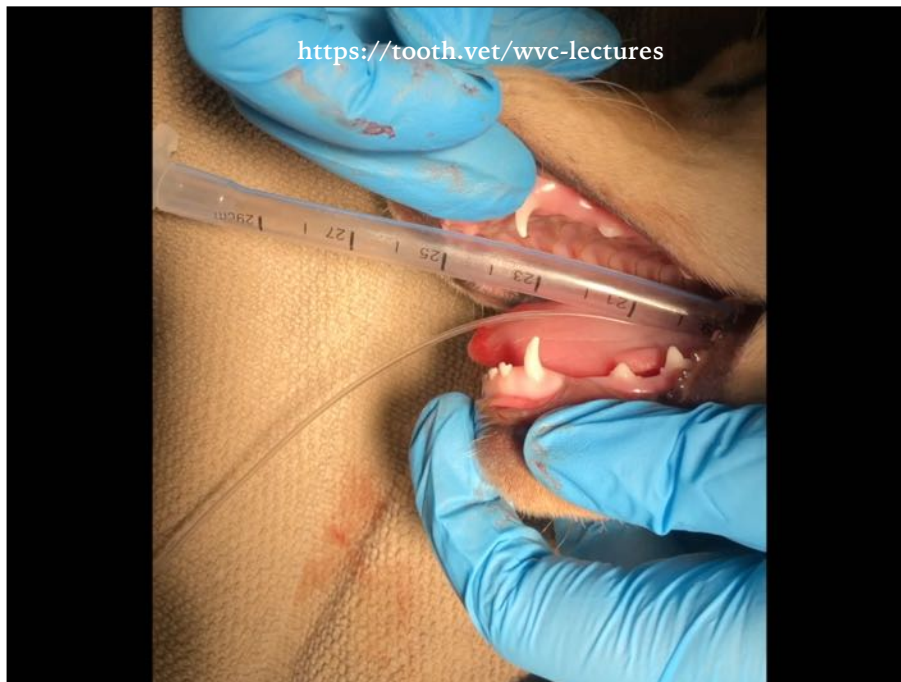
*incisor or canine?*



<https://tooth.vet/wvc-lectures>







## MOUTH GAG/PROP

Google

image mouth gag cat

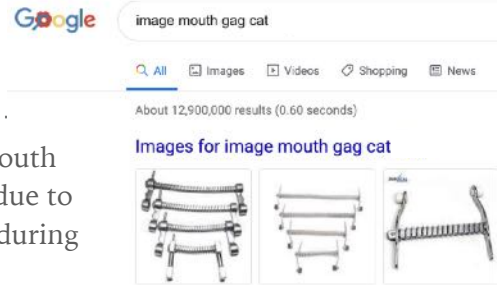
About 12,900,000 results (0.60 seconds)

Images for image mouth gag cat

Which is an appropriate mouth prop to prevent blindness due to maxillary artery occlusion during dental procedures?



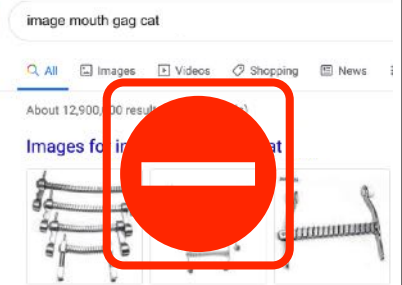
## MOUTH GAG/PROP



Which is an appropriate mouth prop to prevent blindness due to maxillary artery occlusion during dental procedures?

- A spring loaded gag

## MOUTH GAG/PROP



Which is an appropriate mouth prop to prevent blindness due to maxillary artery occlusion during dental procedures?

- ~~A spring loaded gag~~
- ~~An inflexible syringe barrel/needle cover propping the mouth open to 42mm~~
- ~~A fixed size prop that is not moved throughout the entire procedure~~
- A soft perm roller propping the mouth open up to 30mm in cats

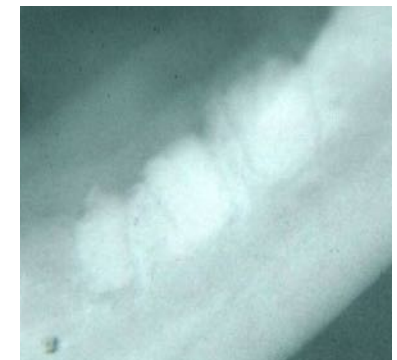
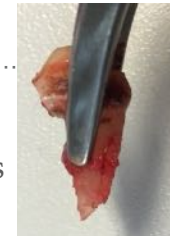


