

The background features a dark blue gradient with a subtle pattern of white dots. On the left side, there are several overlapping circular elements. A prominent one is a large circle with a scale around its perimeter, marked with numbers from 140 to 260 in increments of 10. Other circles are smaller and some have dashed lines or arrows, suggesting a technical or scientific theme.

PRACTICAL VETERINARY DENTISTRY

CARING FOR THE UNSEEN PROBLEMS BEHIND THE LIPS

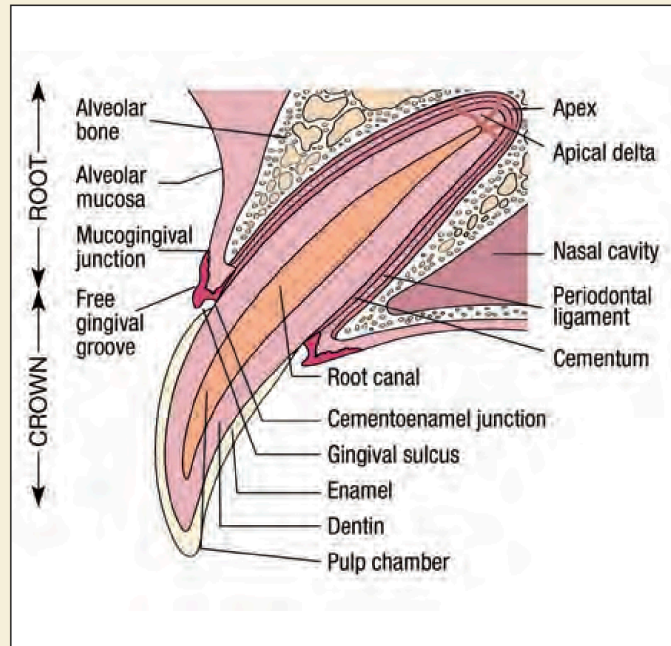
THOMAS MULDER DVM

dentalvetmobile.ca

WHY DOES DENTISTRY MATTER?

- Chronic infection: Heart, Liver, Kidney, Bladder, Immune issues, Life expectancy
- Chronic Pain: Drooling, difficulty chewing, anorexia, loss of weight and muscle mass
- Tooth loss
- Owner relationship with their pet: Inactivity, less interaction with the family, “push away” due to bad breath

DENTAL ANATOMY REVIEW



TOOTH ANATOMY

Teeth are essentially comprised of 3 layers: enamel, dentin, and pulp.

- **Pulp:** The innermost layer is the endodontic system (root canal or pulp). The endodontic system contains nerves, blood vessels, and connective tissue that nourish the tooth. The blood and nervous supply enter the tooth through the very tip (or apex) of the root.
- **Enamel:** The outer layer of the tooth crown is enamel. It is virtually all (97%) calcium and phosphorus and is the hardest substance in the body. Enamel has no nervous or circulatory system. It is applied in a very thin layer (< 1-mm thick) over the tooth surface during development. Once tooth eruption occurs, enamel cannot be naturally replaced or repaired.
- **Dentin:** The central layer, which is the vast majority of the tooth structure in mature patients, is dentin. Dentin has roughly the same mineral content as bone. It has a nervous supply and responds to stresses. Running at right angles to the root canal are dentinal tubules. Each dentinal tubule contains an odontoblastic process, which is basically a nervous supply that is limited to sensory function and can only report changes as pain.

GINGIVAL SULCUS

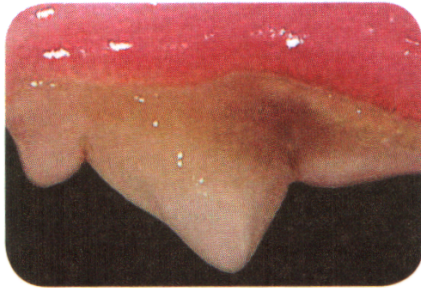
- This is the essence of veterinary dentistry
- Chronic state of disease inevitable
- Bacterial invasion vs host defenses
- Normal flora includes anaerobic bacteria
- Depth for dogs 2-3 mm, Cats < 1-2 mm
- When overwhelming infection, host defenses retreat
- Initially leading to deepening of sulcus
- Ultimately irreversible recession of alveolar bone

DENTAL DISEASE.. WHAT IS THE PROBLEM?

- There are four levels of periodontal disease. In order to meet the needs of each stage a standard of care has been developed for each level.

Stages of Periodontal Disease

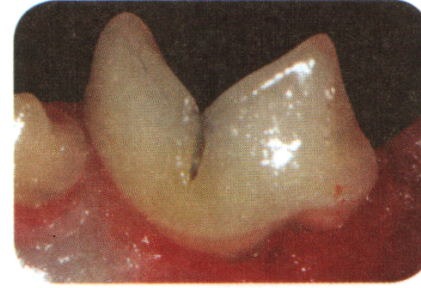
70% of cats show signs of oral disease by age three*



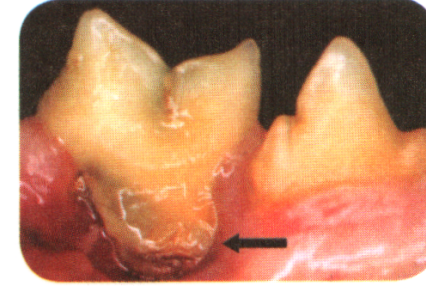
Grade 1: *Gingivitis*



Grade 2: *Early periodontal disease*



Grade 3: *Established periodontal disease*

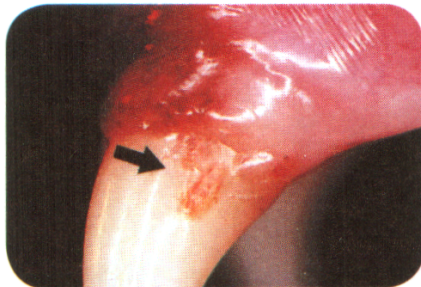


Grade 4: *Advanced periodontal disease*

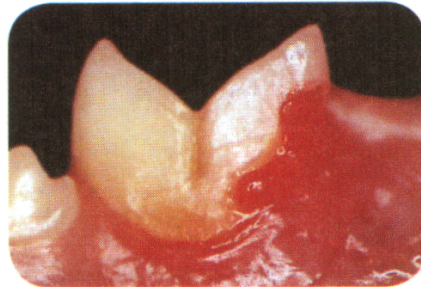
Classes of Feline Odontoclastic Resorption Lesions (FORL)

FORL is the most common cause of tooth loss in cats**

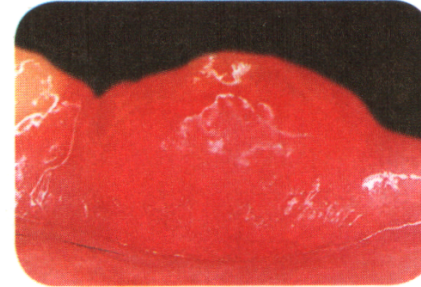
These lesions frequently begin below the gum line, so owners don't know there's a problem until teeth are seriously damaged



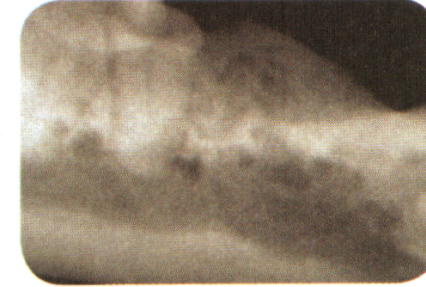
Class 2



Class 3



Class 4



Class 5

*American Veterinary Medical Association website. www.avma.org.

**Nash, Holly DVM. Dental Resorption Lesions. www.peteducation.com.

Dental images provided by Jan Bellows, DVM, Diplomate American Veterinary Dental College.

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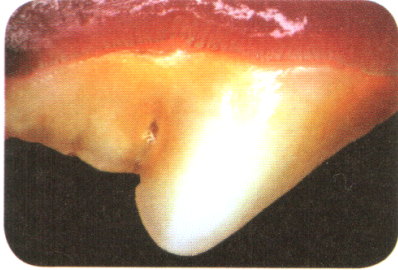
Brought to you by



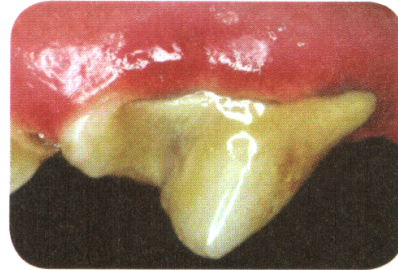
Greenies
the original smart-treat®

Stages of Periodontal Disease

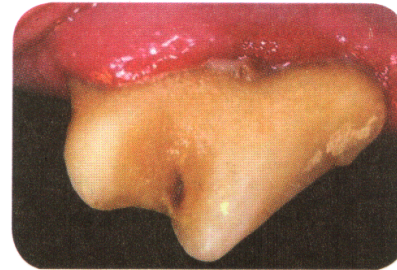
More than 80% of dogs show signs of gum disease by age three*
Periodontal disease has been linked to heart, kidney and liver problems in dogs**



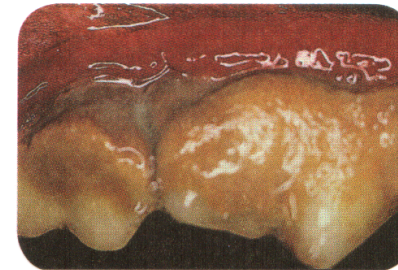
Grade 1: *Gingivitis*



Grade 2: *Early periodontal disease*



Grade 3: *Established periodontal disease*



Grade 4: *Advanced periodontal disease*

Types of Fractures

Dogs commonly fracture teeth chewing on cage doors, chain-link fences and hard toys



Enamel infraction



Enamel fracture



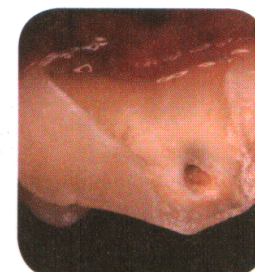
Uncomplicated crown fracture



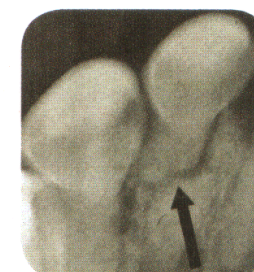
Complicated crown fracture



Uncomplicated crown-root fracture



Complicated crown-root fracture



Root fracture

*American Veterinary Medical Association website. www.avma.org.

**DeBowes, LJ, et. al. Association of periodontal disease and histologic lesions in multiple organs from 45 dogs. Department of Clinical Sciences, Kansas State University.

Journal of Veterinary Dentistry. 1996 Jun;13(2):57-60.

Dental images provided by Jan Bellows, DVM, Diplomate American Veterinary Dental College.

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the original smart-treat[®]

GRADE 1

- There is a mild to moderate amount of plaque and calculus deposited above the gum line. Early gingivitis is present.
- There is no attachment or bone loss and there is minimal increase in sulcus (gum pocket) depth.
- This stage is reversible after calculus removal.

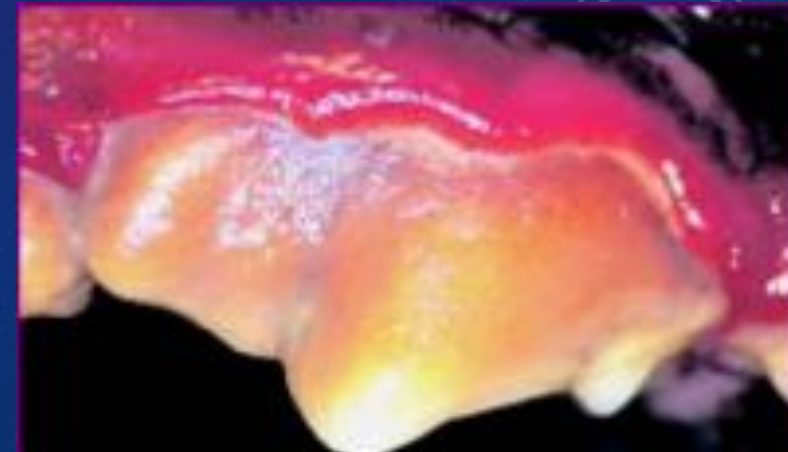






GRADE 2

- gum margins AND the attached gum is inflamed, swollen, and may bleed when touched
- No sign of gum recession yet
- Teeth have a darker, thicker film called calculus or tartar
- May also be soreness of the mouth, and bad breath (halitosis)
- Owner may be offended by
 - “Doggy Breath”
 - “Mouse Mouth”







GRADE 3

- Cherry red and bleeding attached gum being destroyed by infection and calculus
- Sore mouth affects eating and behaviour and bad breath is present.
- Irreversible symptoms such as attachment loss is beginning



Grade 3: Established periodontal disease



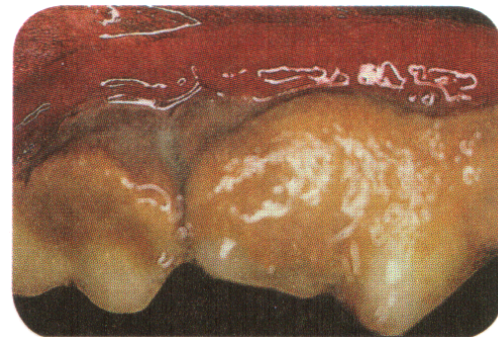
Grade 3: Established periodontal disease





GRADE 4

- Cherry red and bleeding attached gum AND bone being destroyed by infection and calculus
- Sore mouth affects eating and behaviour and bad breath present
- Irreversible symptoms of attachment loss are evident
- Multiple extractions are usually required



