LEARN VETERINARY DENTISTRY

Dental charting and instruments

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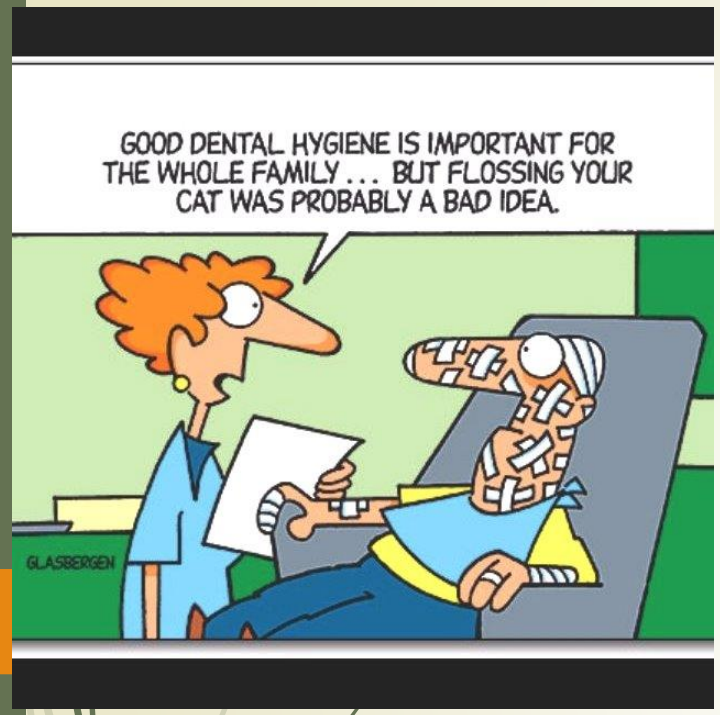
LVT, VTS (Dentistry)

What is a COHAT?

- A COHAT is a Complete Oral Health Assessment and Treatment
  - A COHAT includes
    - ✓ Assessing medical records/history
    - ✓ Detailed pre-op exam
    - ✓ Reviewing bloodwork
    - ✓ Anesthesia (this will include pre-medication, IV catheter, IV fluids, and all appropriate monitoring equipment, and a dedicated anesthesiologist or anesthetist)
    - ✓ cleaning and polishing the patient's teeth (supragingival and subgingival)
    - ✓ Intra-oral examination by the veterinarian
    - ✓ Dental radiographs/CT images examined by the veterinarian
    - ✓ Treatment plan
    - ✓ Discharge and home care

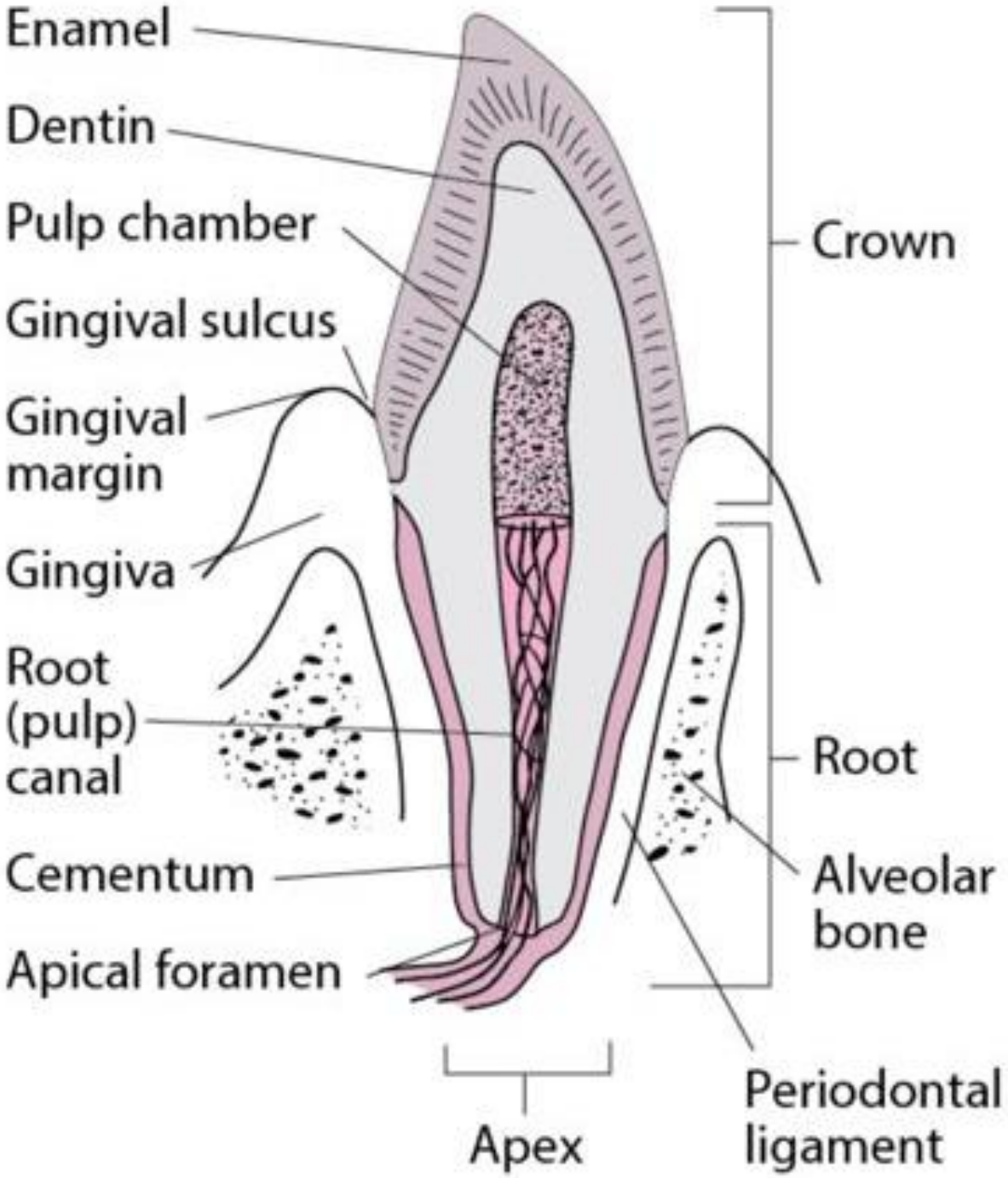


Technician Role in a COHAT

- Intake of the patient including estimate and getting BW
- The technician commonly cleans the patient's teeth, using both an ultrasonic scaler and/or hand scalers and curettes. Followed by polishing the tooth surfaces with an appropriate polishing paste/flower pumice.
- The technician takes diagnostic full mouth radiograph for the veterinarian to assess (or CBCT)
- The technician charts the patient's mouth using the correct abbreviations for the doctor to create a treatment plan.
- The technician commonly discharges the patient.

Skull Types

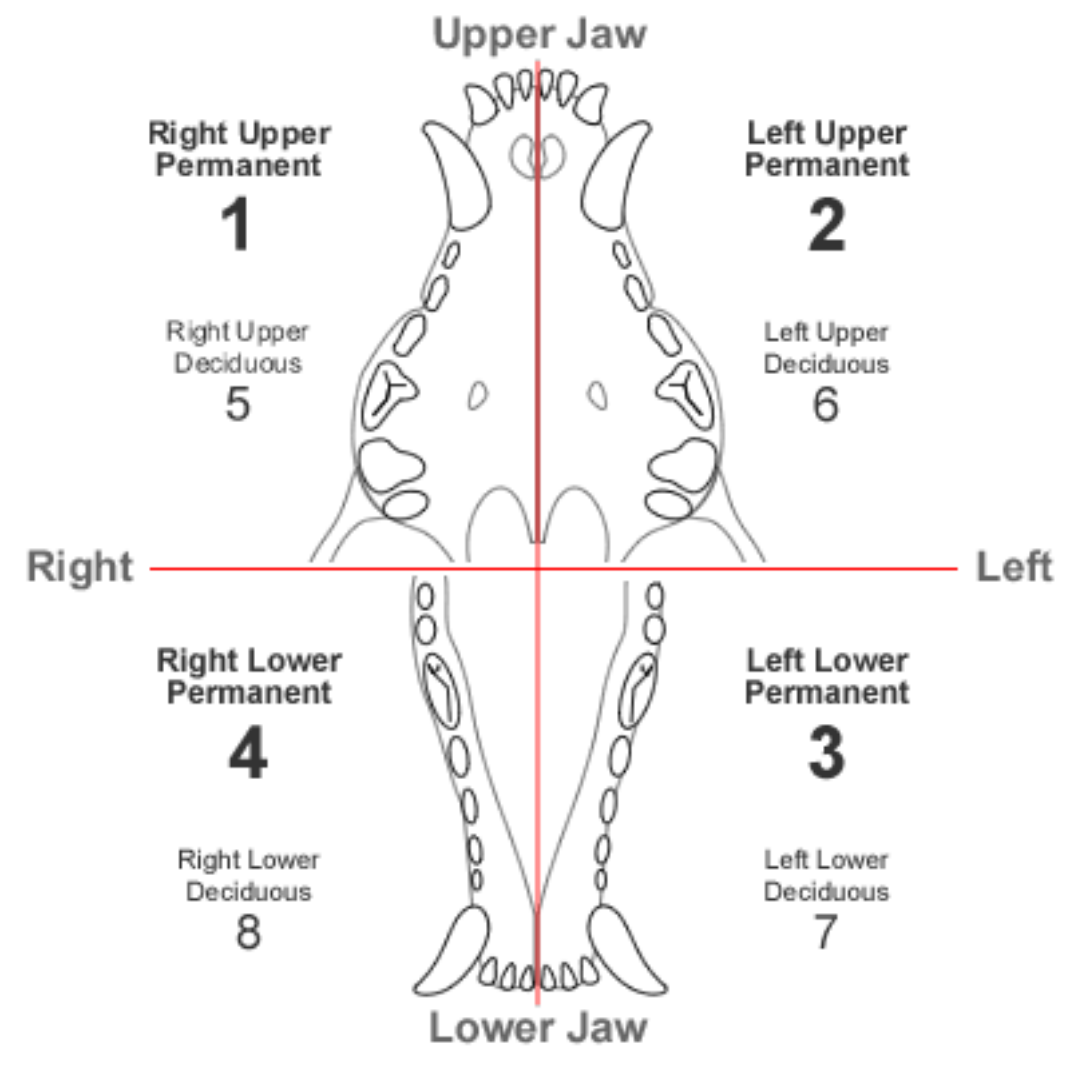
- Three skull types
  - Mesocephalic
    - ✓ Means medium, most common head type
    - ✓ Example- Golden retriever, Lab, DSH
  - Brachycephalic
    - ✓ Means short, short wide heads
    - ✓ Commonly see things like rotated/crowded teeth. Could lead to periodontal disease
    - ✓ Example- Boxers, pugs, bulldogs, and Persian cats
  - Dolichocephalic
    - ✓ Means long, long narrow heads
    - ✓ Example- Collies, greyhounds, borzois ad Siamese cats