## LESS RIGID PROP PREFERRED

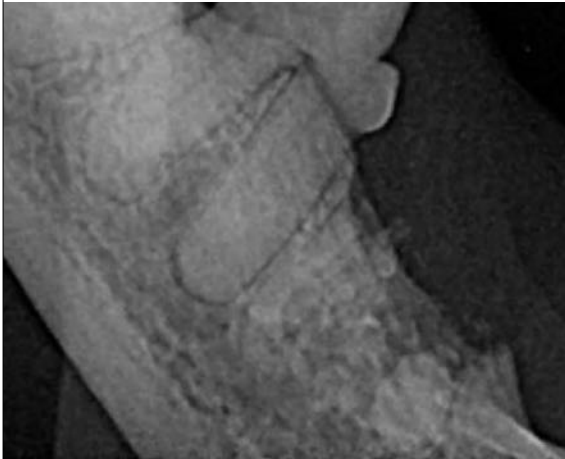
*Maximum safe opening between upper and lower incisors is 3cm*

## COMPLICATIONS

- Root tips
  - Root tip picks
  - Bone removal
  - Interseptal
- Ankylosis
  - Avoid pulverizing
- Tooth resorption
  - Options



## POTENTIAL CONSEQUENCES OF ROOT PULVERIZATION:



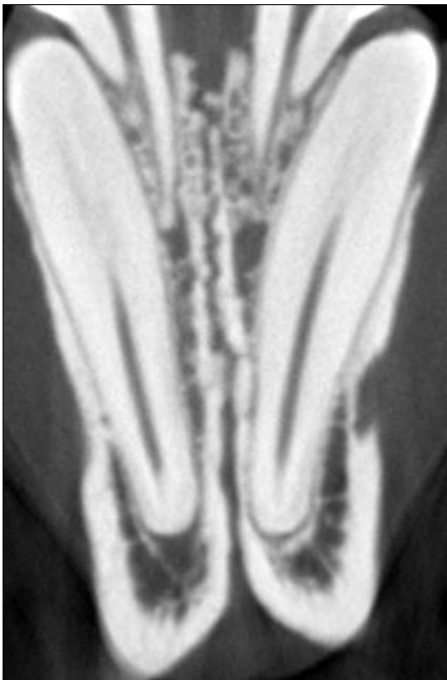
bone necrosis  
air embolism  
sublingual/  
subcutaneous  
emphysema

## LOST ROOT TIPS

- Mandibular canal
- Nasal cavity
- Bone at apex diseased?
- Need to retrieve tip at that time\*
- Enlarge hole it fell through
- FLUSH (NO AIR)