Grade 4: Advanced periodontal disease



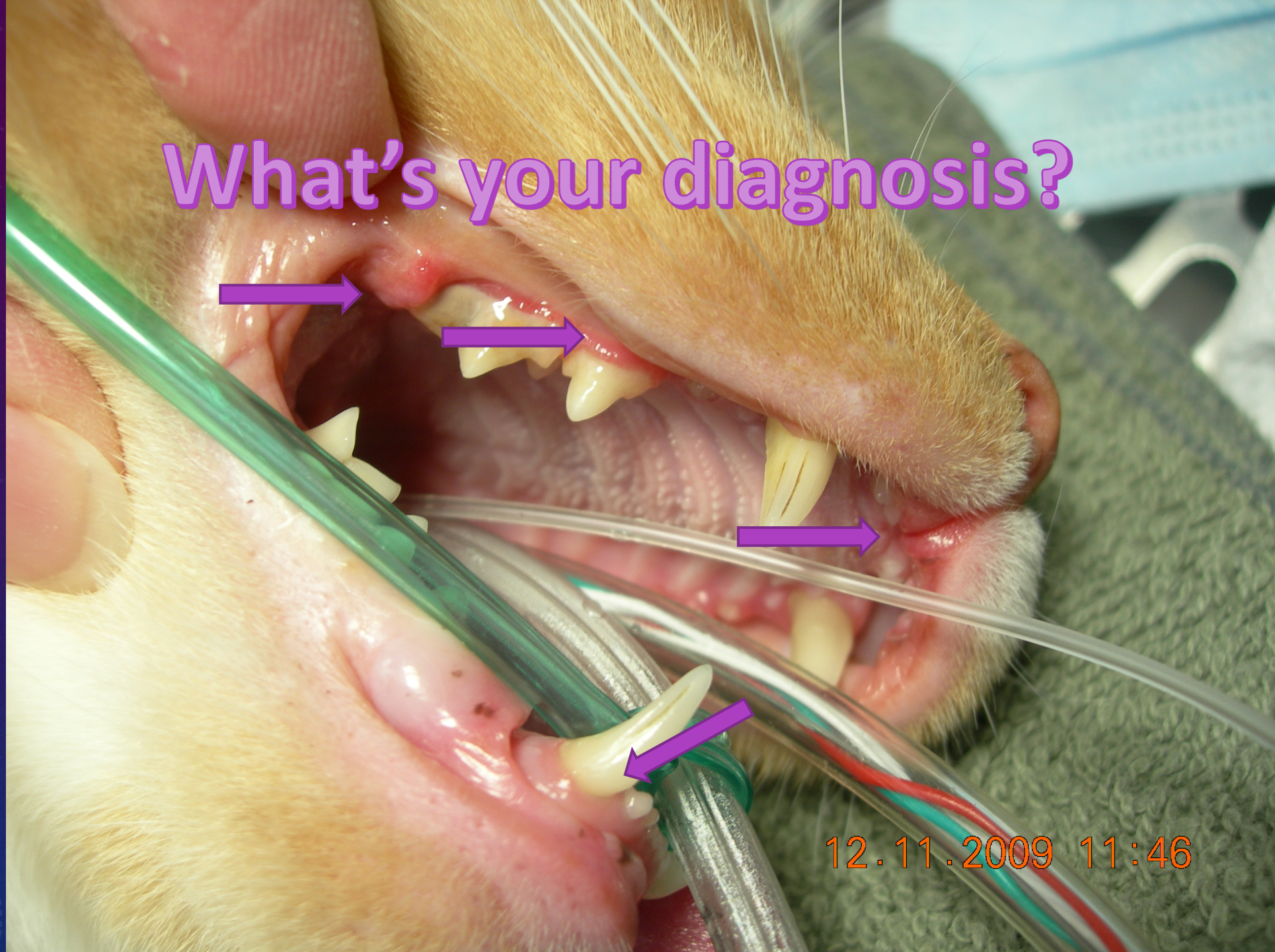








What's your diagnosis?



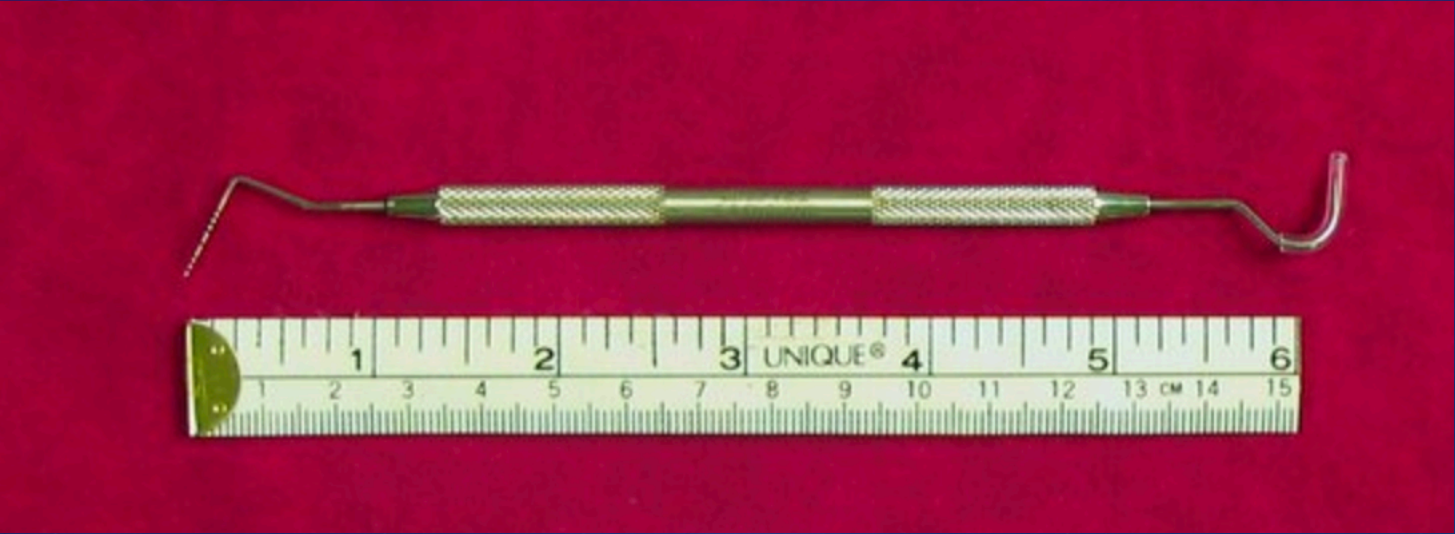
12.11.2009 11:46

Must probe to see if there is recession!



12.11.2009 12:02

DENTAL EXPLORER



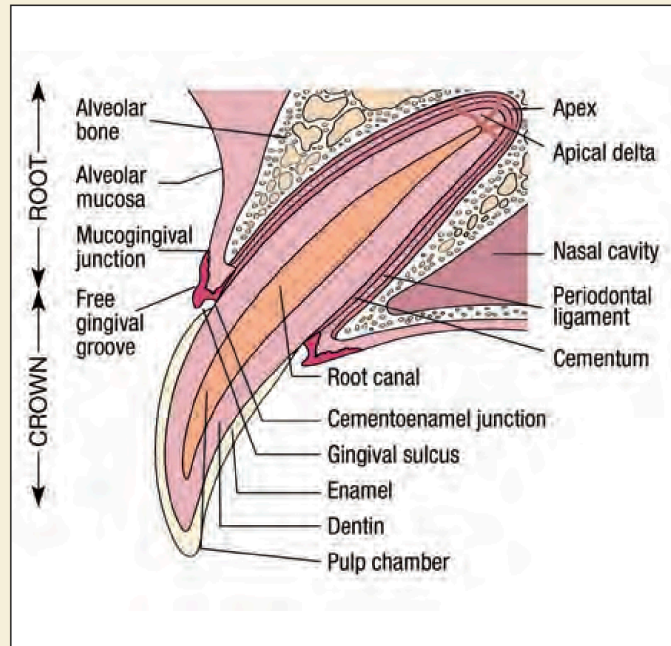
OTHER FINDINGS

- Retained Deciduous
- Malocclusions
- Deformed Teeth
- Fractures
- Abscesses
- Non-Vital Teeth
- Tumours/Cysts
- Foreign Body
- Caries
- Resorbative Lesions
- Gingival Hyperplasia/Stomatitis
- Viral Disease

RETAINED DECIDUOUS



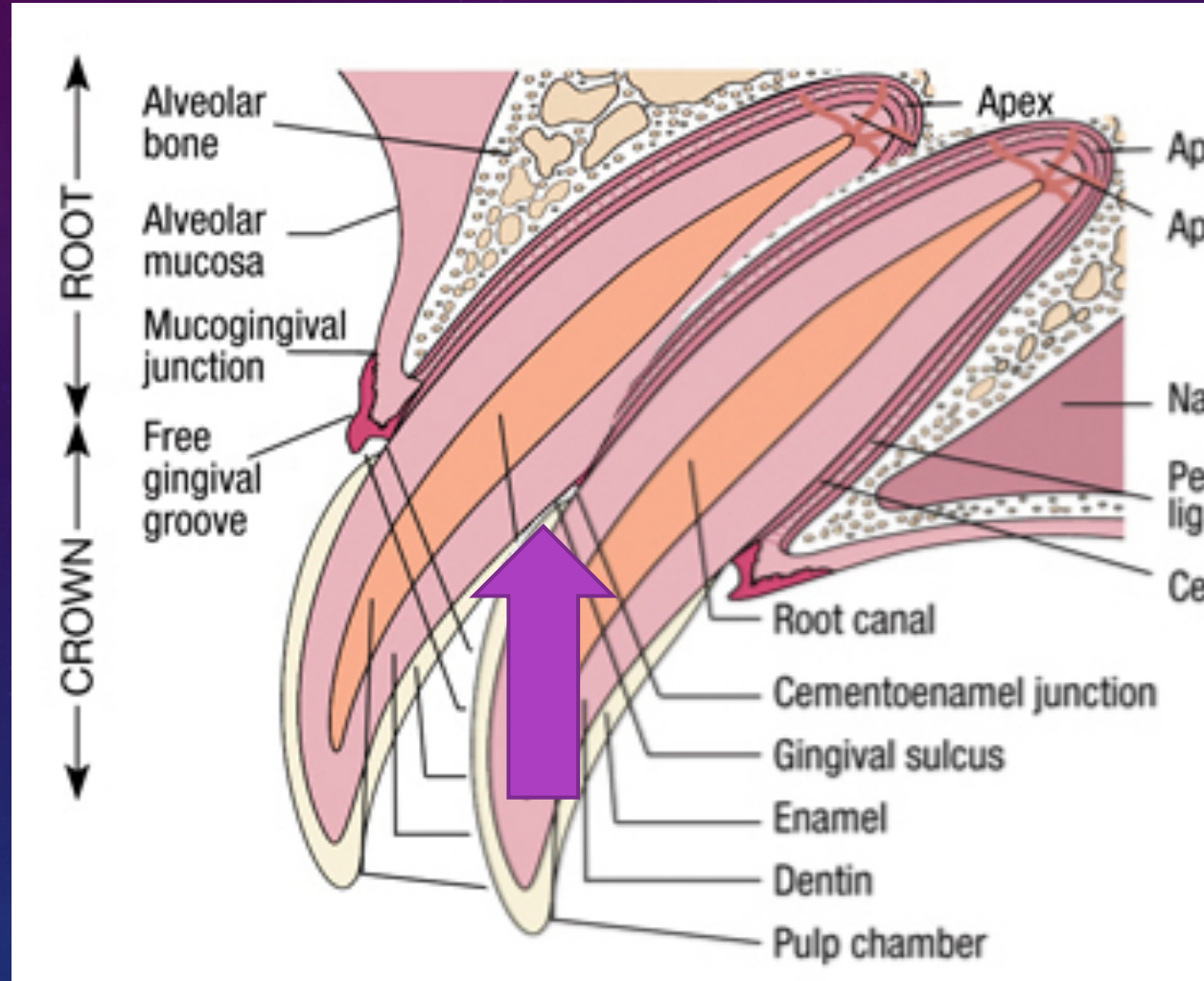
DENTAL ANATOMY REVIEW



TOOTH ANATOMY

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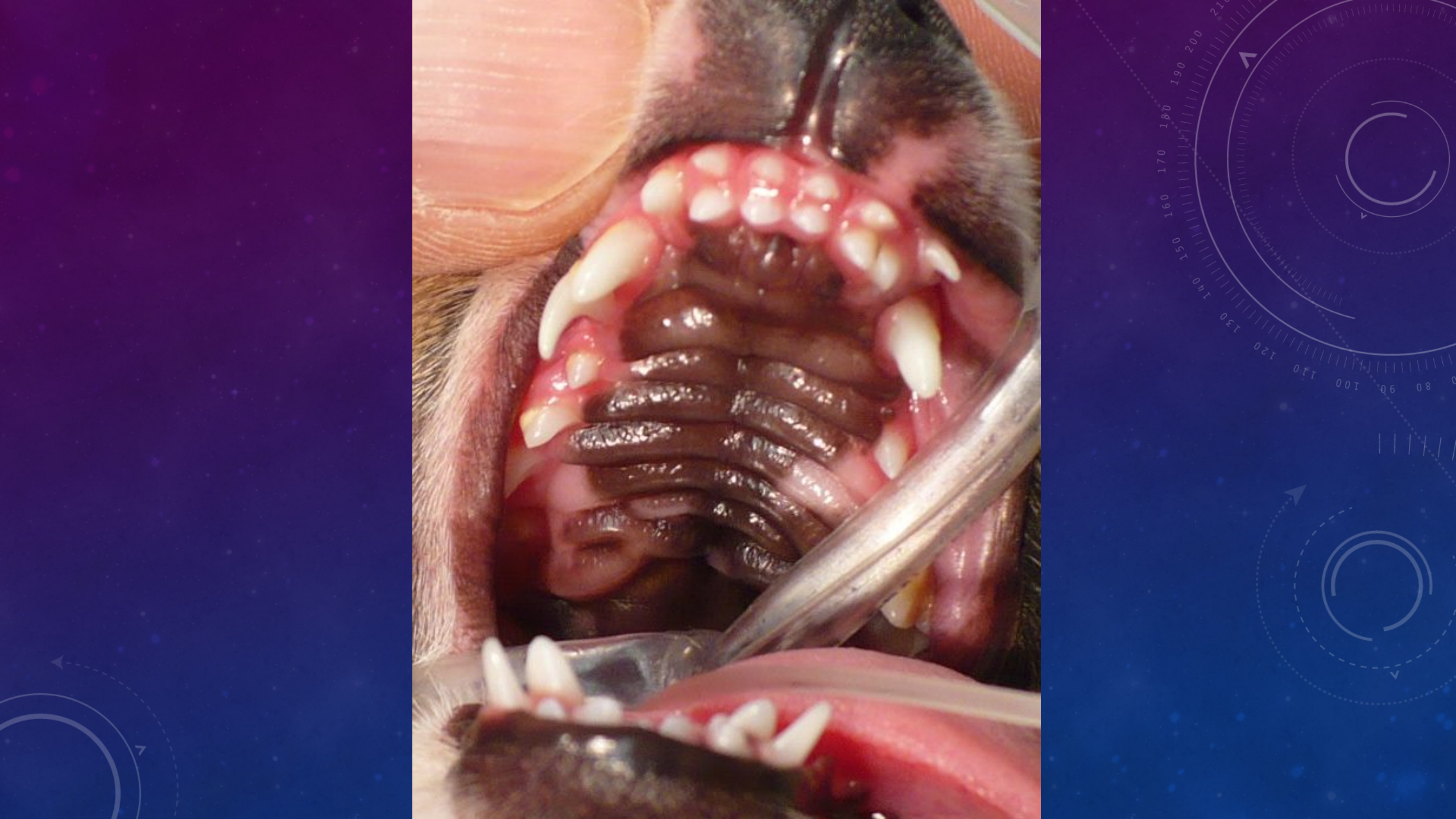
Absence of Periodontium!!