Tooth Anatomy

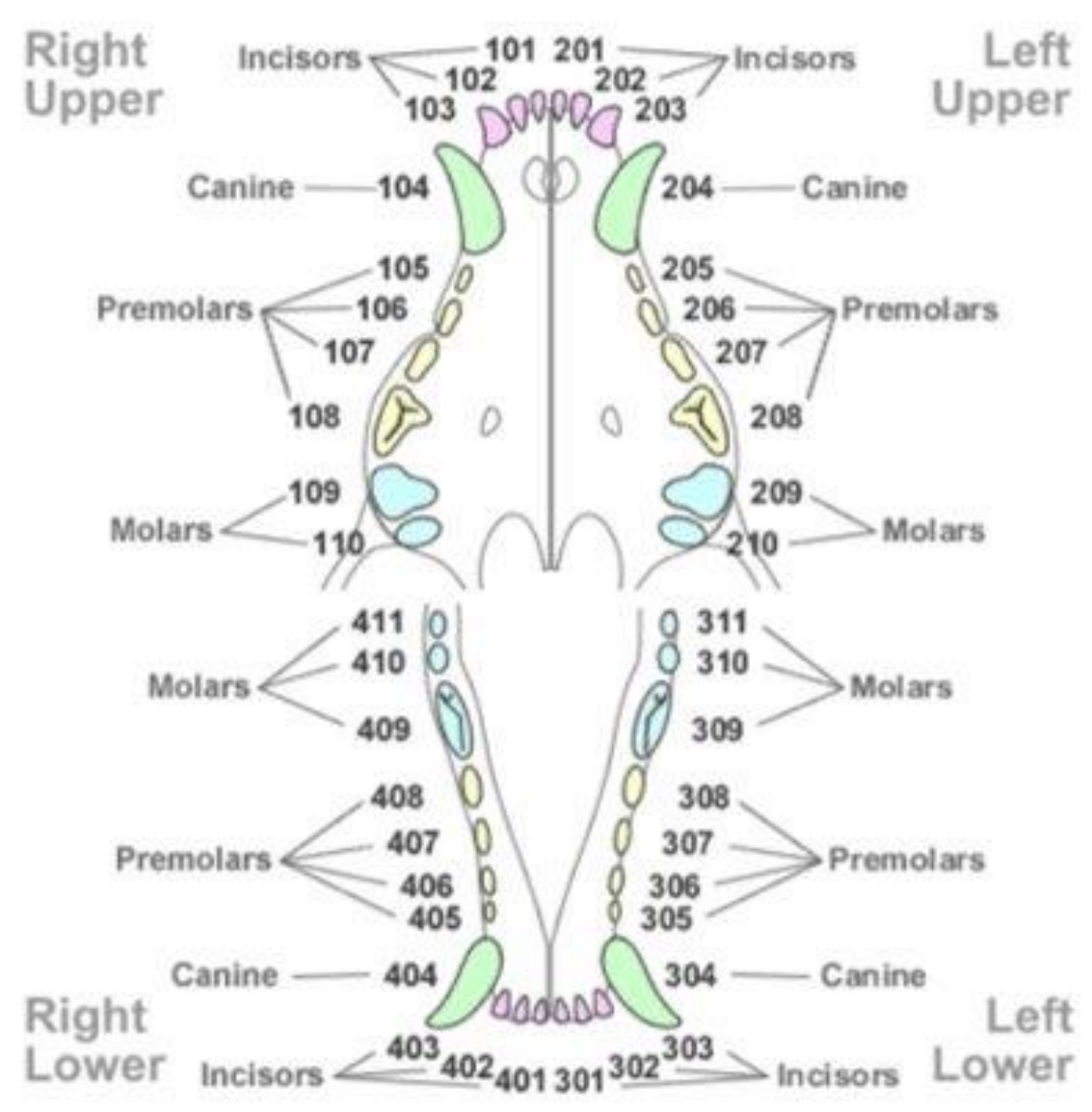
All teeth in the mouth have the same anatomy, no matter what the function of the tooth is or the shape of the tooth.

Triadan System

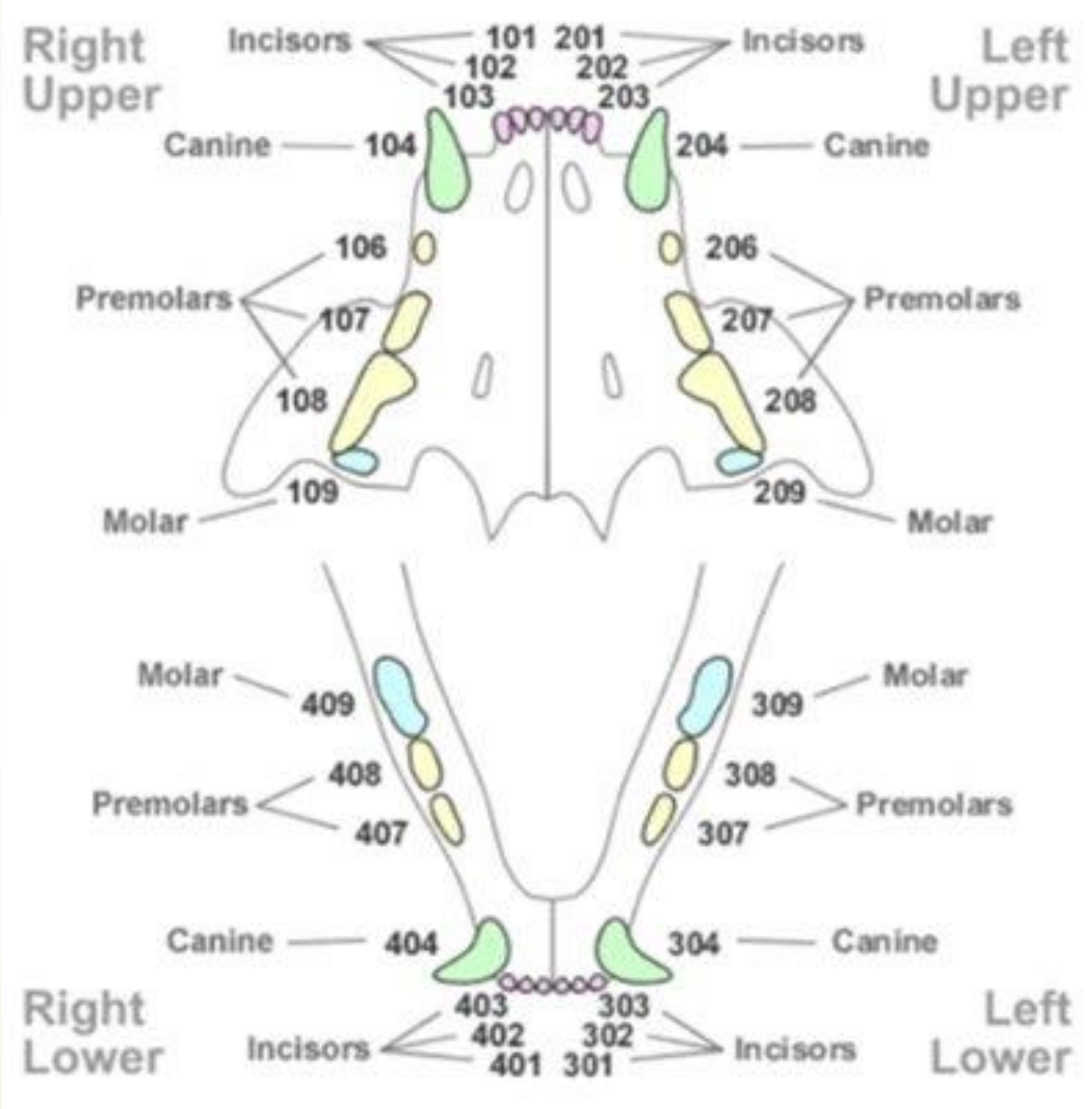


- The Triadan system to count teeth in our patient's
  - Maxillary right =1 (5 for primary teeth)
  - Maxilly left = 2 (6)
  - Mandibular left = 3 (7)
  - Mandibular right = 4 (8)
    - ✓ Second and third numbers follow sequentially with incisors = 01, 02, 03, Canines = 04, premolars = 05, 06, 07, 08, Molars = 09, 10, 11.
    - ✓ Cats are normally missing maxillary first premolars and mandibular first and second premolars. The numbering system remains intact and skips the missing teeth.
      - Tip- The canines are always number 04 and the fourth premolar is always 08.

Canine



Feline



Periodontal Exam

- ✓ Calculus index (CI 0-3)
  - ❑ CI0=No visible calculus
  - ❑ CI1=Calculus cover less than 1/3 of the tooth surface
  - ❑ CI2=Calculus covers between 1/3 and 2/3 of the tooth surface with minimal subgingival involvement
  - ❑ CI3=Calculus covers more than 2/3 of the tooth surface with significant subgingival involvement

- ✓ Gingivitis index (GI 0-3)
  - ❑ GI0=No gingival inflammation
  - ❑ GI1=Some inflammation but no bleeding during probing
  - ❑ GI2=Moderate Inflammation and bleeding during probing
  - ❑ GI3=Severe inflammation and spontaneous bleeding

Pop Quiz!

Calculus Index?

Gingivitis index?