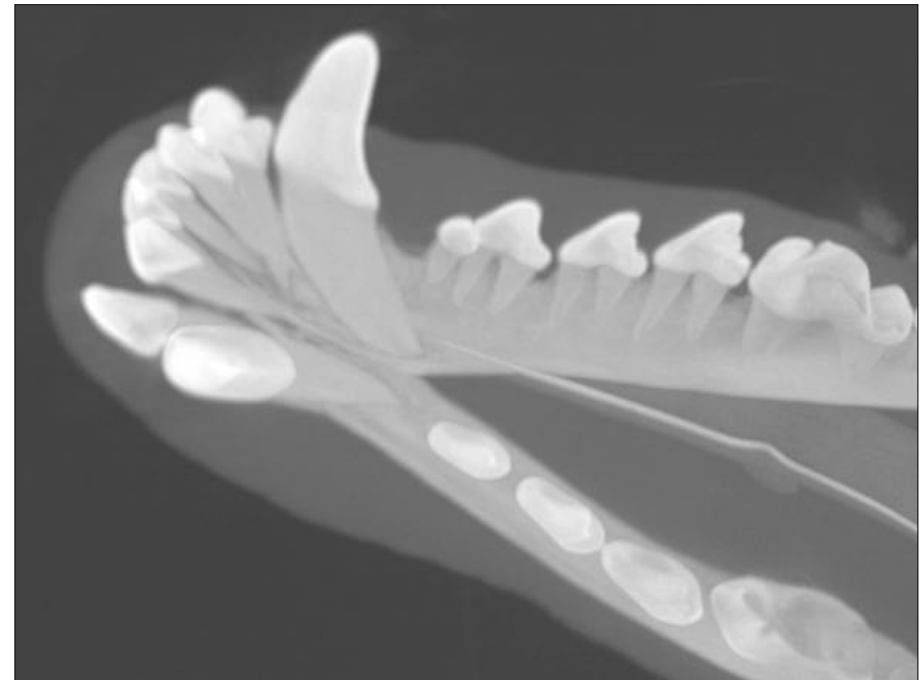


- Suction
- Magnification

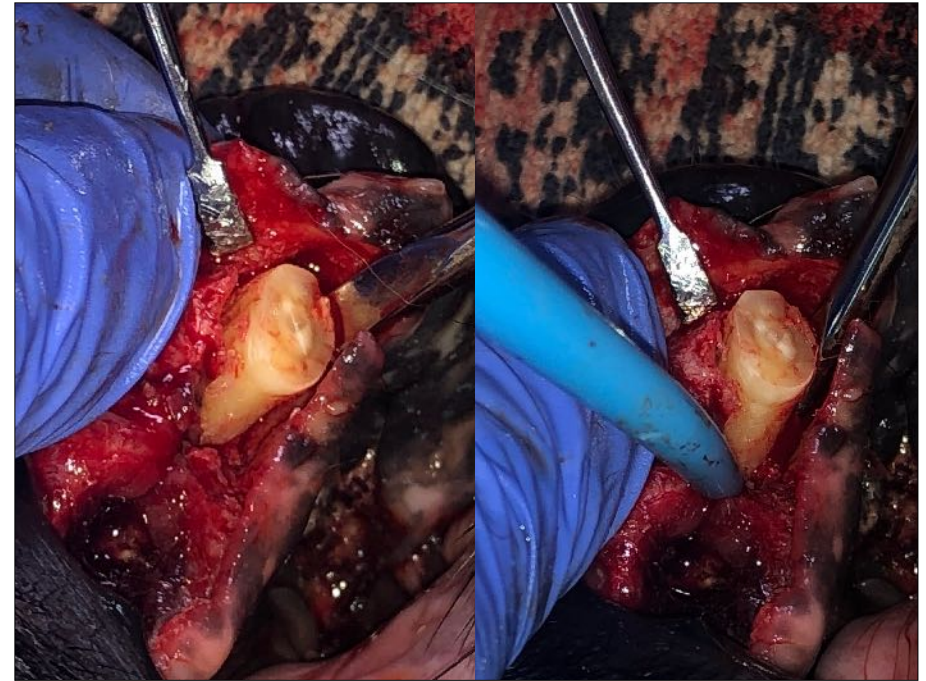
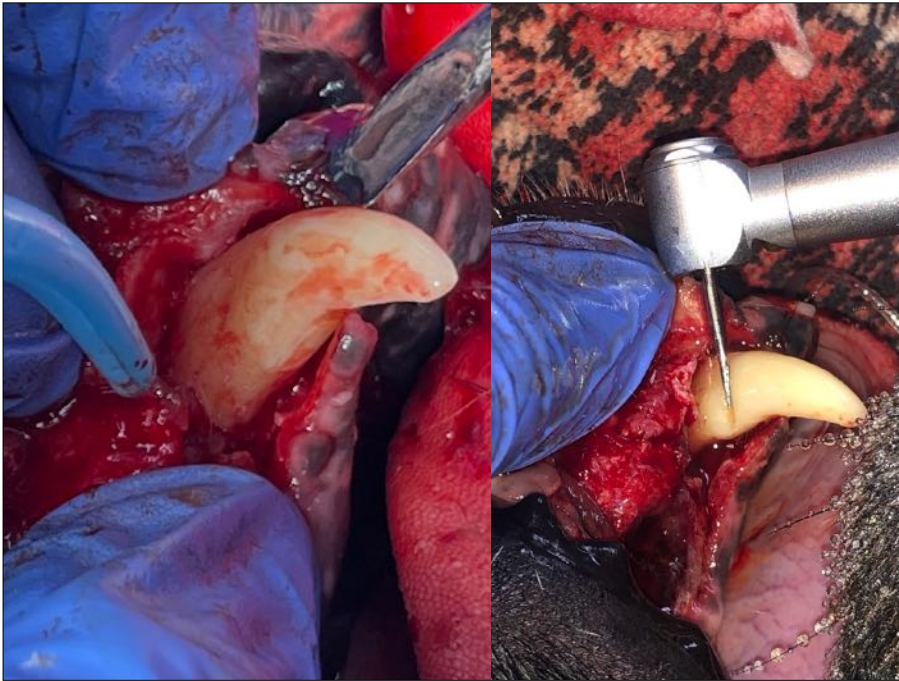