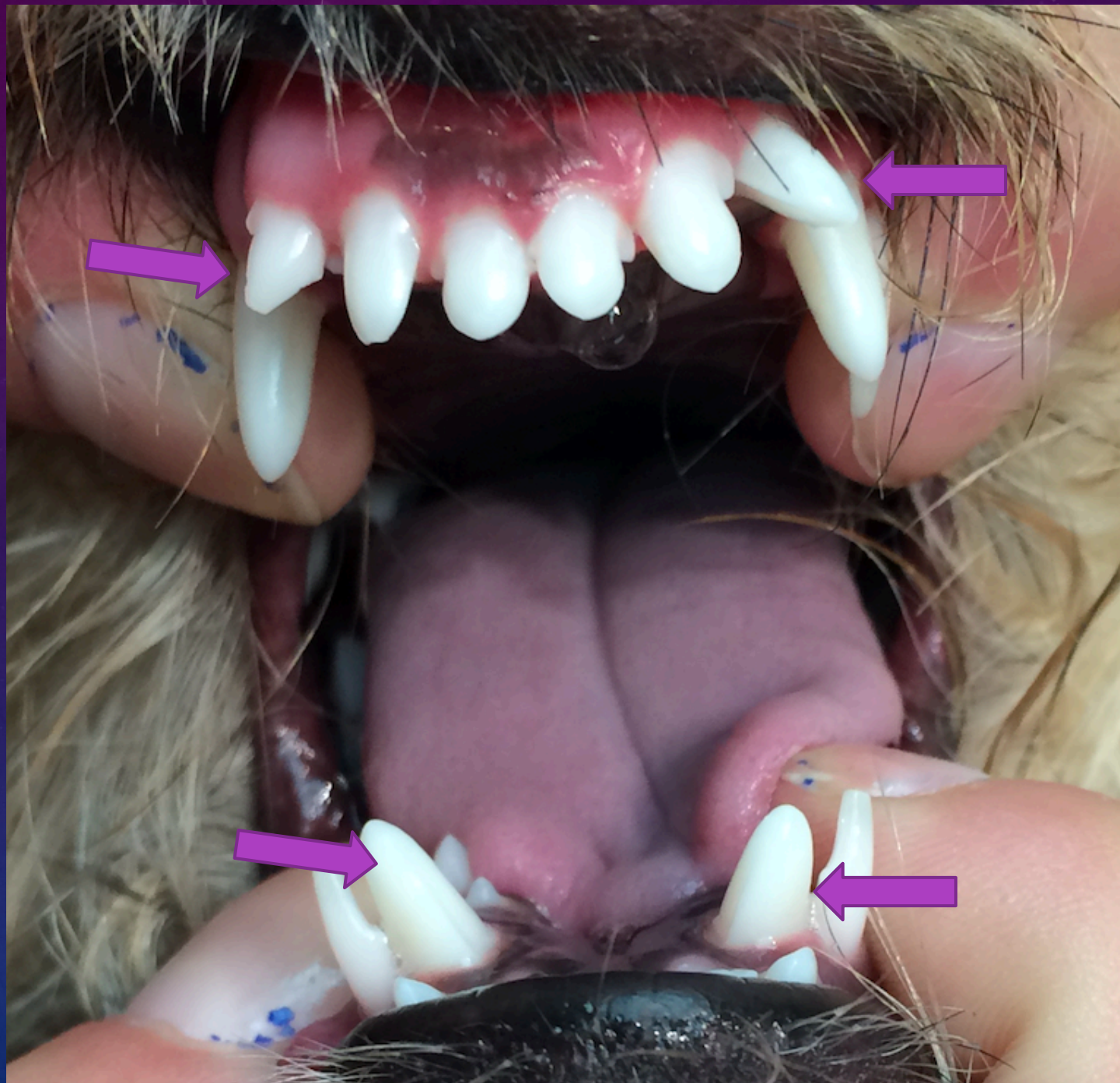
12.11.2009 12:35





CONSEQUENCES

- Base Narrow Canine teeth
- Apical Abscesses
- Periodontal disease of Adult tooth
- Nidus of Bacterial infection may spread to entire mouth



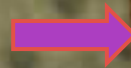
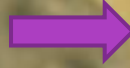