Periodontal disease

Loss of the supporting structures of the teeth

Classification	Stage	Abbreviation	Gum Health	Radiographic Changes
Normal	Stage 0	PD0	No gingivitis	Alveolar height and architecture have no change
Gingivitis	Stage I	PD1	Mild Gingivitis	Alveolar height and architecture have no change
Early Periodontitis	Stage II	PD2	Gingivitis, bleeding gums on probing, 25% attachment loss or F1 involvement	<25% loss of periodontal attachment
Moderate Periodontitis	Stage III	PD3	Gingivitis, bleeding gums on probing, 25%-50% attachment loss or F2 involvement, M1 possible	10%-30% bone loss
Advanced Periodontitis	Stage IV	PD4	Gingivitis, bleeding gums on probing, >50% attachment loss or F3 involvement, M2-M3 mobility	>30% bone loss

Periodontal Pocket

- Check for periodontal pockets on every tooth
  - Each tooth should be checked in 4-6 spots by gently walking the probe around the tooth
  - Normal sulcus depth
    - ✓ Dog 0-3mm
    - ✓ Cat 0-1mm

Furcation Exposure

- Furcation exposure is a result of periodontal disease that causes gingival recession and bone loss around the affected tooth.
  - Furcation exposure 1=F1
    - ✓ Periodontal probe extends less than ½ way under the crown between the roots on a multirooted tooth
  - Furcation exposure 2= F2
    - ✓ Periodontal probe extends more than ½ way under the crown between the roots, but not all the way through on a multirooted tooth
  - Furcation exposure 3= F3
    - ✓ Periodontal probe extends all the way between the two roots on a multirooted tooth.

Tooth Mobility

M0 = Normal physiological movement up to 0.2mm

M1 = Increased movement in any direction (other than axial) of 0.2mm up to 0.5mm

M2 = Increased movement of 0.5mm and up to 1mm (other than axial)

M3 = Increased movement any direction of more than 1mm

Normal Occlusion

Perfect alignment or interdigitation between the upper and lower teeth when the mouth is closed

Class I Malocclusion (MAL/1)

- Mal/1 is described as a normal relationship between the maxilla and mandible but with one or more teeth out of alignment.
- Example-
  - ✓ Base-narrow canines (linguoversion of the lower canines)
  - ✓ Lance teeth
  - ✓ Rostral or caudal crossbite

Base-narrow canines

Lance canine

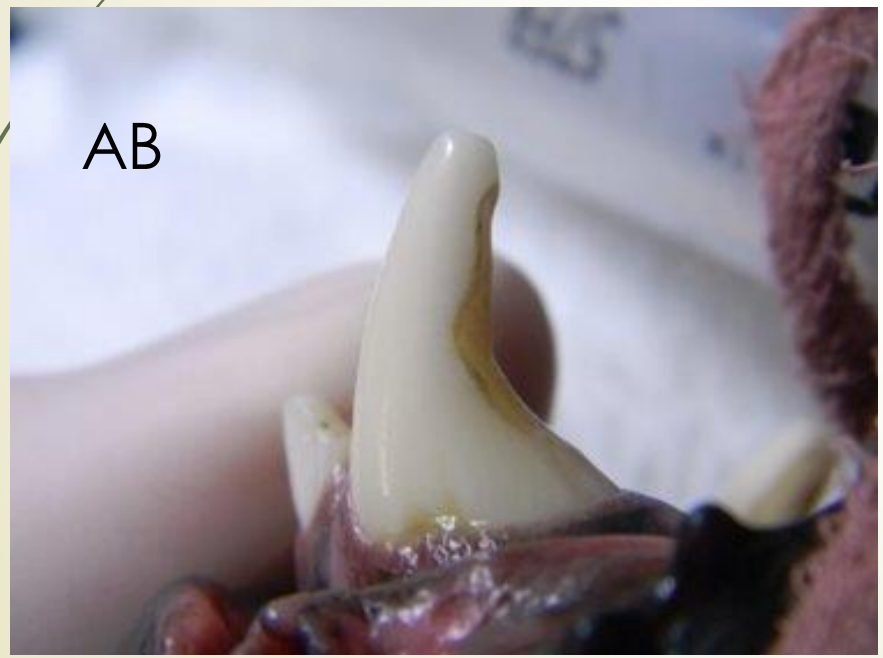
Rostral crossbite

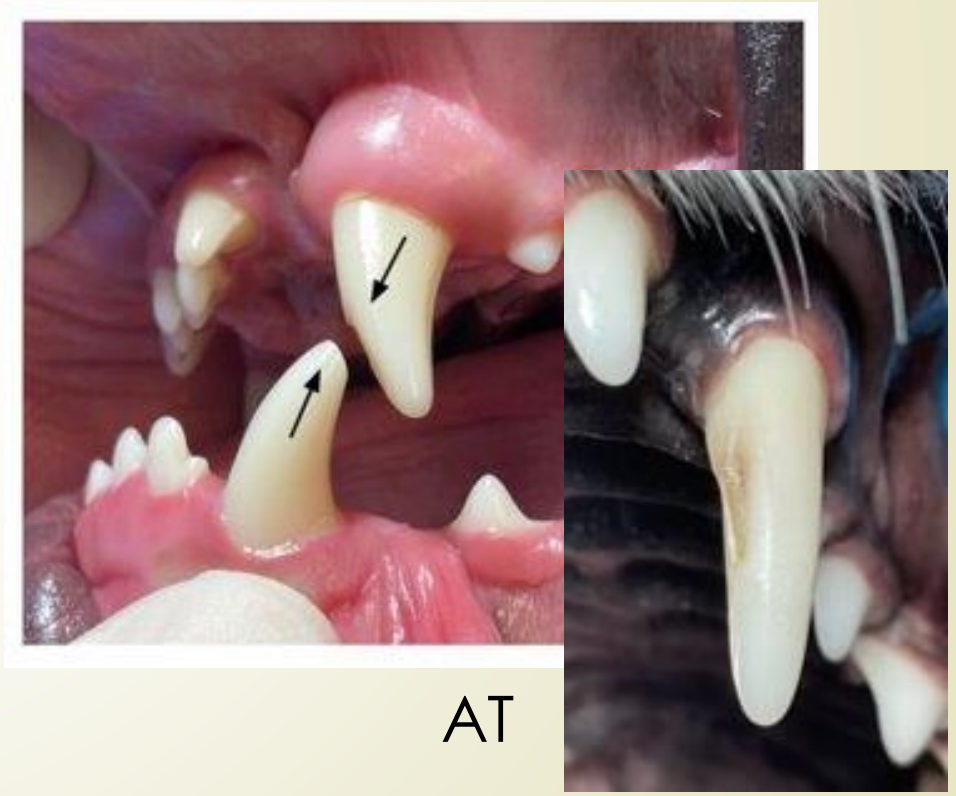
- Class II Malocclusion (MAL/2)
  - Mandible shorter than average
    - ✓ Overbite/overjet
    - ✓ Brachygnathism

- Class III Malocclusion (MAL/3)
  - The mandible is longer than normal
    - ✓ Reverse scissor bite
    - ✓ Prognathism
    - ✓ Underbite

Abrasion vs Attrition

- Both are wear occurring on the tooth
  - Abrasion=AB
    - ✓ Resulting from an external source
      - Ball, Frisbee, chewing on skin, chewing kennel bars
  - Attrition=AT
    - ✓ Resulting from tooth-on-tooth wear



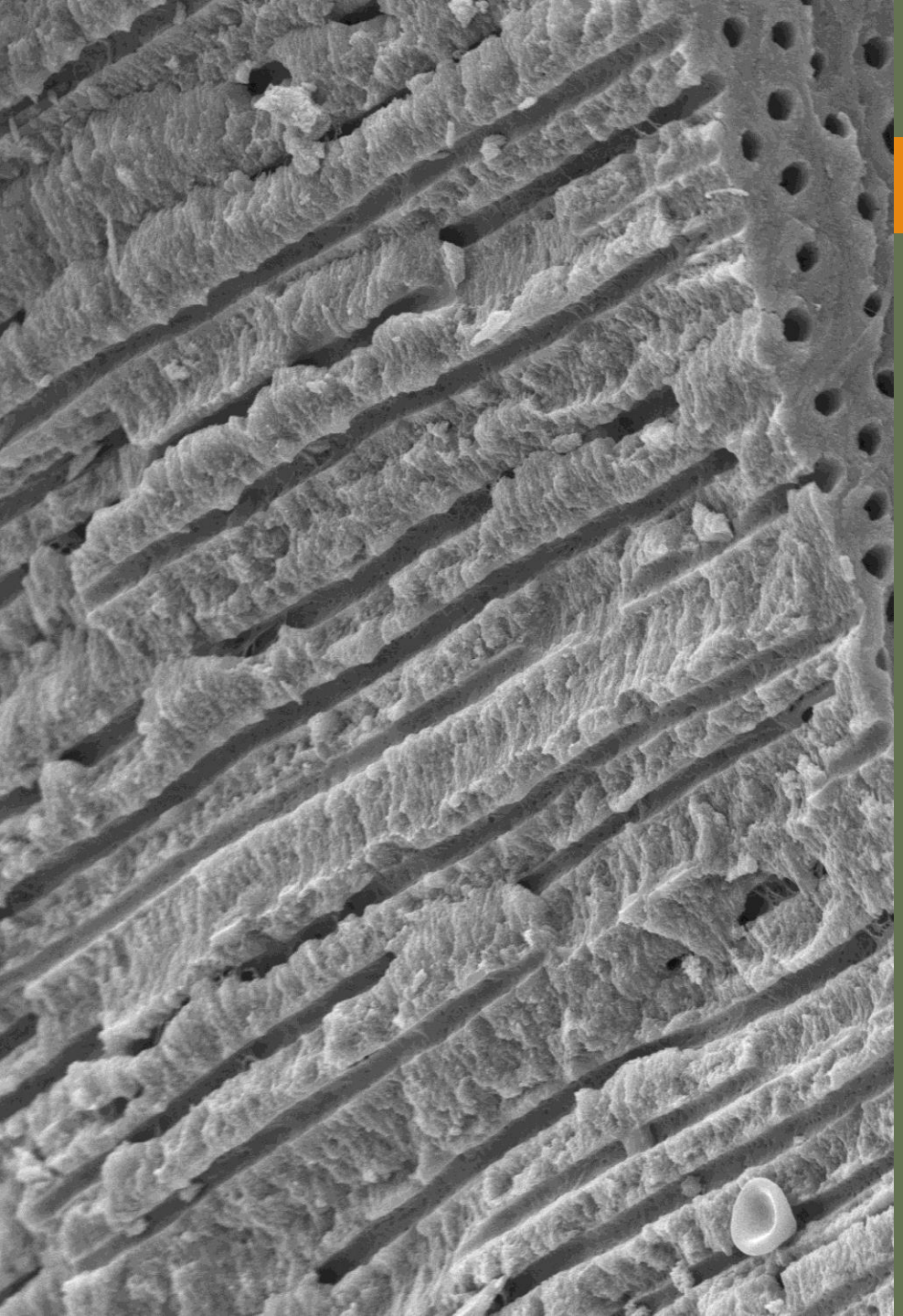


Fractured Teeth

- There are several different types of fractured teeth.
- These will all start with T/FX (tooth fracture)
  - Enamel fracture (EF): a fracture confined only to the enamel
  - Uncomplicated crown fracture (UCF): a fracture into the dentin that does not expose the pulp
  - Uncomplicated crown-root fracture (UCRF): a fracture of both the crown and root with no pulp exposure