## ROOT CANAL THERAPY

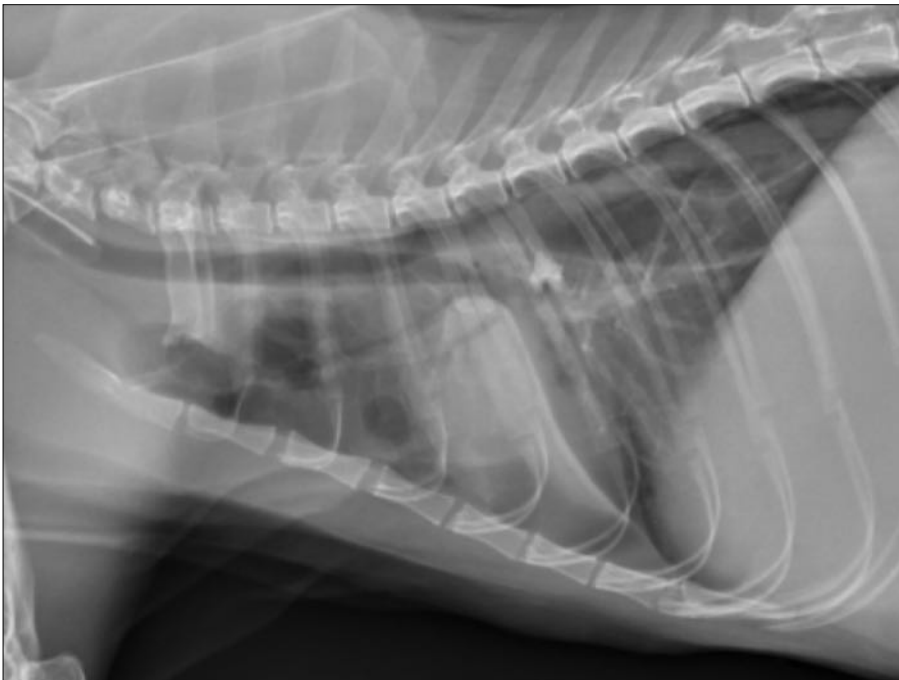
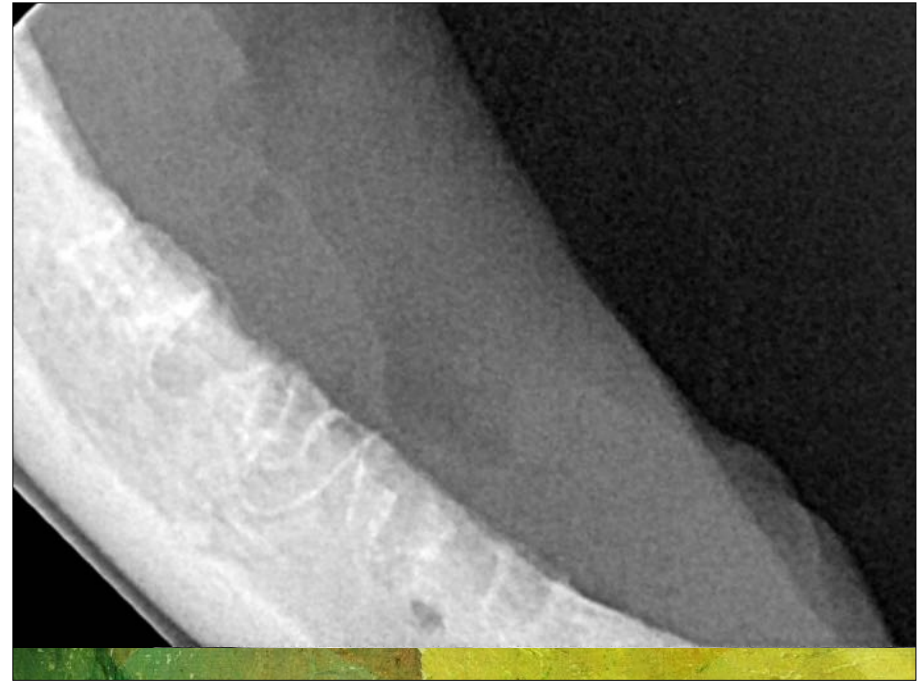
- preserves tooth structure and function
- removes pain and disease
- less invasive than oral surgery
  - no incisions
  - no bone removal











## ALWAYS KEEP LEARNING

- Take radiographs of the entire mouth on every patient every time; RTR incidence is high
- At LEAST 25% of patients have a broken tooth
- Be aware of lip entrapment
- Don't make a treatment plan off of one rad alone; use all of your tools and/or additional views
- Remove bone to the widest portion of the root



## ALWAYS KEEP LEARNING

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- Use a finger stop
- Use a zombie
- Sharp instruments are less likely to slip
- Radiographs will guide you
  - RTR
  - thin bone
  - extra roots
  - resorption
- Select the right tool for the job
- Patience is a virtue

## ADDITIONAL RESOURCES

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[tooth.vet/wvc-lectures](https://tooth.vet/wvc-lectures)

Vet CE You'll Use on Facebook



[tooth.vet/wvc-lectures](https://tooth.vet/wvc-lectures)



## THANK YOU

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We welcome your  
questions and feedback.  
[ce@tooth.vet](mailto:ce@tooth.vet)