1:9 ratio



MANDIBLE INCISORS



MALOCCLUSIONS





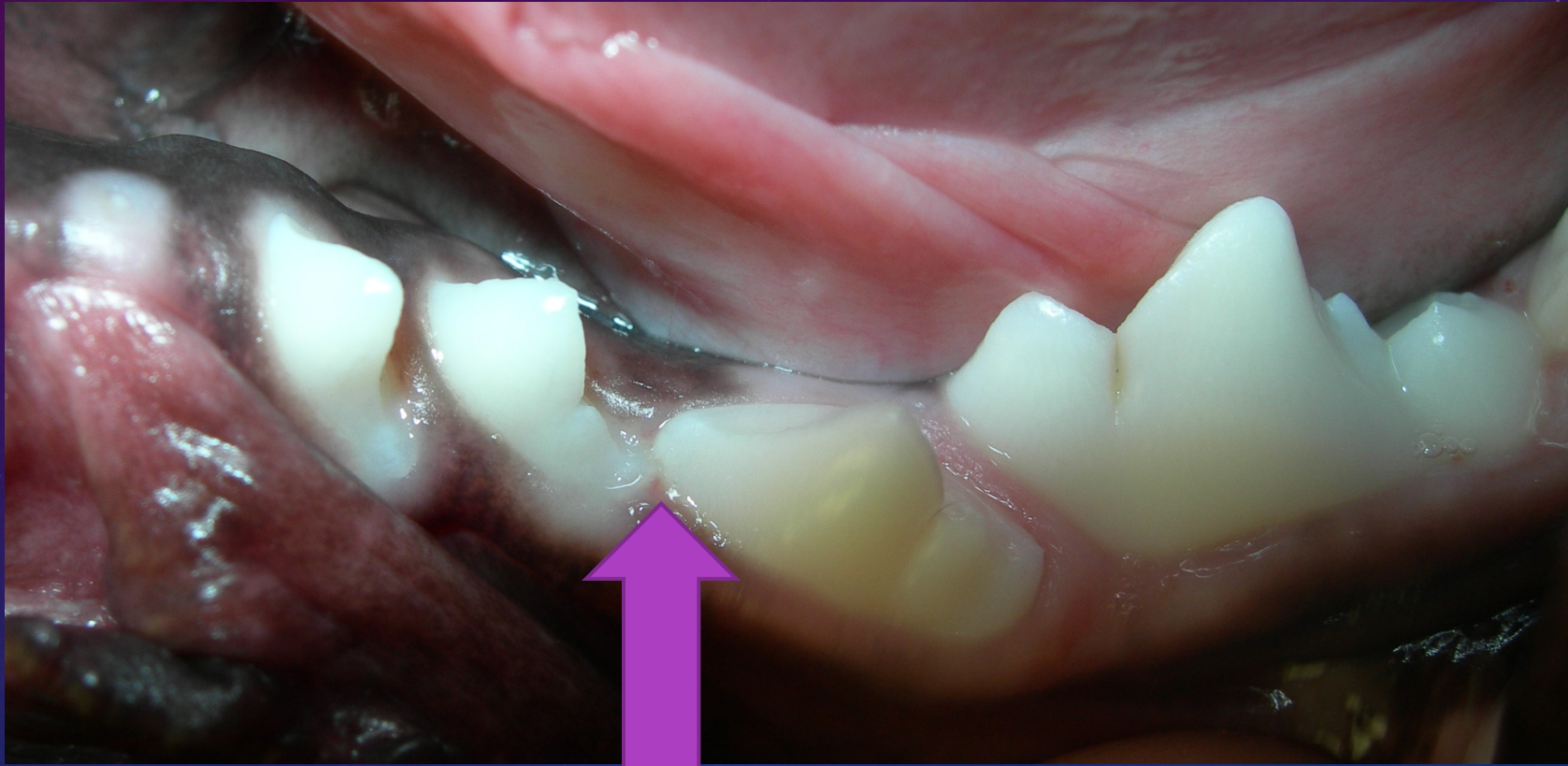


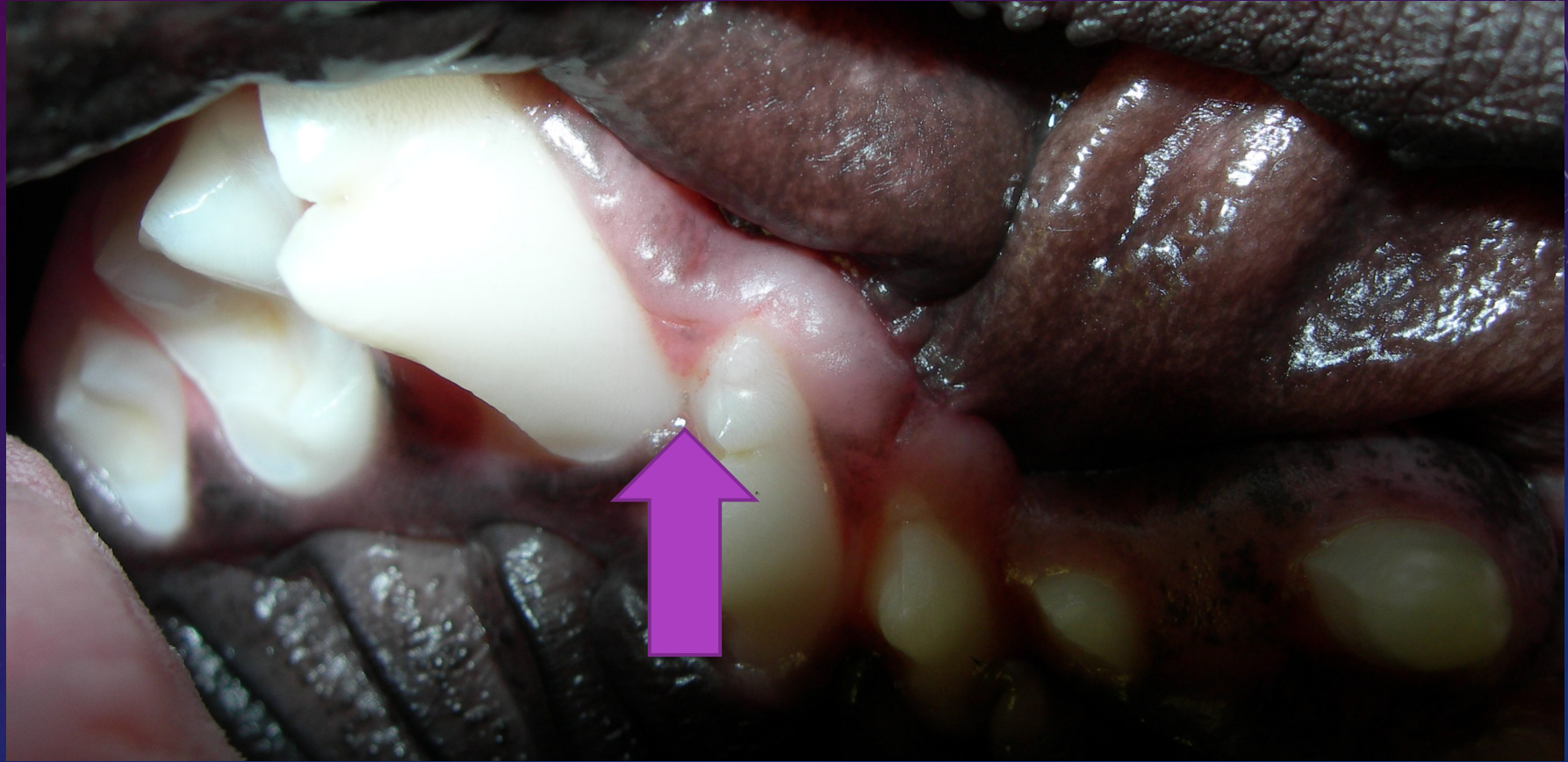


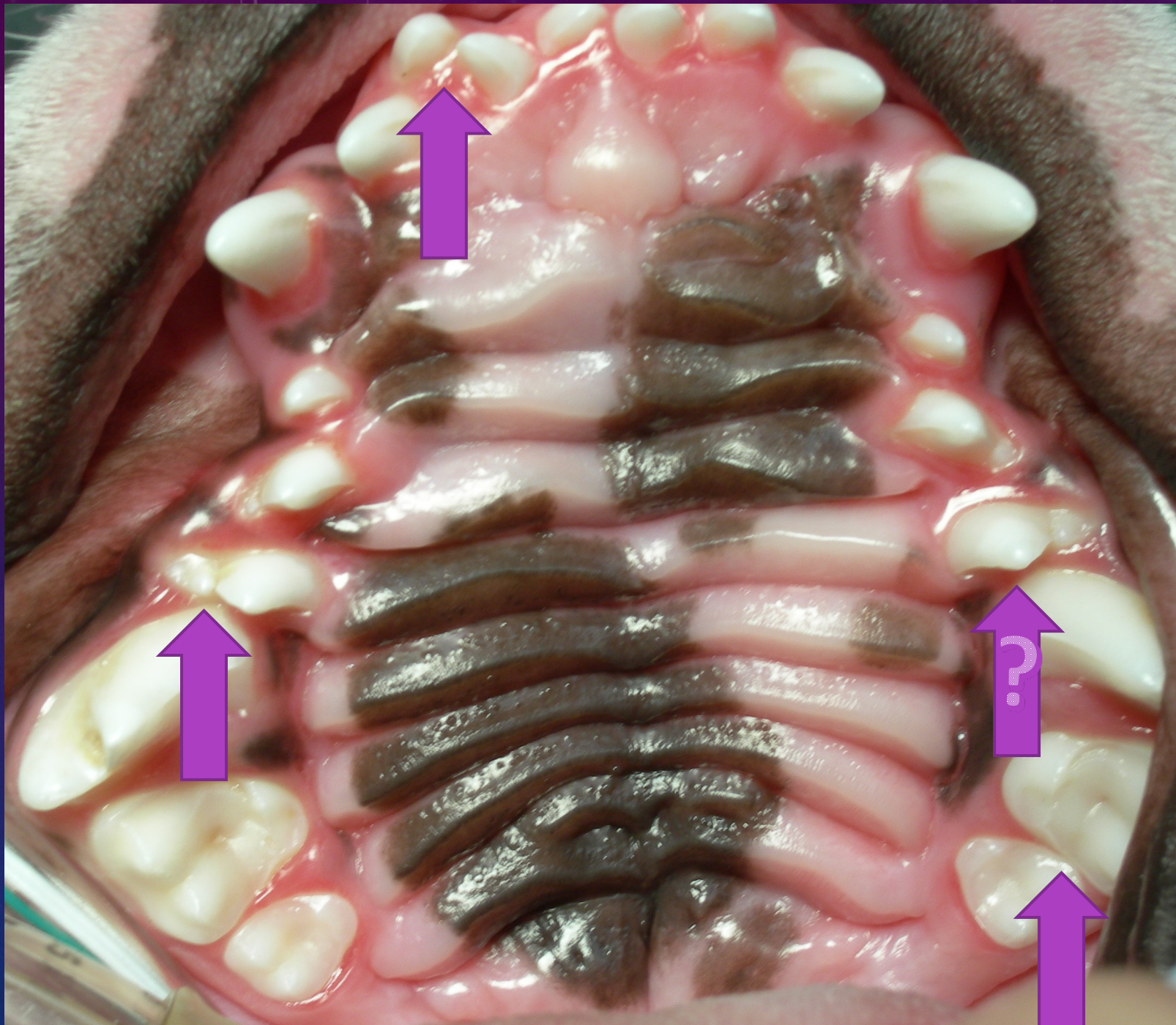


















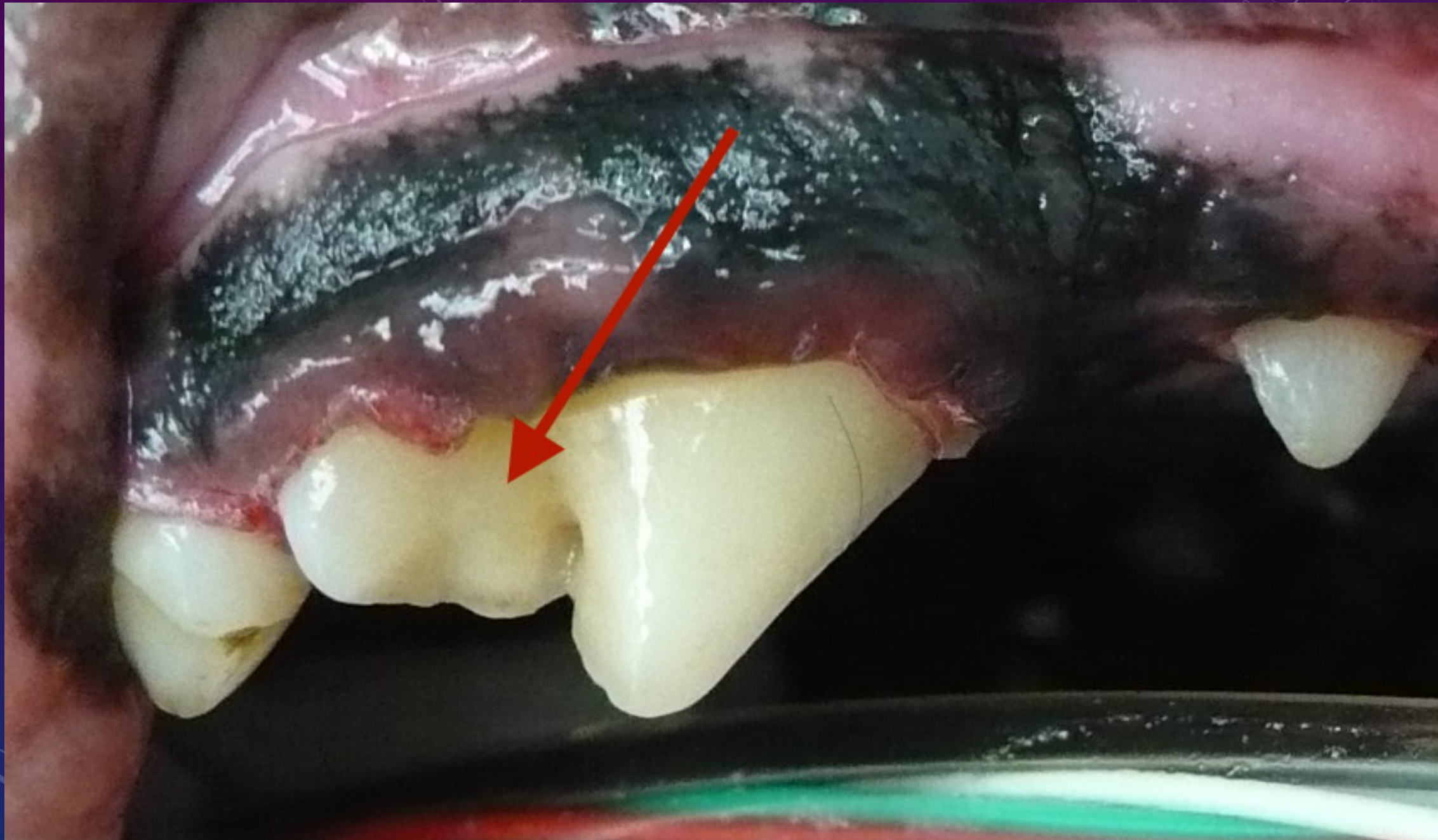




DEFORMED TEETH





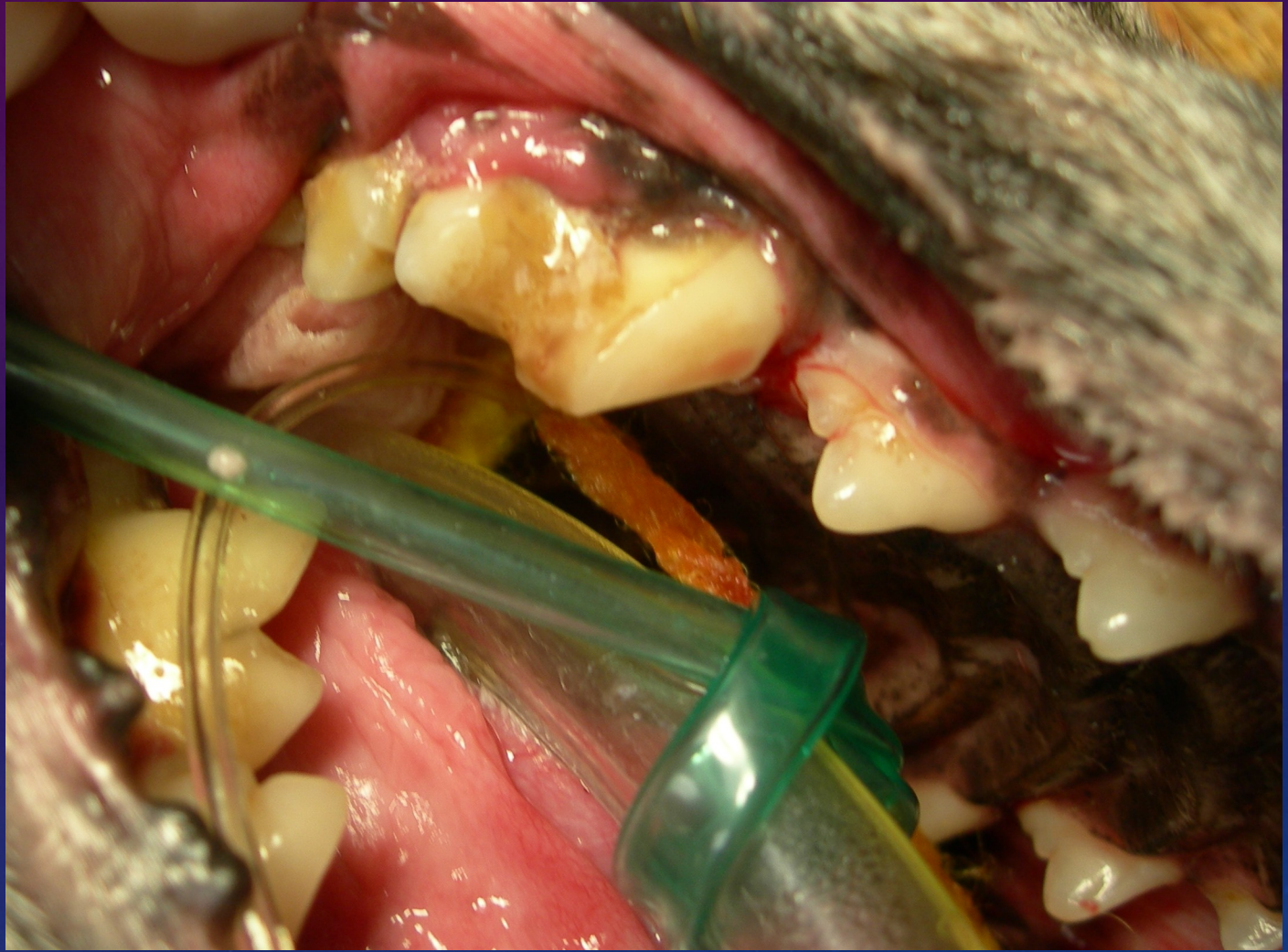


FRACTURES