T/FX/UCF

T/FX/UCRF



Why does Dentin exposure hurt?
Hydrodynamic theory

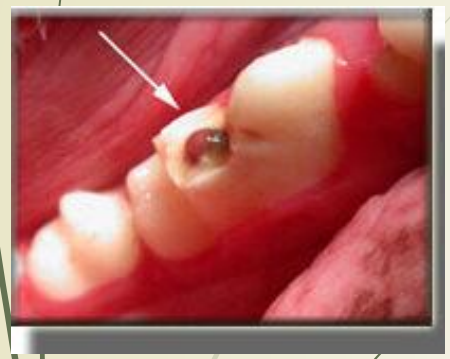
- There is more than one theory that causes dentin exposure to be painful. The most common theory I have researched is when stimulated by cold or acidic food, there is an increase in fluid flow through the dentinal tubules. The shifts in fluid trigger nerves and this triggers the acute, temporary pain of dentine hypersensitivity.

T/FX/CCF

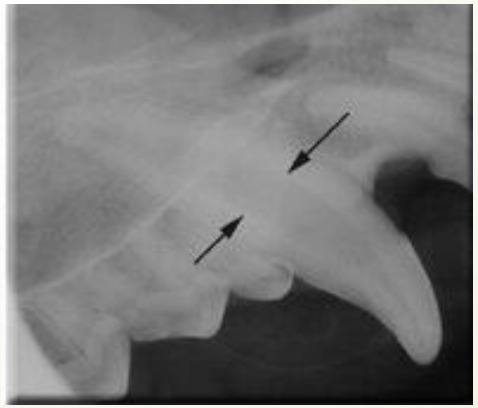
Fractured Teeth Continued

- Complicated crown fracture (CCF): a crown fracture that exposes the pulp
  - Two most common treatments are root canal or extraction
- Complicated crown-root fracture (CCRF): A fracture of both the crown and the root that has pulp exposure
- Root fracture (RF): a fracture of the root

Root canal Therapy

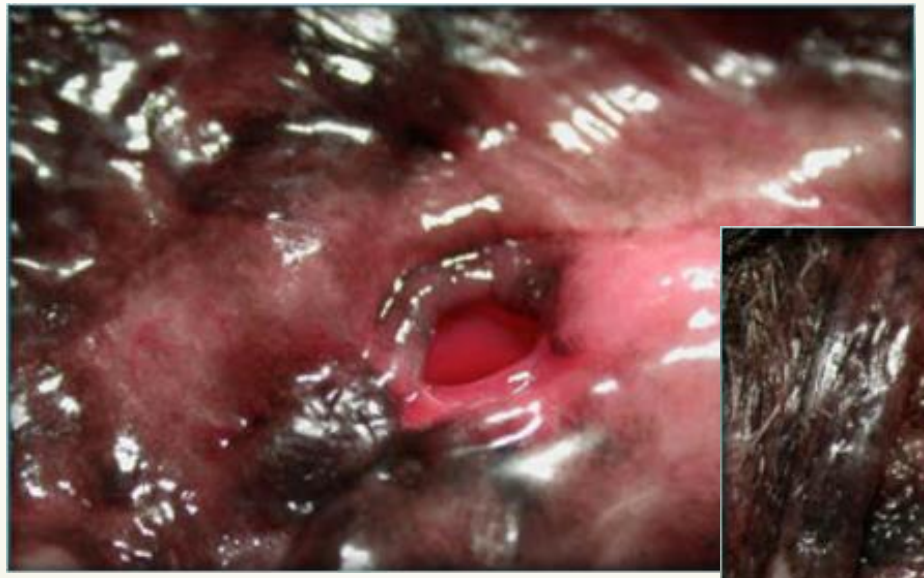


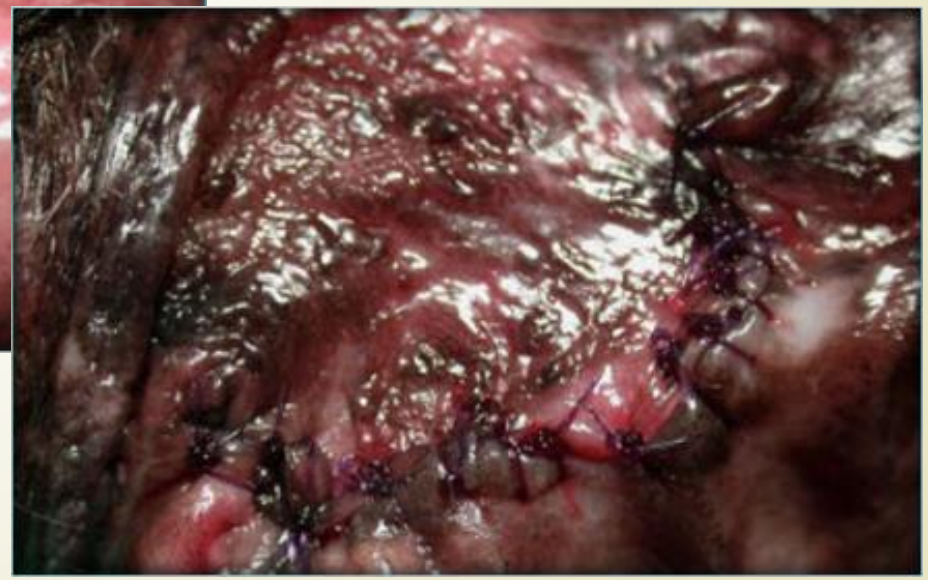
- **Pros to root canal therapy over extraction**
  - Maintain jaw integrity
  - Maintain use of this tooth
  - If it is a chewing tooth keeping it will mechanically help clean the occluding tooth
  - Less painful recovery
  - Less invasive
  - The recovery is much faster (like 0 days instead of up to 30)
  - No soft food



Oral Nasal Fistula

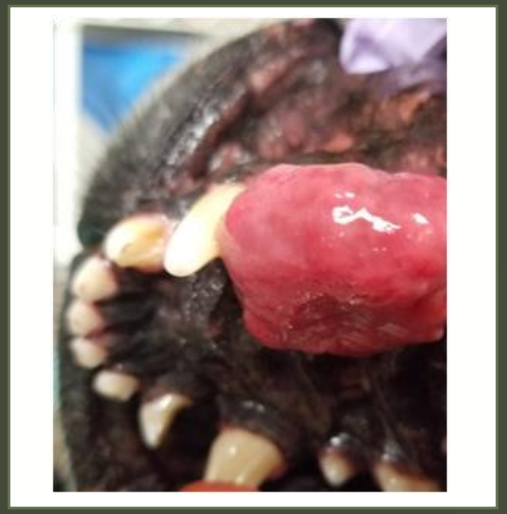
- Oral nasal fistula (ONF): a defect on the palatal side of the maxillary canine tooth usually caused by advanced periodontal disease breaking down the plate of bone between the canine and nasal cavity.

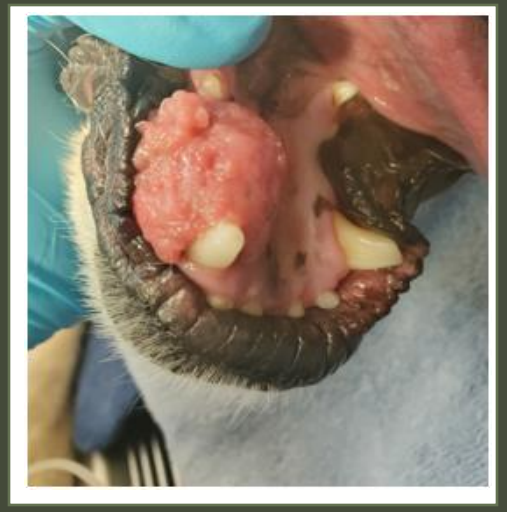




- Oral mass (OM): OM is used to describe an oral mass before it has been sent out for histopathology
  - See abbreviation list for after a diagnosis is made

S/X (partial maxillectomy)





S/M (partial mandibulectomy)

Mandibulectomy or Maxillectomy

- Partial or complete removal of a mandible (mandibulectomy)
- Removal of a portion of the maxilla (maxillectomy)

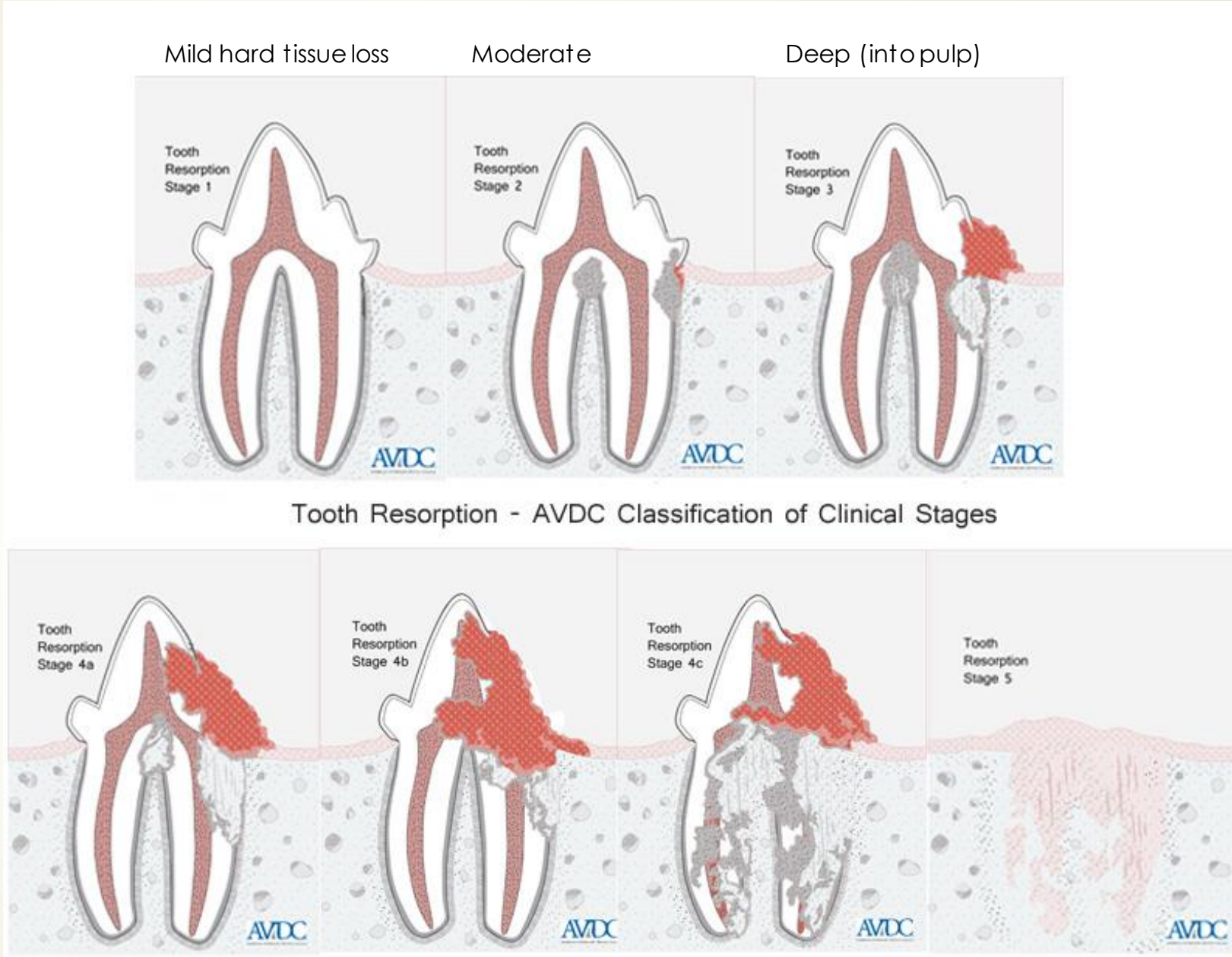
- Gingival Enlargement (GE): Gingival enlargement is used when there is not a histologic diagnosis.
- After Histologic diagnosis this was determined to be Gingival Hyperplasia (GH)
  - What breeds do we often see this in?
  - Why can this be a problem?

Gingival hyperplasia (GH)

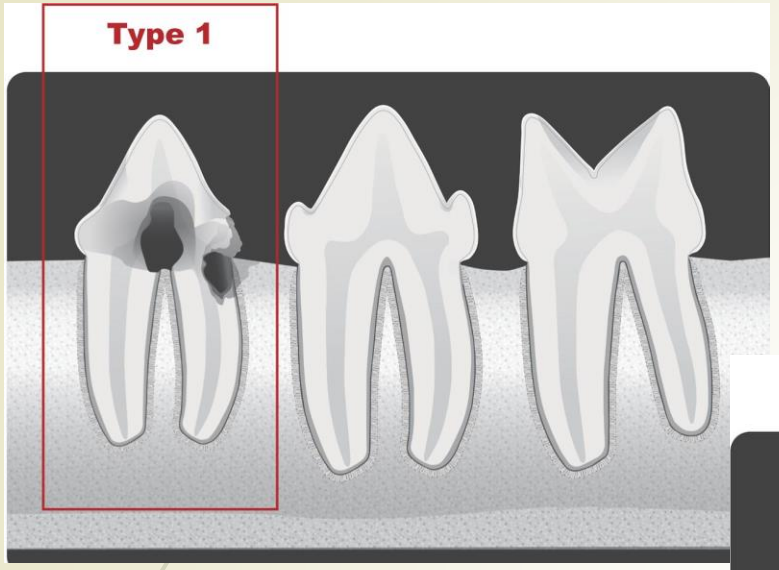
- Overgrowth or enlargement of the gingival tissue
  - This can cause "pseudo pockets" which trap debris and calculus causing periodontal disease
  - Contour the gingiva back to the appropriate shape and size.
  - This is called gingivectomy or gingivoplasty (GV)

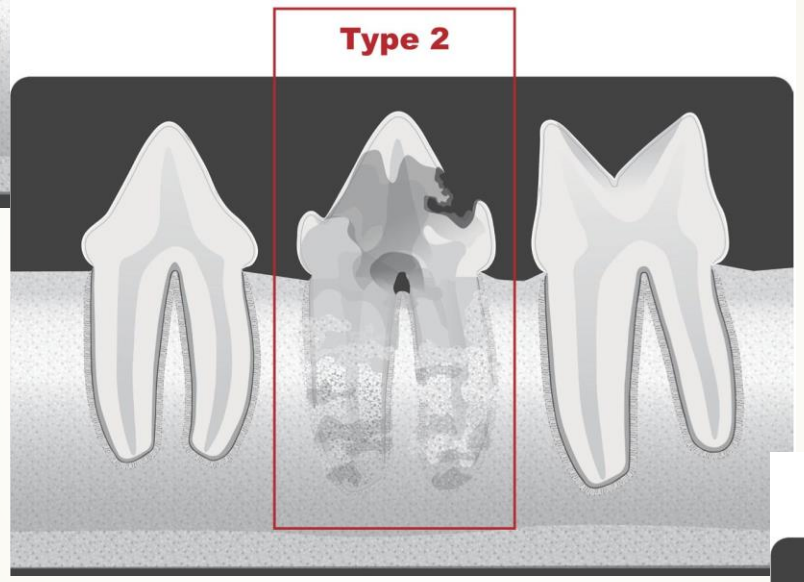
- Retained tooth root (RTR): a retained root can be present because of trauma or a tooth that fractured during extraction
  - **Always take post operative radiographs!**

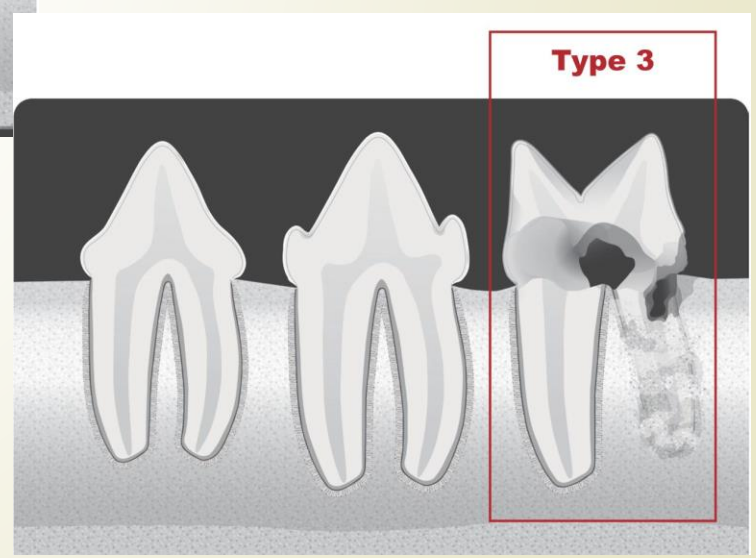
Tooth Resorption Stages



Tooth Resorption Types







What is the best dental chart?

- The best dental chart is the one that has room for both the diagnosis and treatment plus any other notes that are indicated!
- Examples of dental charts (Next page)

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CANINE DENTAL FORM

Owner:_____ Pet Name:_____ ____ Date:__/__/__

DOB:__/__/__ Sex: M NM Fe SF Species:_____ Breed:_____

Chief Complaint:_____

Past Dental History:_____ Last Prophy __/__/__

Pertinent Medical History:_____

Diet:_____ Chew Toys: _____

Home Dental Care: Brush_____ Rinse_____ Meds_____ ____Other_____

Other:_____

MEDICAL ALERT

INITIAL EXAM

SKULL TYPE

Brachycephalic
Mesocephalic
Dolichocephalic
Other: _____

OCCLUSION

Normal Scissors

Class I:
PM Shift
Anterior Crossbite
Posterior Crossbite
Rostrally deviated Max. Canine
Base narrow lower canines

Class II: (Brachygnathic/Over)

Class III: (Prognathic/Under)
Level/ reverse scissor/underbite

Other:
Wry
Occlusal wear: I C P M

DENTAL ABNORMALITIES

Rx. Deciduous _____
Missing_____
Supernumerary_____
Caries_____
Broken_____
Discolored_____
Gingival recession_____
Gingival hyperplasia_____
Tooth mobility_____
Furcation exposure_____
Other_____

INDEXES

Overall calculus index (CI):
(0) None
(I) Supragingival w/ sl. subging.
(II) Moderate subgingival
(III) Abundant supra and/or Subging.

Overall Gingivitis Index (GI):
(0) None
(I) mild/ no bleeding
(II) moderate/ bleeding on probing
(III) severe/ spontaneous bleeding

MISC.