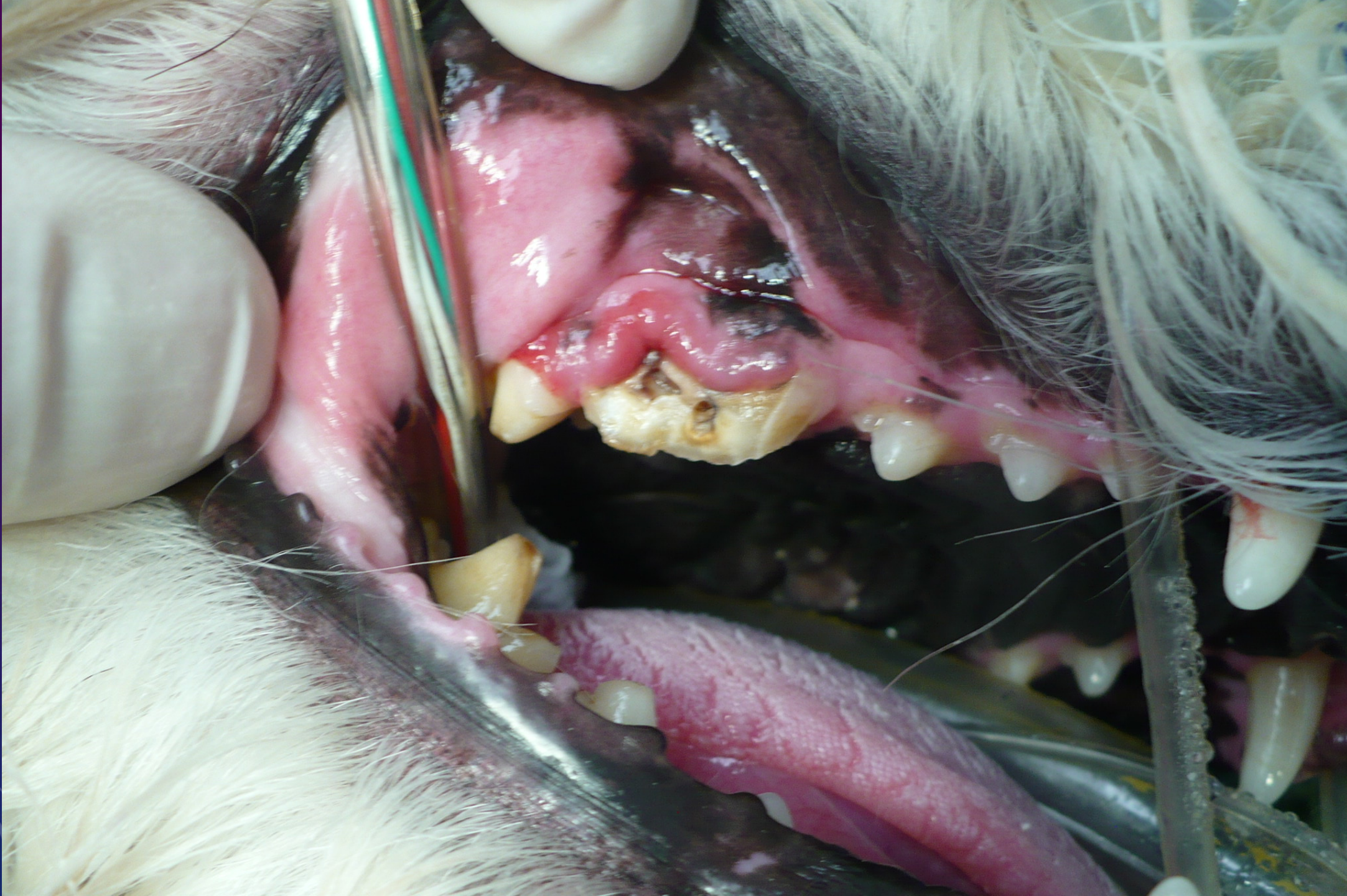












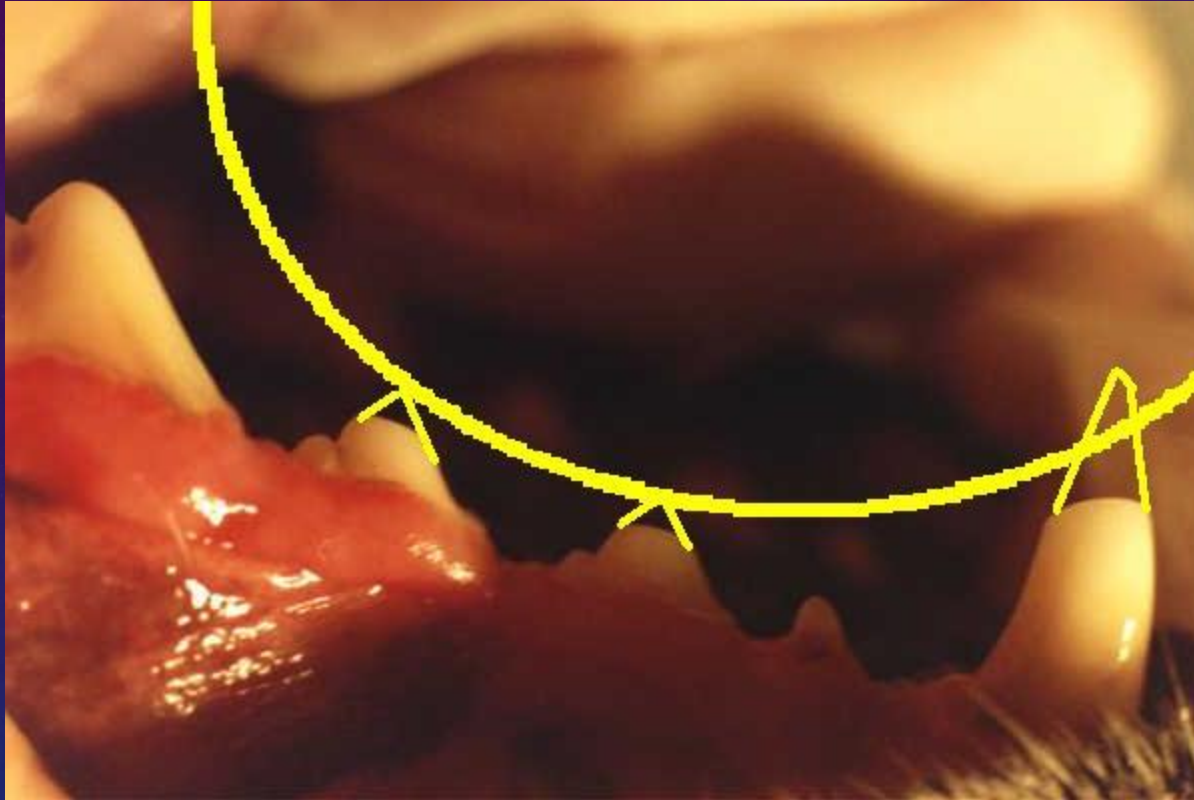












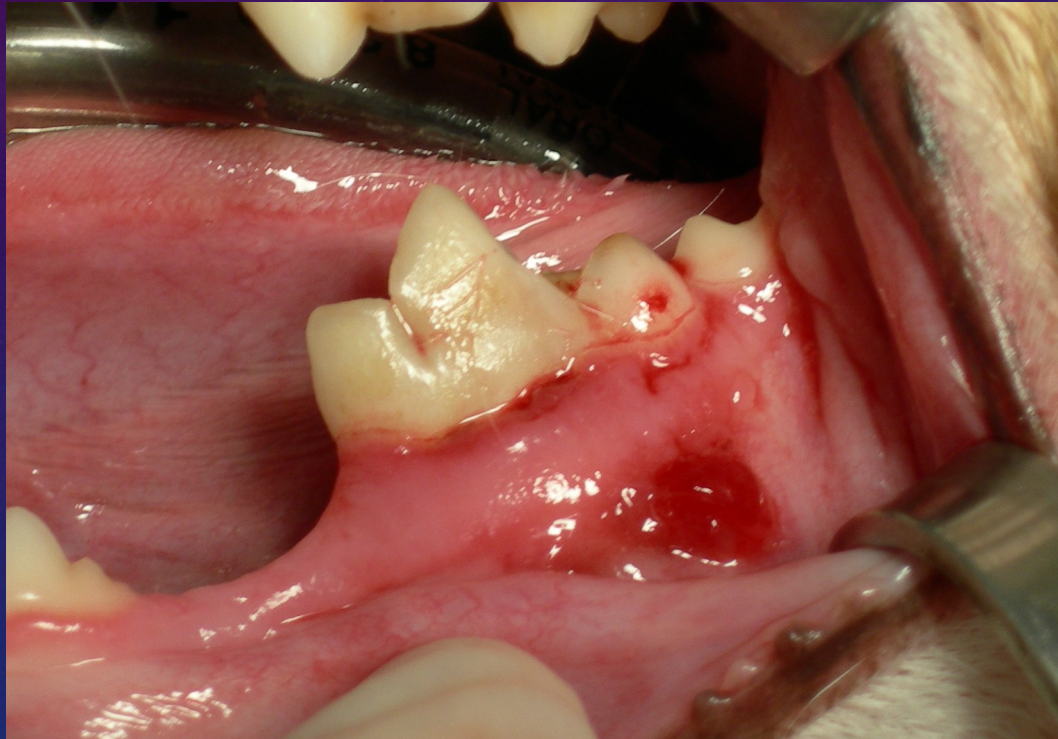


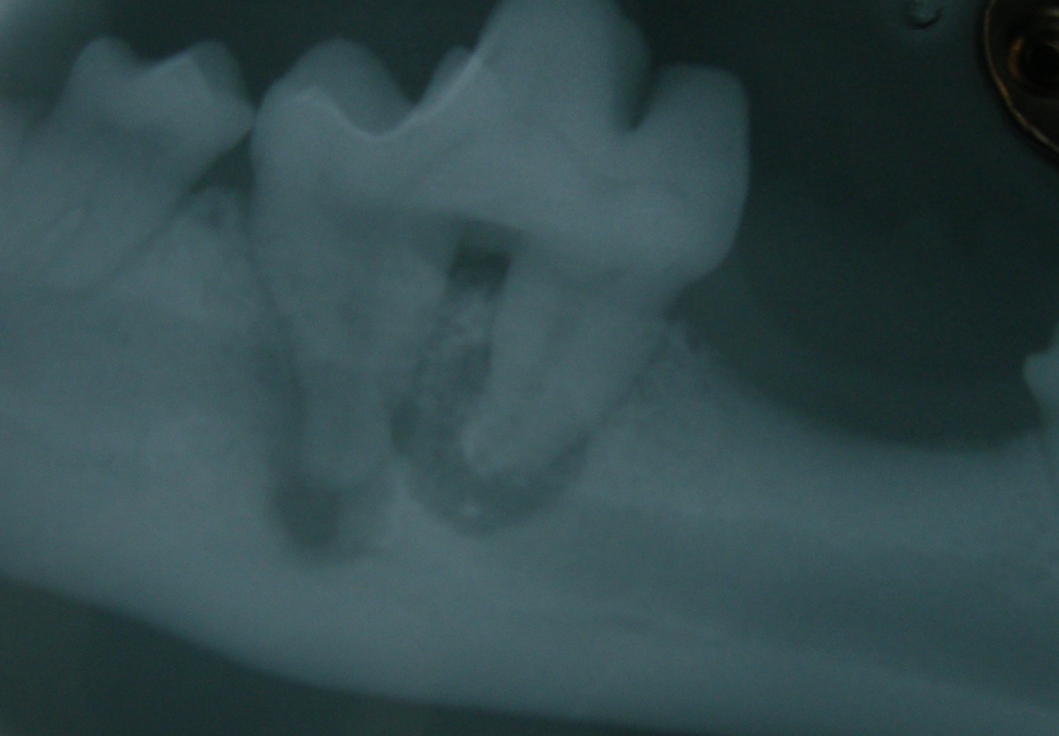






ABSCESSSES







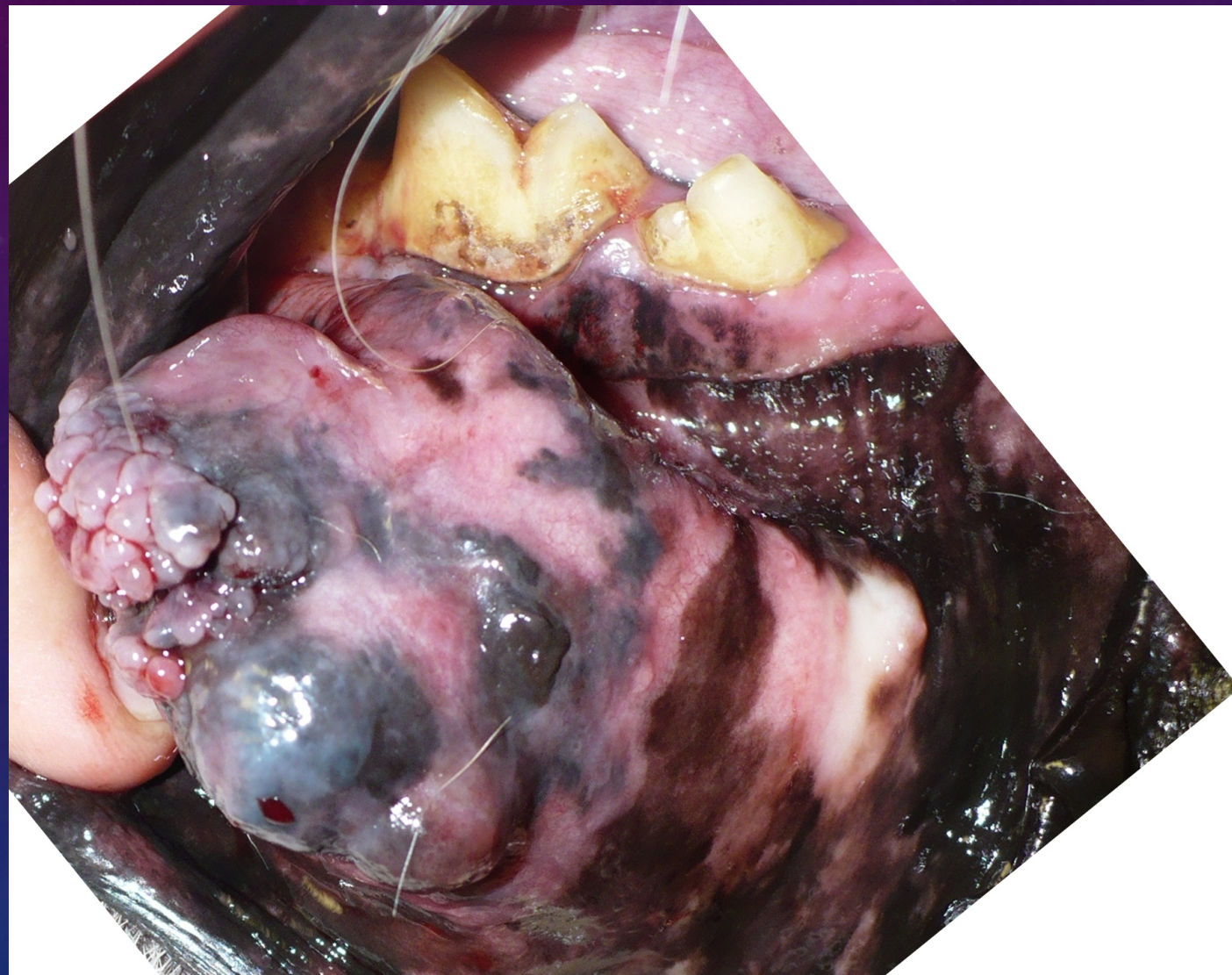


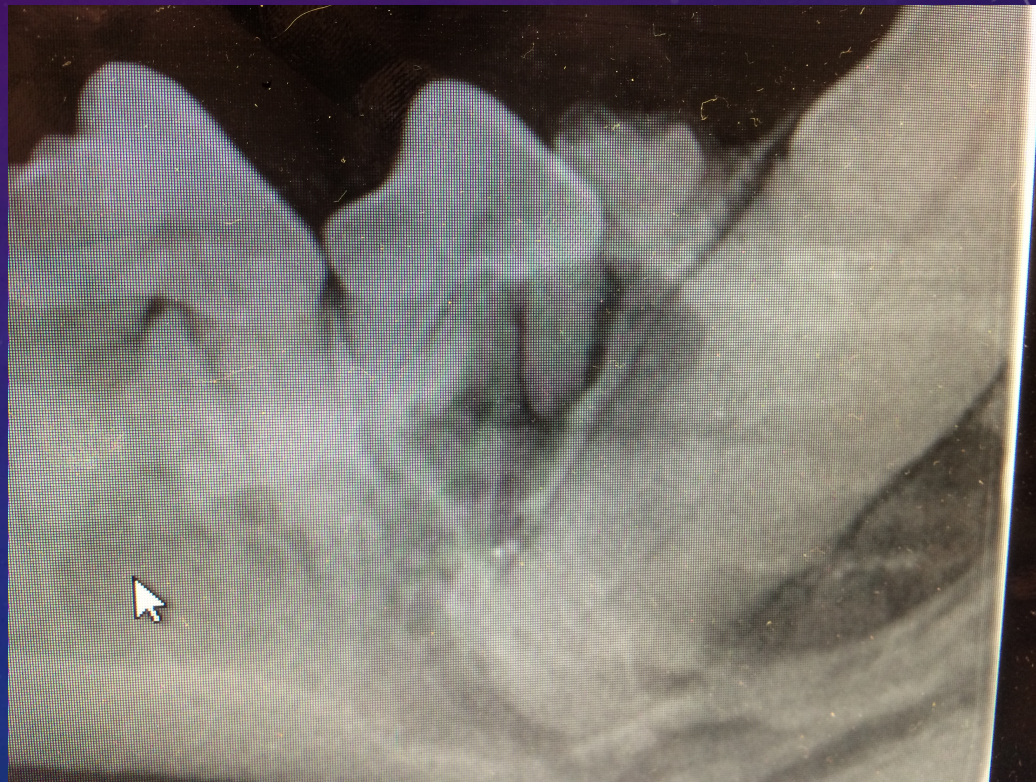
NON – VITAL TEETH



TUMOURS / CYSTS







FOREIGN BODY







GINGIVAL HYPERPLASIA / STOMATITIS





CARIES



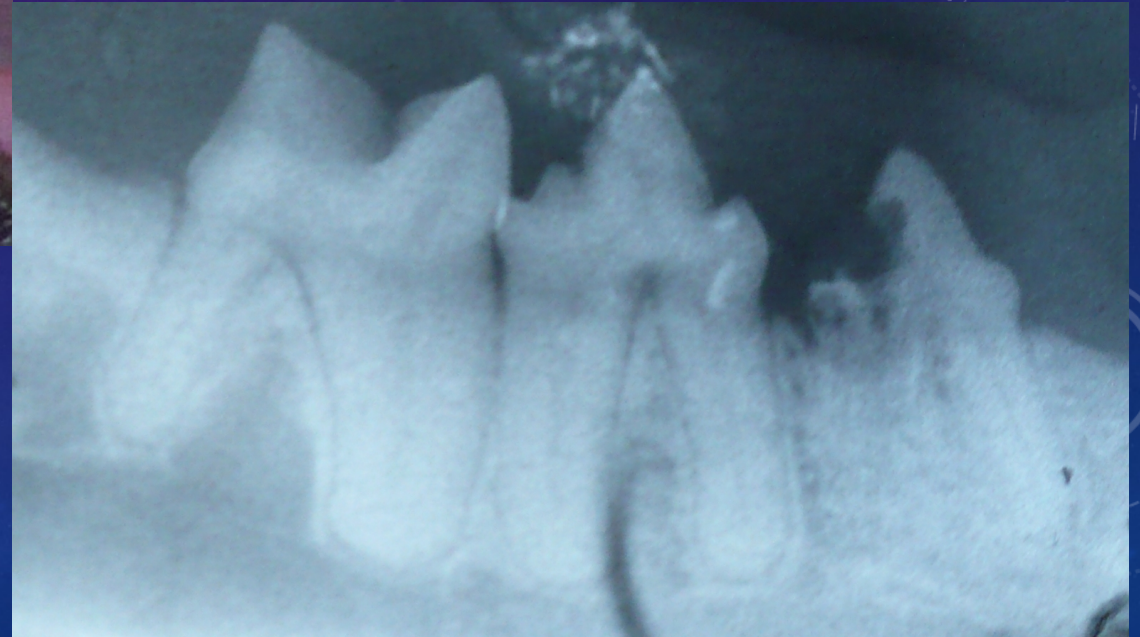
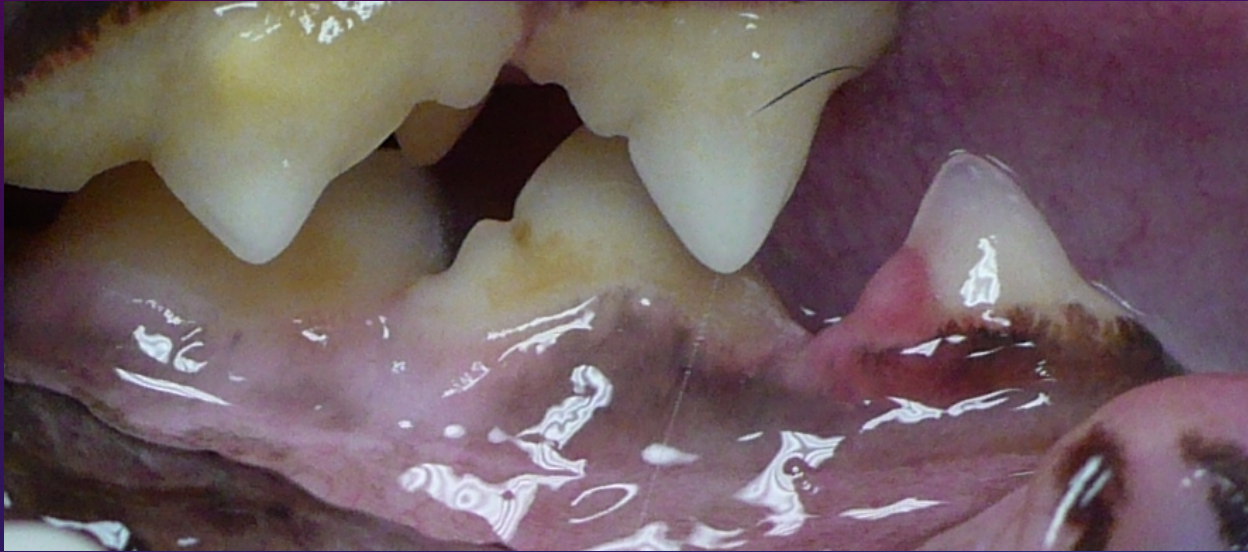
Stomatitis



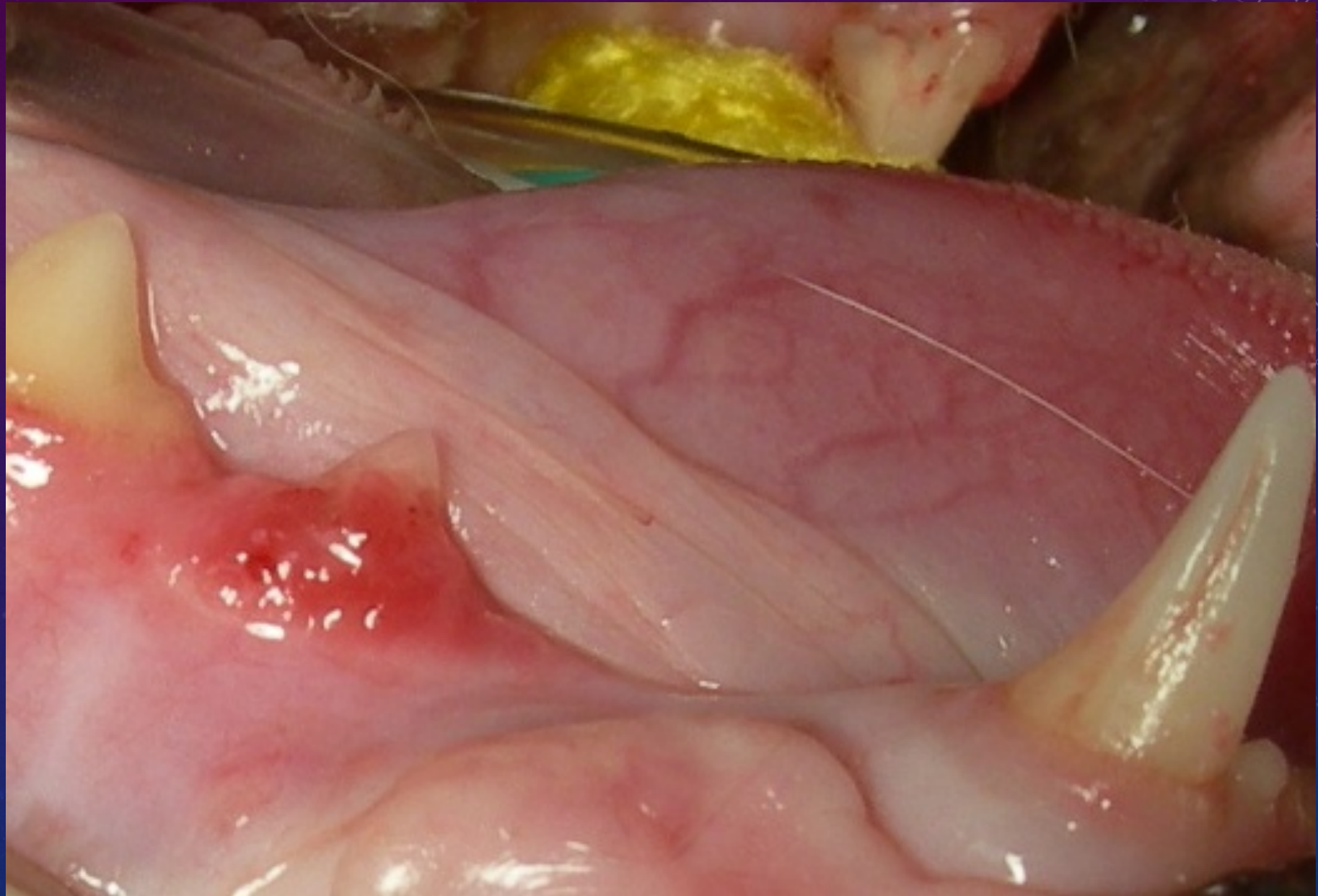
VIRAL DISEASES



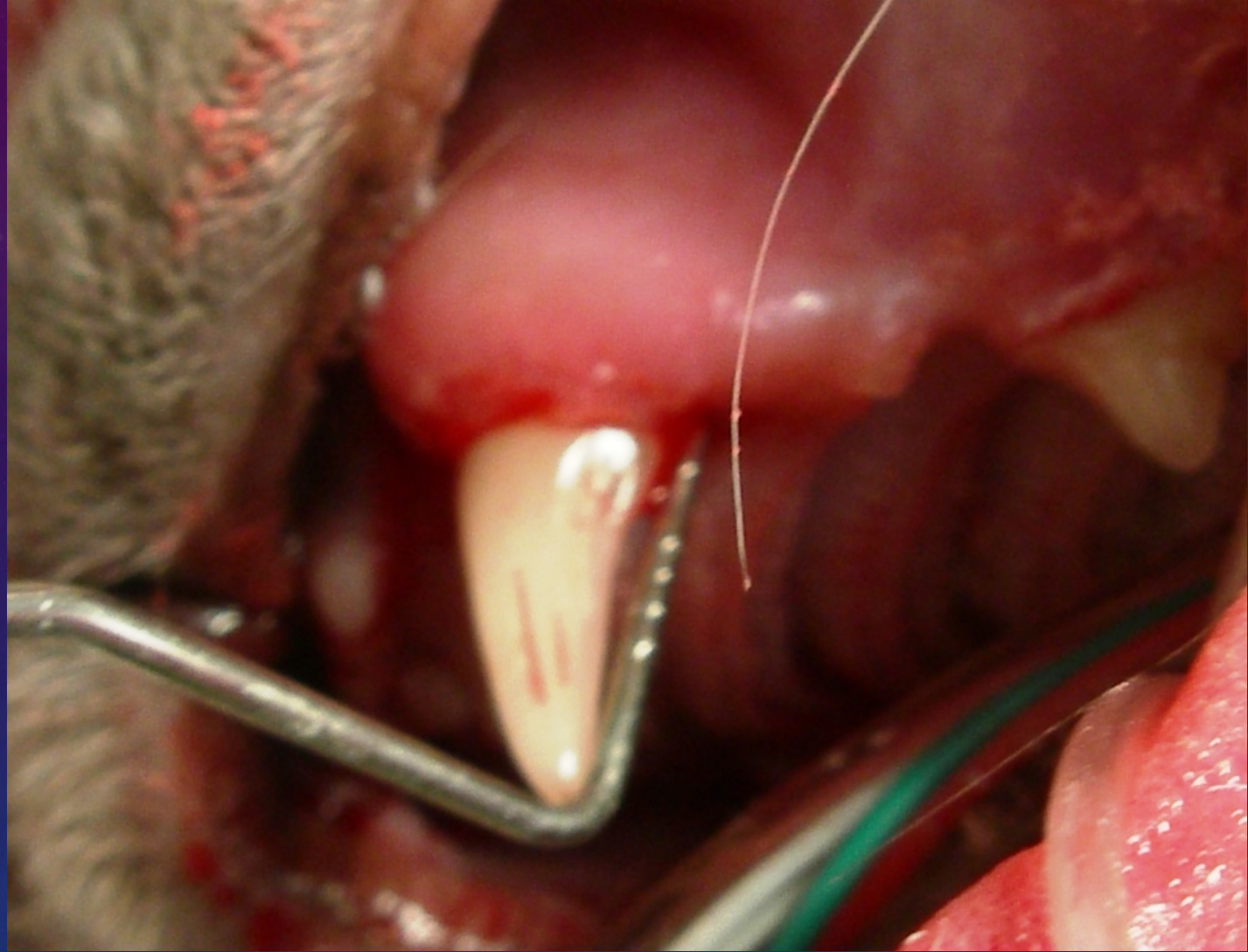
FELINE ODONTOCLASTIC RESORPTIVE LESIONS



aka "Tooth Resorption"