Oral Enlargements_____
Pharynx_____
TMJ_____
Other_____

PRE-ANESTHETIC EXAM

Auscultation_____ MM/CRT_____
Weight (Kg)_____

ANESTHESIA

~~Agent~~ ~~Dose (mg) / route~~ ~~Time~~

PA _____

Induc. _____

Maint. _____

E.T. tube size: _____ Time Finished: _____
Pulse Ox Reading _____ Doppler Pressure: _____

MEDICATIONS

Fluids: Type / route / volume

Meds administered:

Meds dispensed:

Recommended Followup: _____

Referred by:_____ Contact #_____
Contact made on __/__/__ at _____ AM PM Spoke with_
Referral Letter sent on __/__/__ To:_____
Documentation: Rads / Digital Photos
Misc. Notes:

CANINE ORAL DIAGNOSIS, TREATMENT PLAN, AND DENTAL TREATMENT CHART

	061	060	P4	P3	P2	P1	C1	I3	I2	I1	I1	I2	I3	C1	P1	P2	P3	P4	060	061	
	110	109	108	107	106	105	104	103	102	101	201	202	203	204	205	206	207	208	209	210	
DX																					DX
RAD																					RAD
TX																					TX

RIGHT SIDE — LEFT SIDE

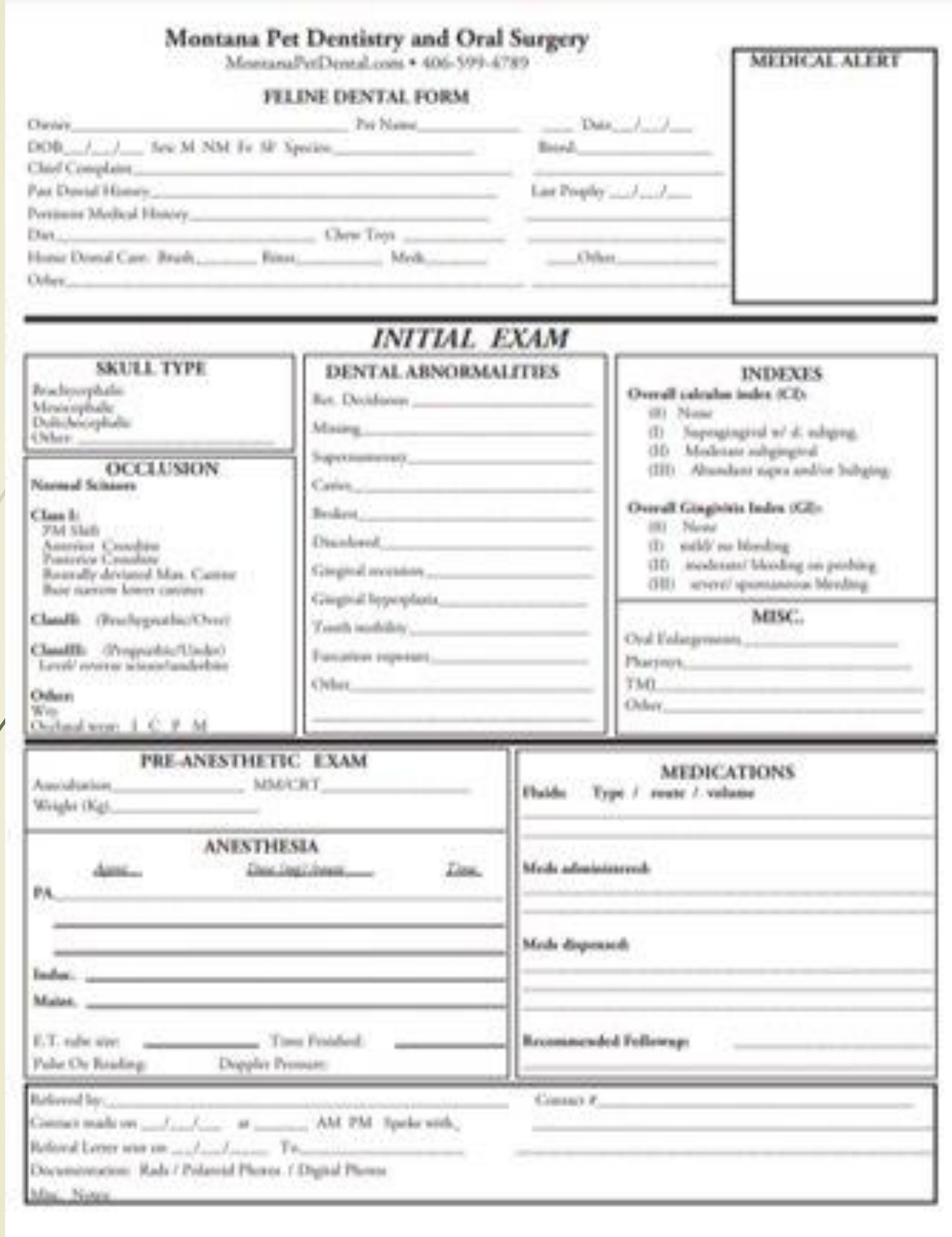
Buccal / Occlusal / Palatal / Lingual / Occlusal / Buccal

	061	062	063	P4	P3	P2	P1	C1	I3	I2	I1	I1	I2	I3	C1	P1	P2	P3	P4	063	062	061	
	411	410	409	408	407	406	405	404	403	402	401	301	302	303	304	305	306	307	308	309	310	311	
DX																							DX
RAD																							RAD
TX																							TX

General Remarks: _____

Radiographic Evaluation/Assessment: _____

Treatment Summary and Plan: _____



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FELINE DENTAL FORM

MEDICAL ALERT

Owner ______ Pet Name ______ Date __/__/__

DOB __/__/__ Sex M NM F SF Species ______ Breed ______

Chief Complaint ______

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Diet ______ Chew Toys ______

Home Dental Care: Brush ______ Rinse ______ Meds ______ Other ______

Other ______

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Gingival recession ______

Gingival hyperplasia ______

Tooth mobility ______

Furcation exposure ______

Other ______

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Weight (Kg) ______

ANESTHESIA

Agent Dose (mg)/ Route Time

PA ______

Induc. ______

Maint. ______

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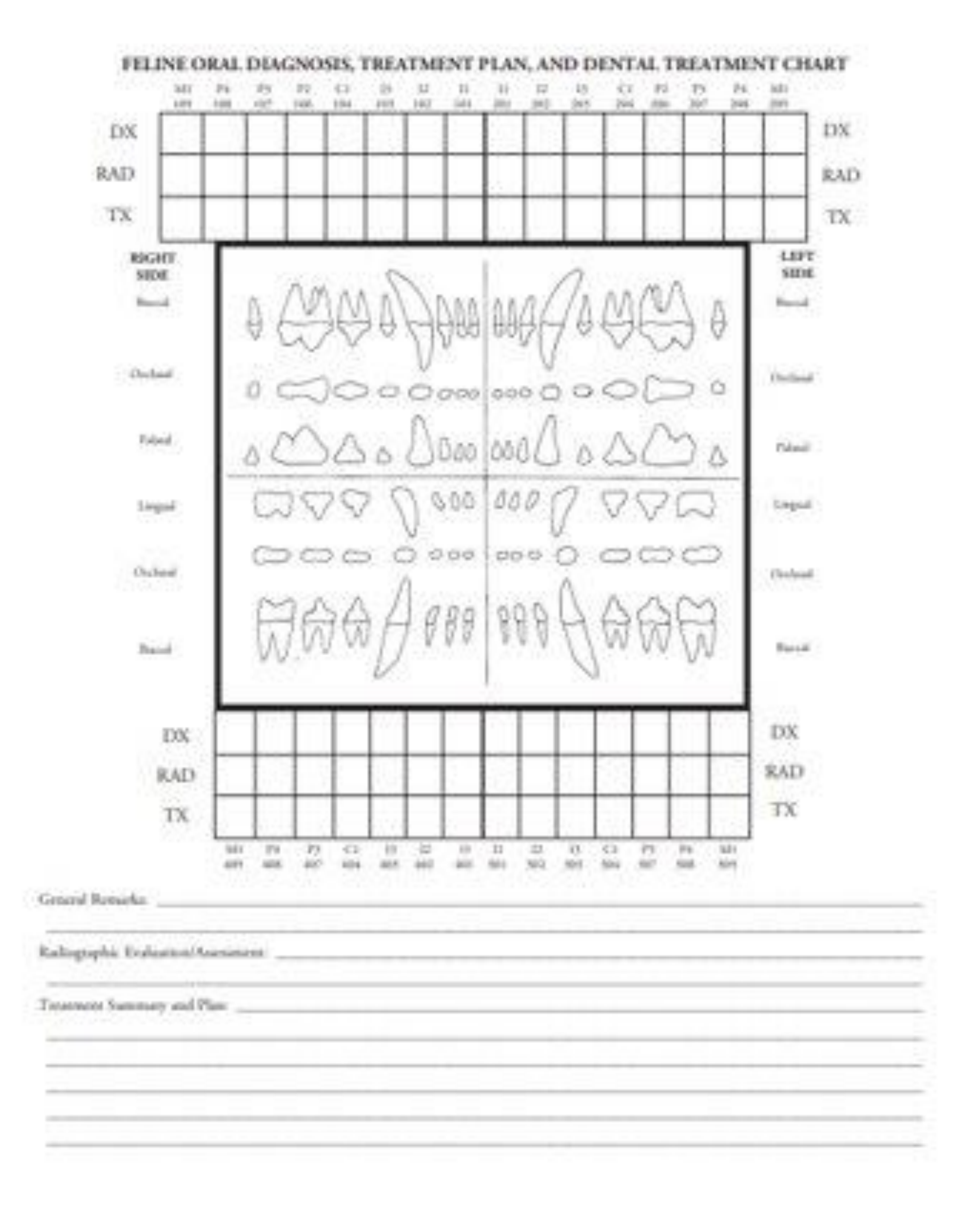
Referral Letter sent on __/__/__ To ______