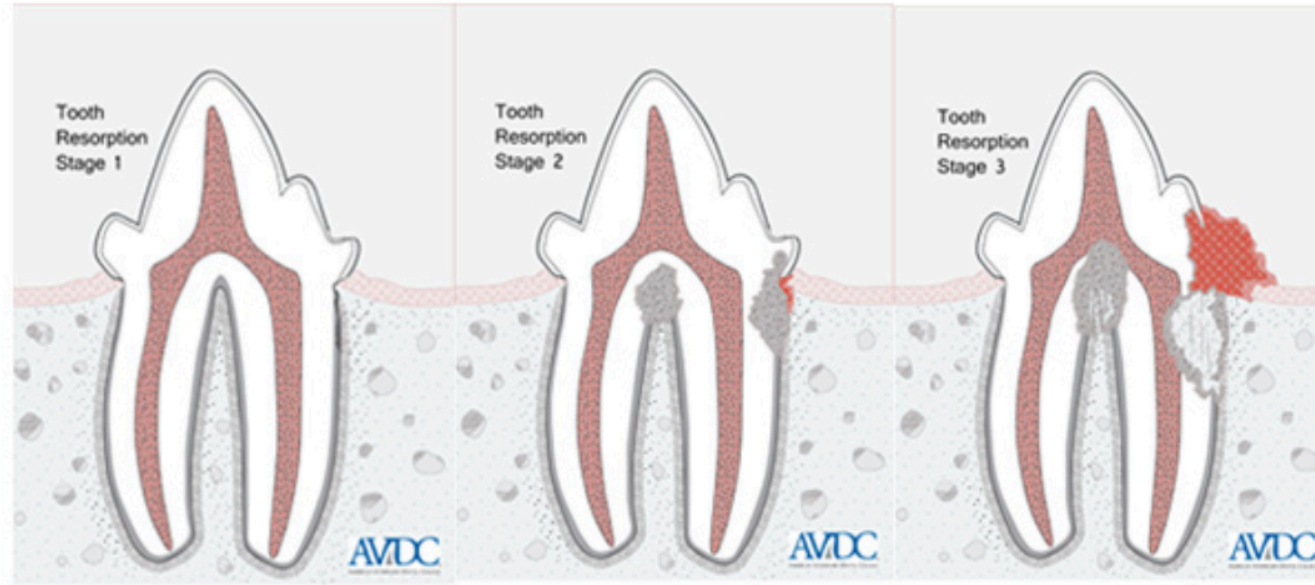




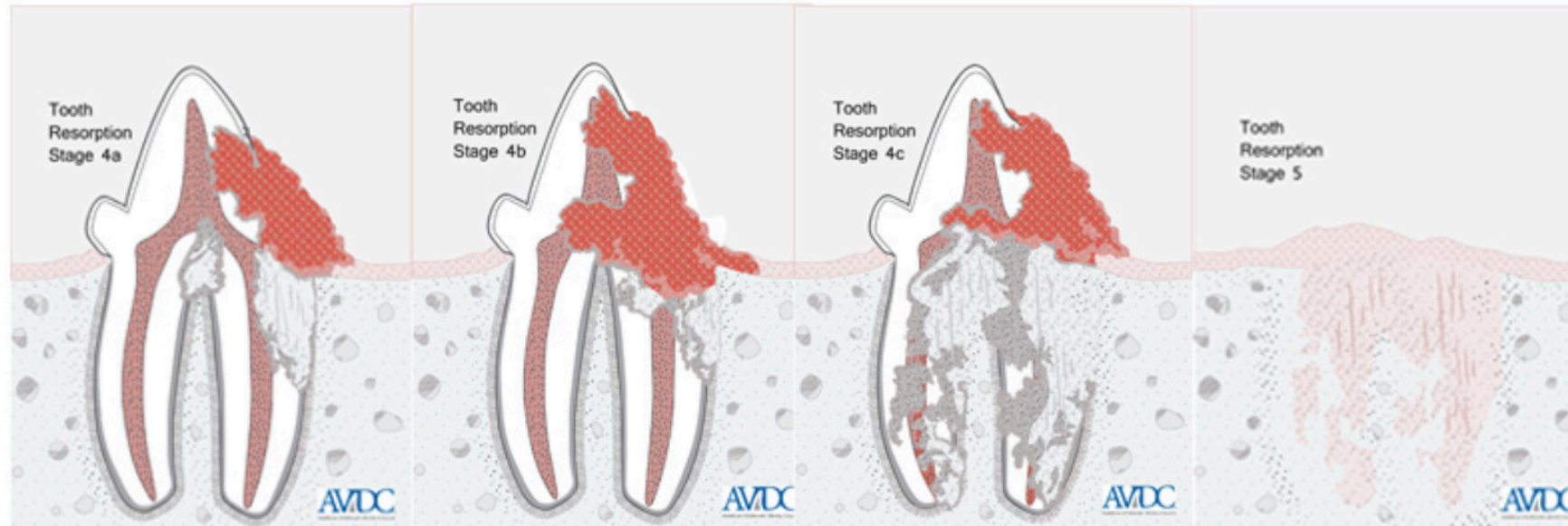




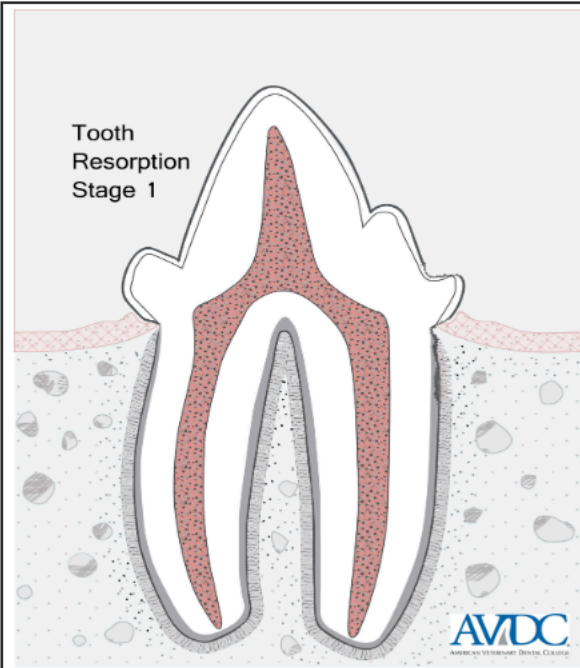
Stages of Tooth Resorption



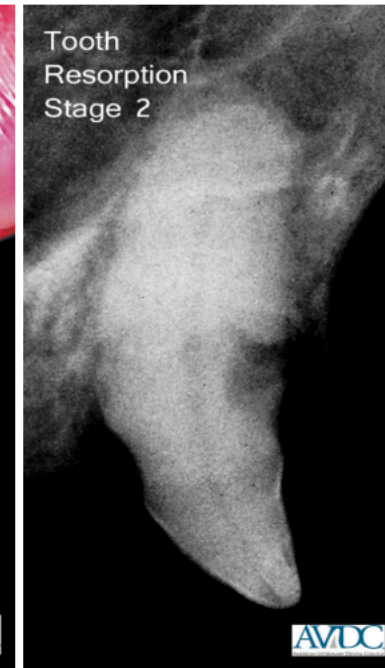
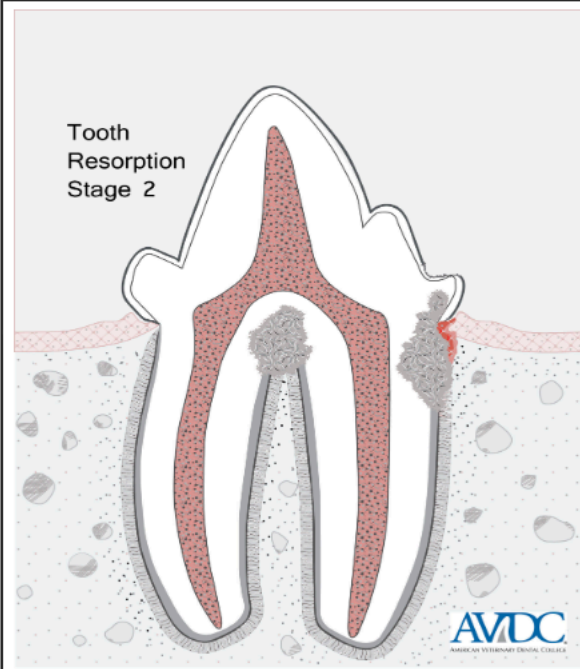
Tooth Resorption - AVDC Classification of Clinical Stages



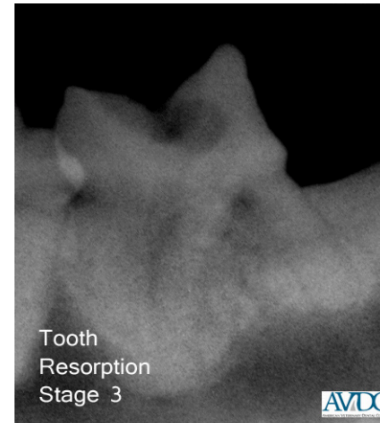
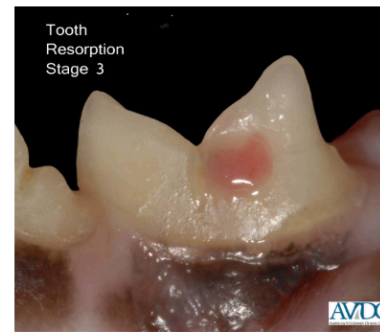
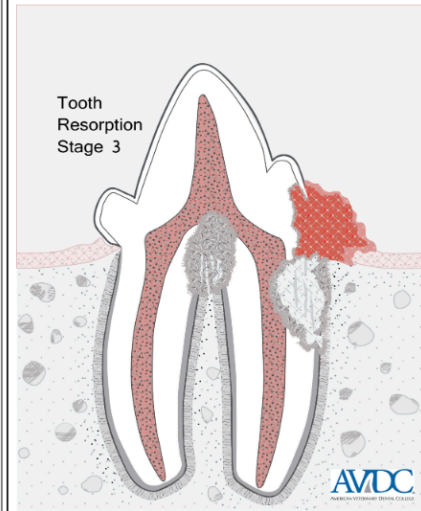
Stage 1 (TR 1):
Mild dental hard
tissue loss
(cementum or
cementum and
enamel).



Stage 2 (TR 2):
Moderate dental
hard tissue loss
(cementum or
cementum and
enamel with loss
of dentin that
does not extend
to the pulp
cavity).

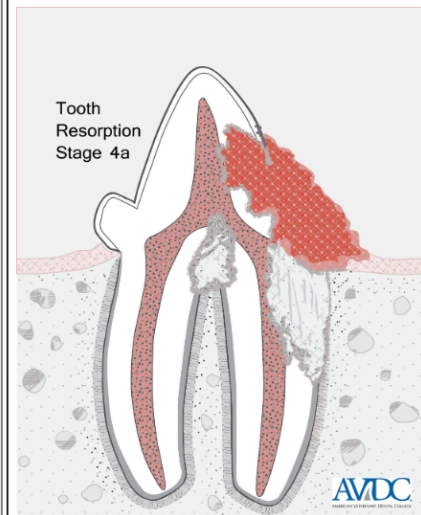


Stage 3 (TR 3):
Deep dental hard tissue loss (cementum or enamel and enamel with loss of dentin that extends to the pulp cavity); most of the tooth retains its integrity.



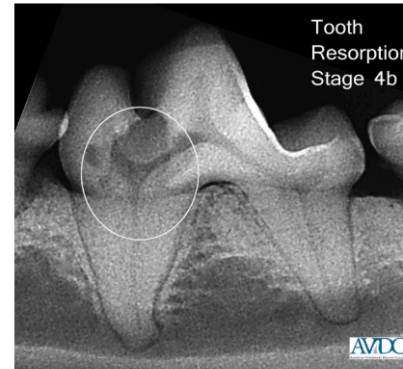
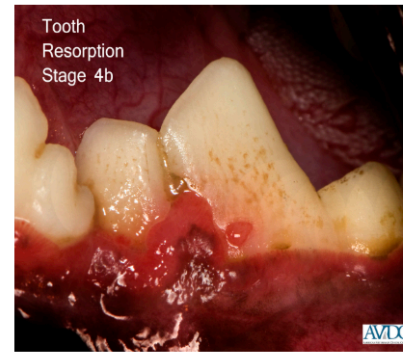
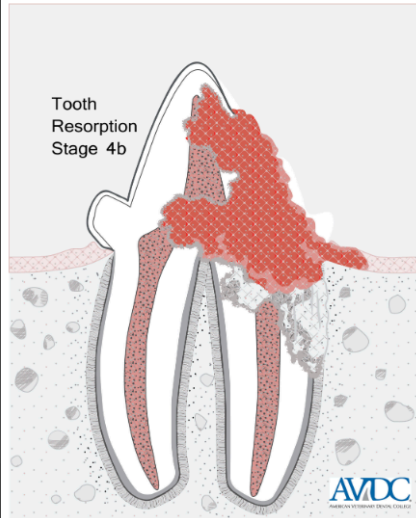
Stage 4 (TR 4):
Extensive dental hard tissue loss (cementum or enamel and enamel with loss of dentin that extends to the pulp cavity); most of the tooth has lost its integrity.

TR4a Crown and root are equally affected;



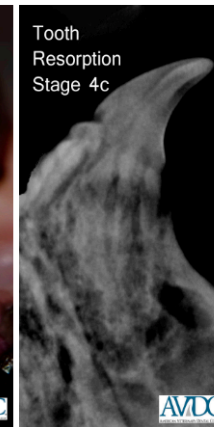
Stage 4 (TR 4): Extensive dental hard tissue loss (cementum or cementum and enamel with loss of dentin that extends to the pulp cavity); most of the tooth has lost its integrity.