Documentation: Rads / Polaroid Photos / Digital Photos

Misc. Notes



FELINE ORAL DIAGNOSIS, TREATMENT PLAN, AND DENTAL TREATMENT CHART

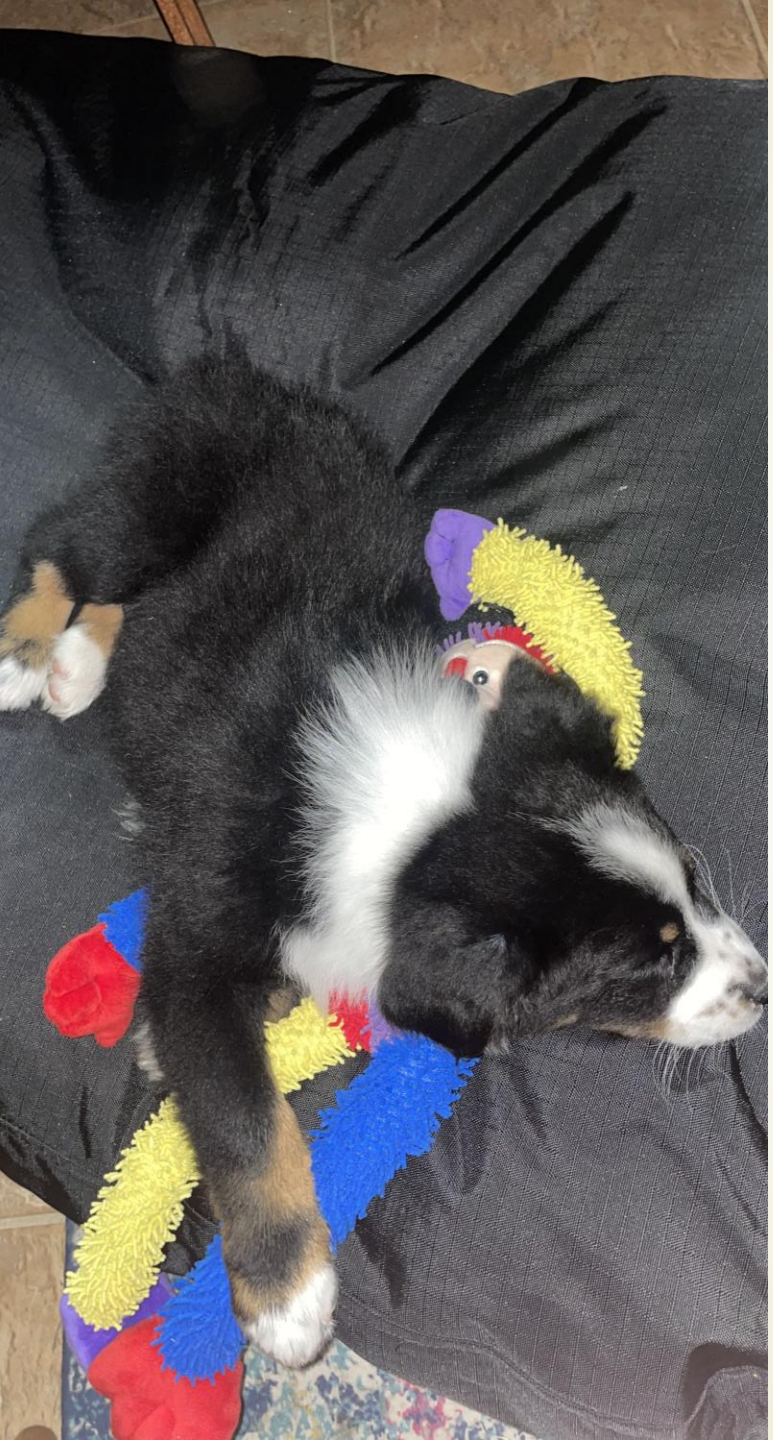
	M1 109	P4 108	P3 107	P2 106	C1 104	I3 103	I2 102	I1 101	I1 201	I2 202	I3 203	C1 204	P2 206	P3 207	P4 208	M1 209	
DX																	DX
RAD																	RAD
TX																	TX

	M1 409	P4 408	P3 407	C1 404	I3 403	I2 402	I1 401	I1 301	I2 302	I3 303	C1 304	P3 307	P4 308	M1 309	
DX															DX
RAD															RAD
TX															TX

General Remarks: ______

Radiographic Evaluation/Assessment: ______

Treatment Summary and Plan: ______



Questions?

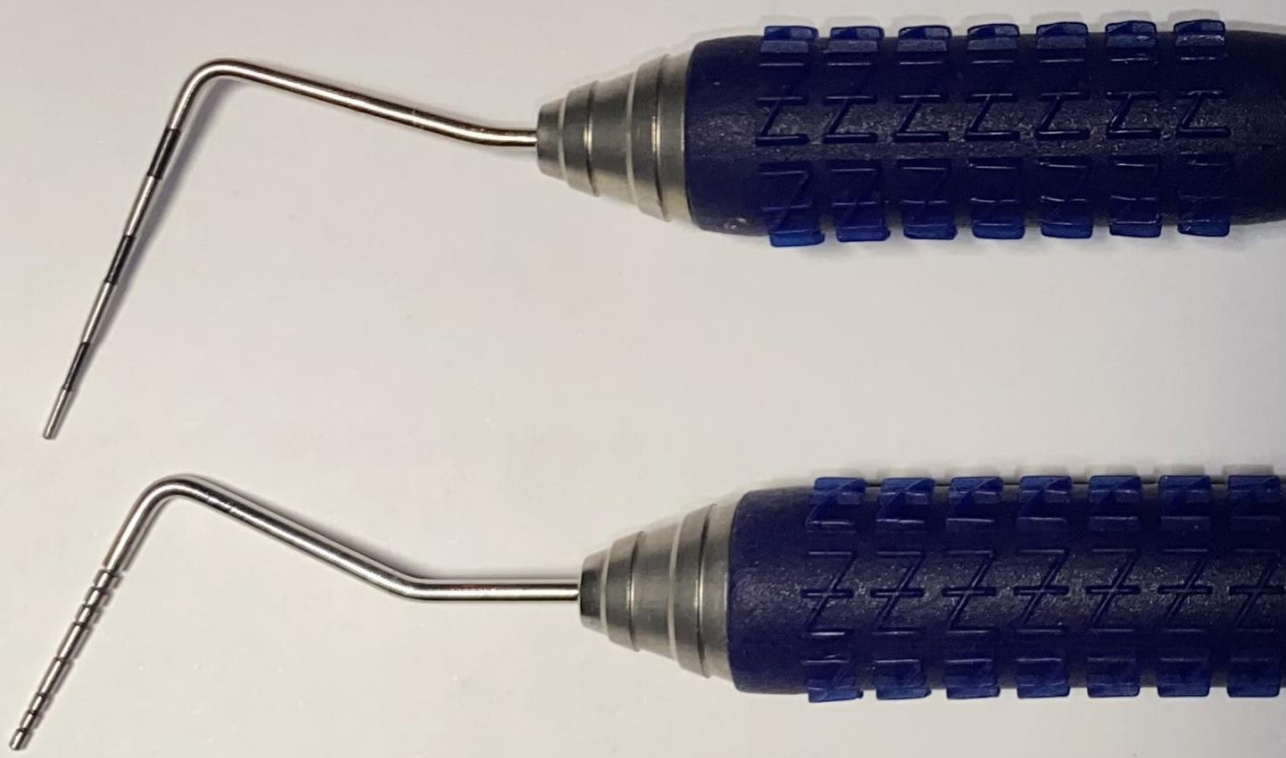
Basic Hand instruments for small animal veterinary dentistry

- A variety of hand scaling instruments are required to perform proper dental cleanings.

PERIODONTAL PROBE

It is important to know what type of probe you have so you know how to measure a periodontal pocket.

"banded periodontal probe"
Probe length is available in 18mm, and each band represents 3mm



"notched periodontal probe"
Intermediate notches at 1,2,3,(skip 4) 5 (skip 6) 7,8,9,10

Shepherd's hook explorer

This is the most common explorer. They are commonly manufactured combined with the periodontal probe.

Scalers

Scalers have three sharp sides and a sharp tip!

Use supragingivally only!