TR4b: Crown is more severely affected than the root;

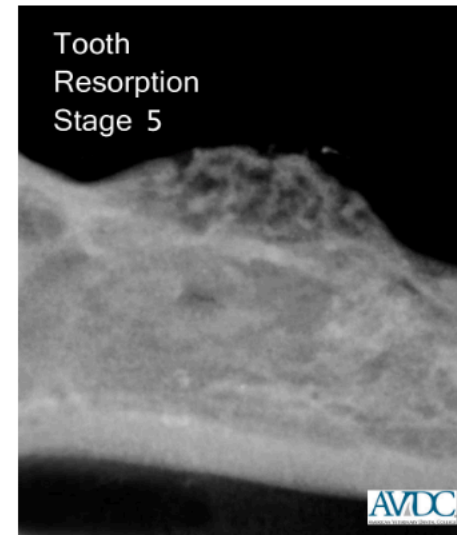
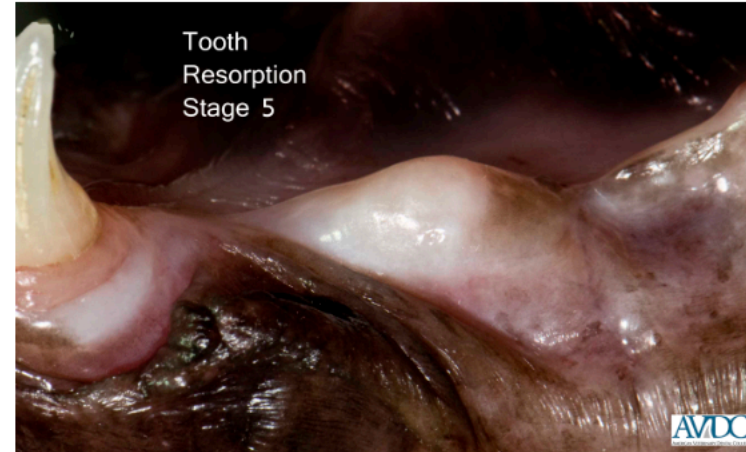
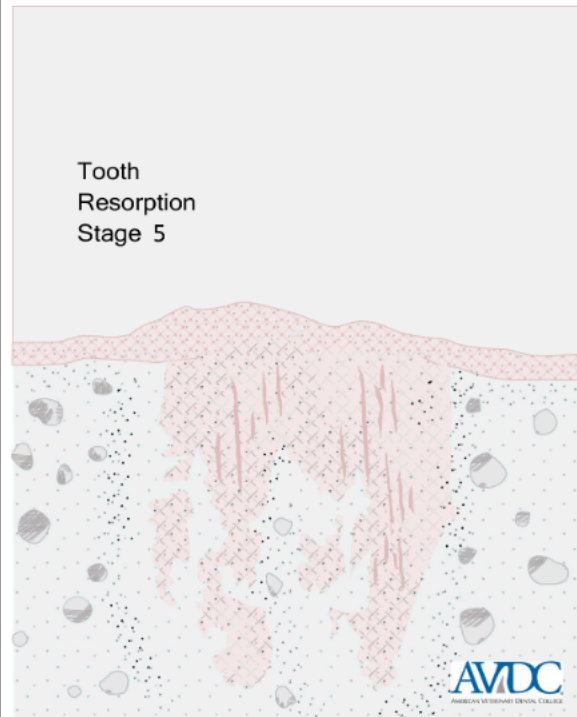


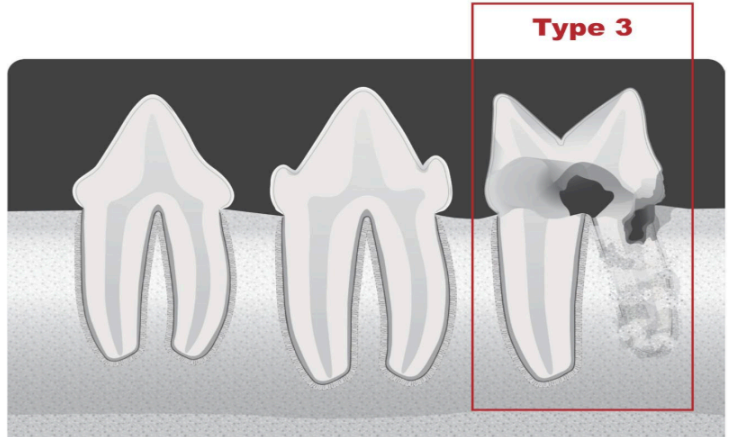
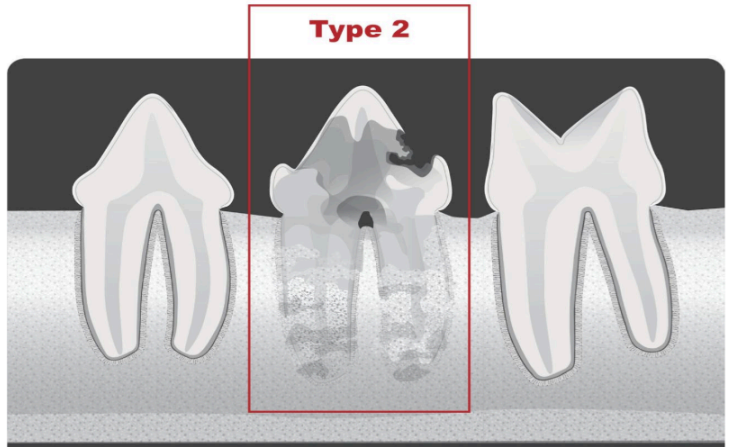
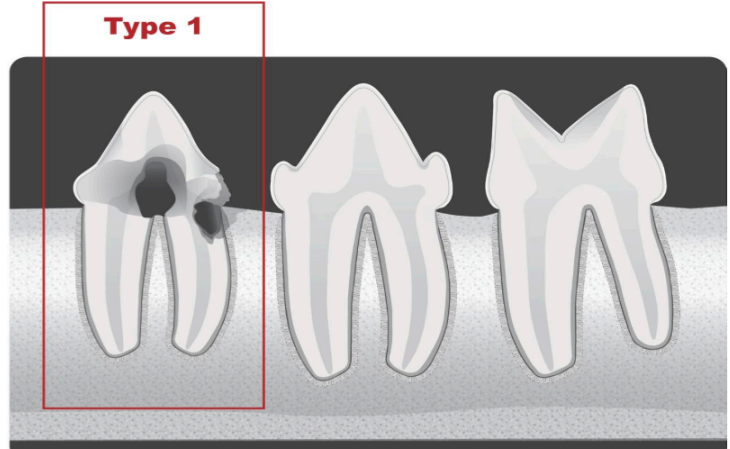
Stage 4 (TR 4):: Extensive dental hard tissue loss (cementum or cementum and enamel with loss of dentin that extends to the pulp cavity); most of the tooth has lost its integrity.

TR4c: Root is more severely affected than the crown.

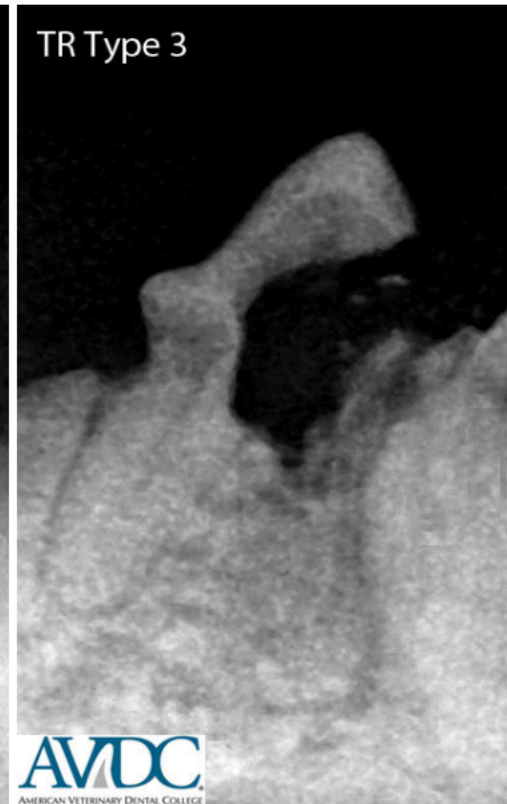
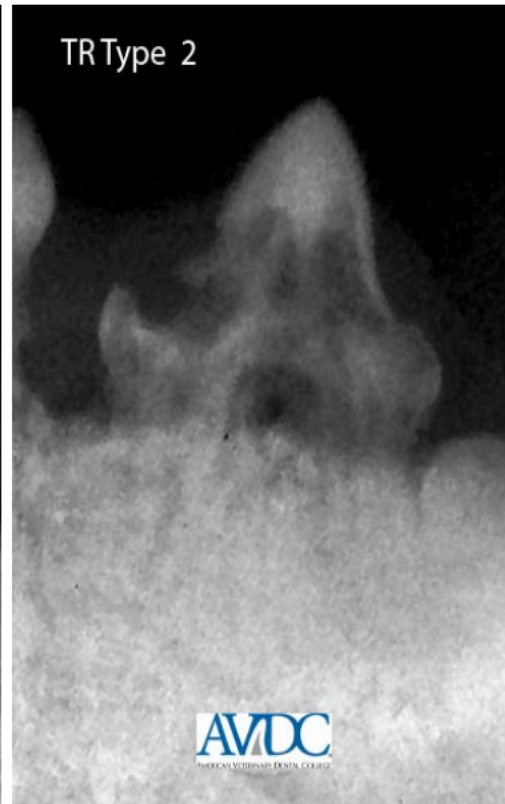


Stage 5 (TR 5):
Remnants of dental hard tissue are visible only as irregular radiopacities, and gingival covering is complete.





Radiographic Examples of Types of Tooth Resorption:



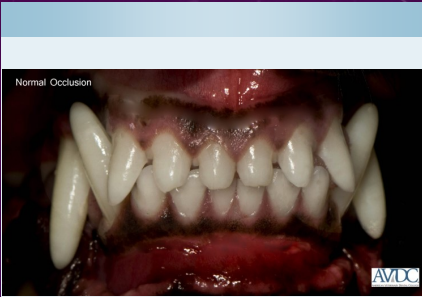
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THANK YOU 😊



HOW TO QUOTE FOR A DENTAL PROCEDURE

- Hard to predict but clients need something
- Cleaning, Xrays and Assessment are predictable
- Extractions:
 - Average time for a given tooth
 - Maximum of 2 hours dental surgery time
 - Expectations that time for a specific tooth is variable
 - New problems can be found



Normal Gums and Teeth



Tooth Fractures: When a tooth is broken, the dentin alone or both the dentin and the pulp cavity are exposed and are vulnerable to infection.



Periodontal Disease: Gum recession below the branching of the roots or a loose tooth



Dental Vet Mobile

Dental Services at your Hospital

Thomas Mulder DVM
25 Wingrove Woods
Brantford ON N3T 0M1
519-755-4595
info@dentalvetmobile.ca
www.dentalvetmobile.ca

Dr. Thomas Mulder



Dr. Mulder is a "dental enthusiast" whose 30 years experience in private practice has given him a keen interest in veterinary dentistry. This experience and ongoing continuing education has equipped him with the knowledge base and competency to assess potential extractions and to perform a wide range of dental surgery.

Instead of having you and your pet travel to a distant location for procedures, Dr. Mulder will perform the necessary dental surgery here at the Main Street Veterinary Services. To book your dog's dental call:

519-203-2000



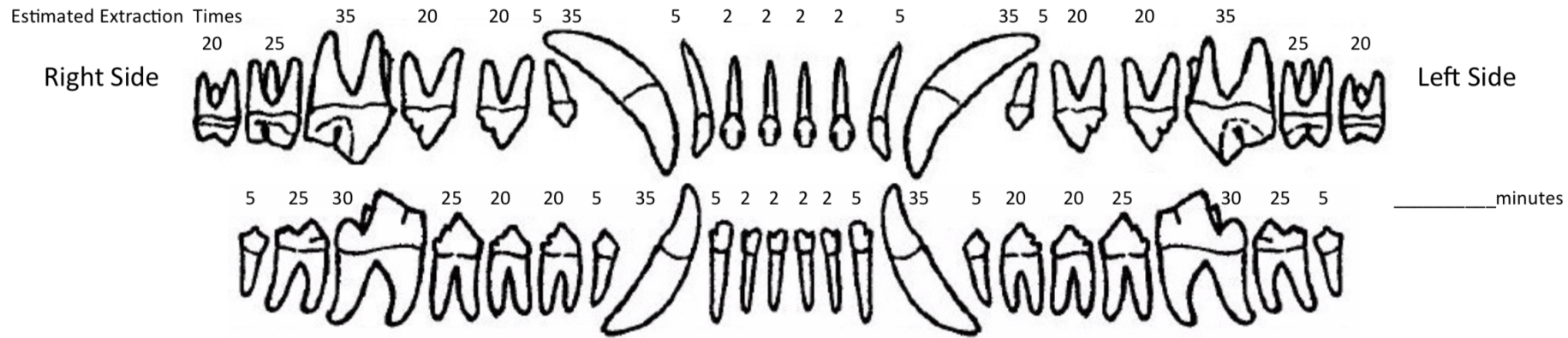
Main Street Veterinary Services

Your Dog's Dental Health Worksheet

Every dental procedure involves a sequence of steps. We have prepared this worksheet to help you understand what to expect.

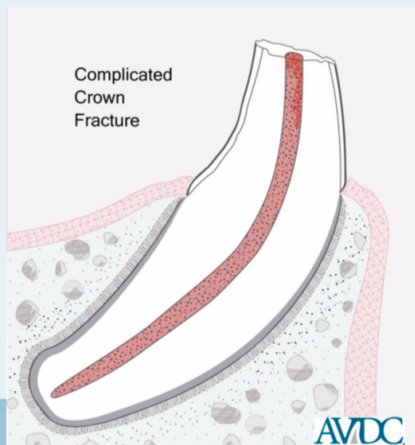
The first step is an accurate assessment of your dog's mouth which requires anaesthesia, thorough dental cleaning and x-rays.

Depending on the health of your dog's mouth, we may need to move on to extractions of any damaged teeth.



Dental Cleaning and Assessment Costs:

Anesthetic for cleaning and x-rays (includes IV fluids, sedation and everything required to get your dog safely under anesthetic).....	\$326.00
X-rays (of all teeth).....	\$175.00
Teeth Scaling and Polishing.....	\$155.00
Hospitalization.....	\$65.00
Total Costs for Anesthesia, Dental Cleaning, Polishing, X-rays and Assessment	\$721.00*



*Preoperative Lab Testing is required prior to dental surgery due to the length of the procedure.

In the event that we find broken or damaged teeth, extractions will be necessary. This will require nerve blocks to be placed (freezing) in order to provide maximum pain control and safer anesthetic. Post surgical antibiotics and pain medication may also be required.

*The duration of dental surgery for extractions varies widely depending on infection, tooth fragility, crowding and other factors. Estimated extraction times, as seen above, represent the average time required per tooth. By identifying affected teeth now, we can estimate the anticipated costs. Final costs will be based on the **actual** time of the dental surgery performed. To reduce the risks of extended anesthesia, dental surgery will rarely exceed two hours.*

While every effort has been made to provide you with an accurate estimate, we will contact you during the procedure if there are any significant changes to the treatment plan. Please make sure we have a phone number where we can reach you during the surgery.

Extraction Costs:

Nerve Block.....	\$59.00
Pain control and Antibiotics.....	\$100.00**
Estimated Extraction Cost	
_____minutes @ \$8.40 per minute.....	
Anesthetic Maintenance and Monitoring of your pet during extractions	
_____minutes @ \$4.40 per minute.....	
Total Estimated Cost for Extractions and Ongoing Anesthesia	
Maximum Extraction Cost (based on two hours of dental surgery and anesthetic) would be	\$1695.00



** variable based on patient weight

- Use worksheet to identify affected teeth
- Total the times from each tooth
- Use total time to calculate costs of extraction surgery and anesthesia
- Add this to the cleaning and assessment cost
- Discuss that this is an anticipated cost, new problems or complications can arise
- Worst case is based on 2 hour surgery time