Morris 0-00

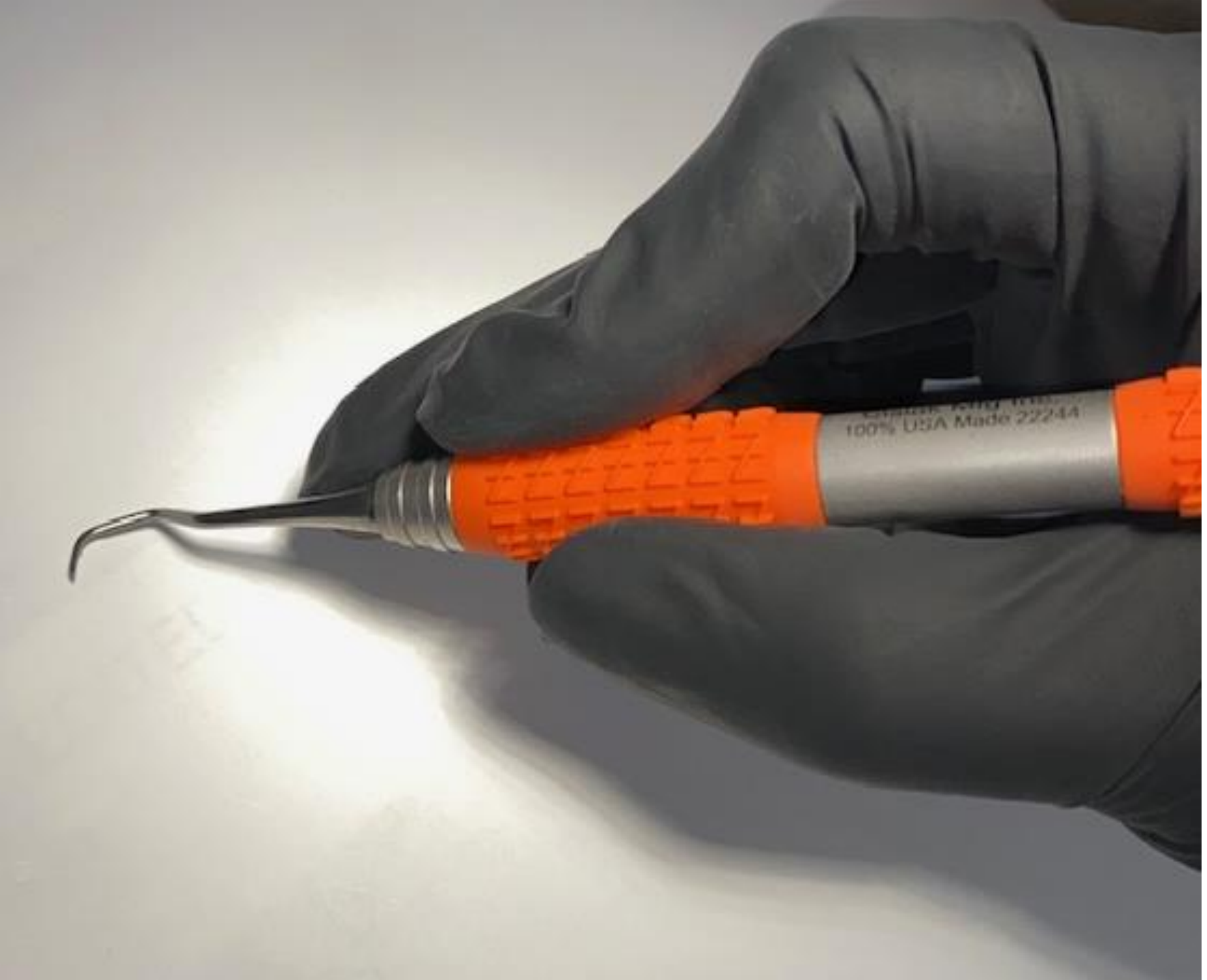
Jacquette

Sickle

Curette

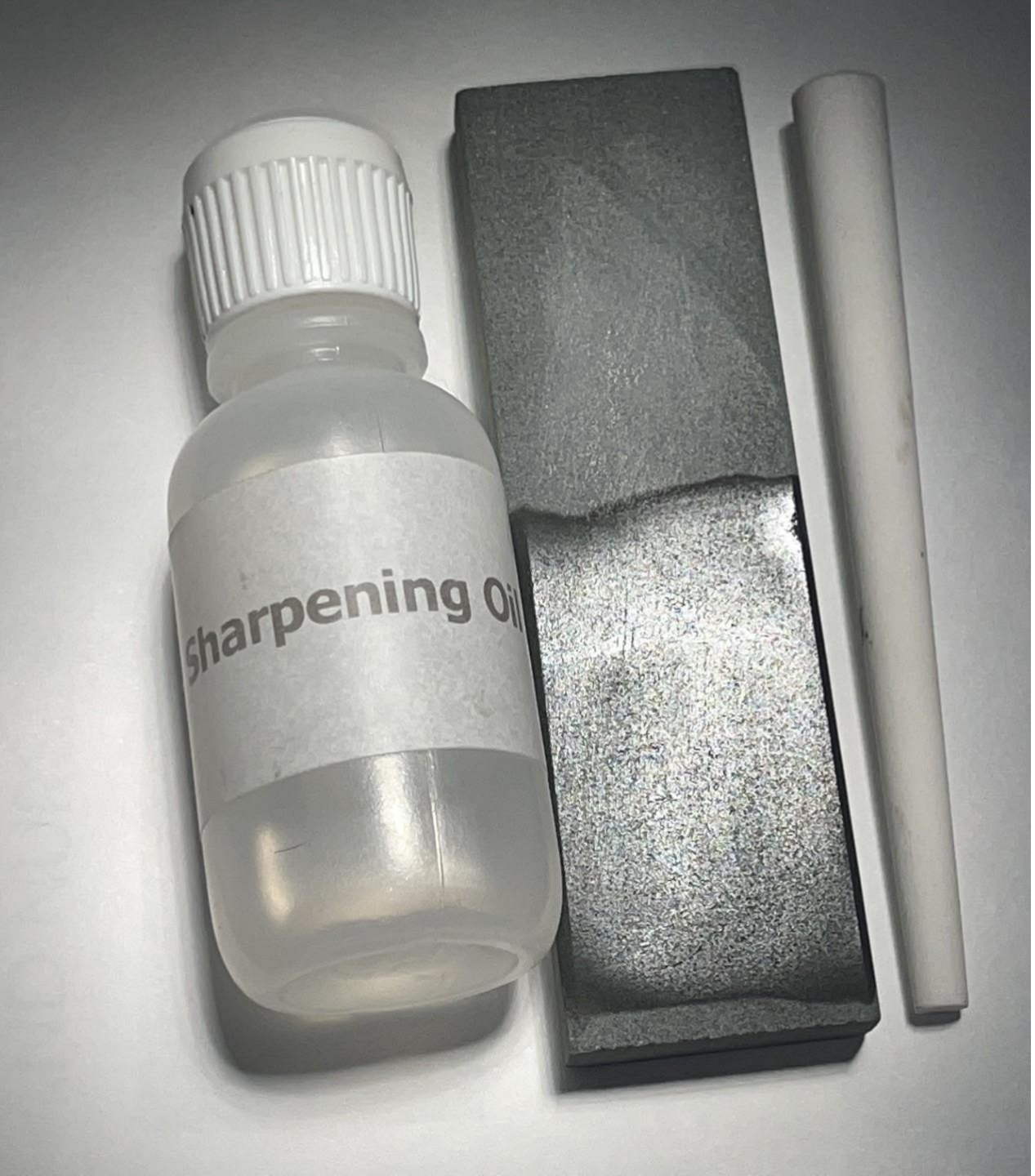
Curettes have two sharp sides and a rounded toe.

Used both supragingival and subgingival.



Modified pen grasp

This technique increases the effectiveness of the instrument and reduces hand fatigue.



What you will need to sharpen instruments

- Sharpening oil
- Arkansas stone
- Conical stone

HOW TO SHARPEN

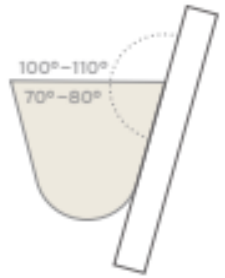
The following steps outline the "Stationary Instrument, Moving Stone" sharpening technique:

1. Stabilize the instrument.
2. Apply stone to lateral surface to form a 110° angle with the face.
3. Position the stone to contact the heel of the blade and work toward the tip.
4. Move the stone up and down with short strokes.
5. A sludge will appear on the face of the blade as it is sharpened. It can be wiped clean with sterile gauze.
6. Finish with a down stroke (to avoid a roughened edge).
7. Repeat the procedure to sharpen the opposite cutting edge of sickles and universal curettes.

ANGULATION

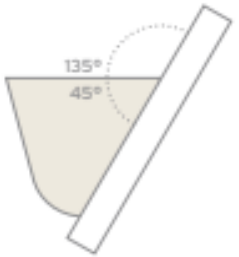
CORRECT ANGULATION

When the stone is correctly placed against the blade, the internal angle (70° to 80°) is maintained.



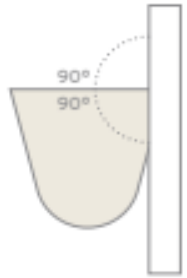
TOO MUCH ANGULATION

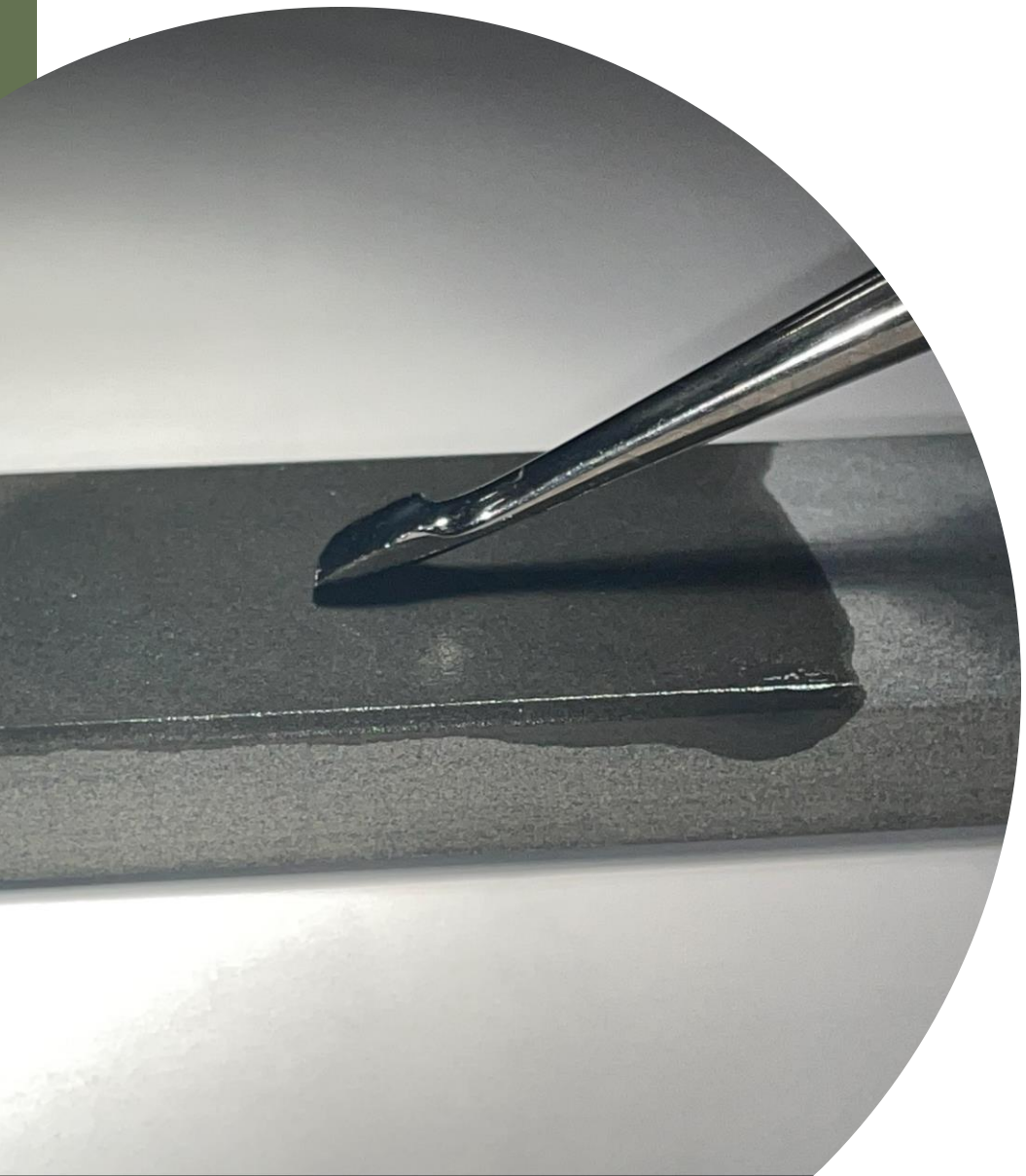
When the internal angle is less than 70°, the blade becomes weak and also dulls quickly.



NOT ENOUGH ANGULATION

When the internal angle is greater than 80°, the blade becomes bulky and is difficult to adapt to the tooth.





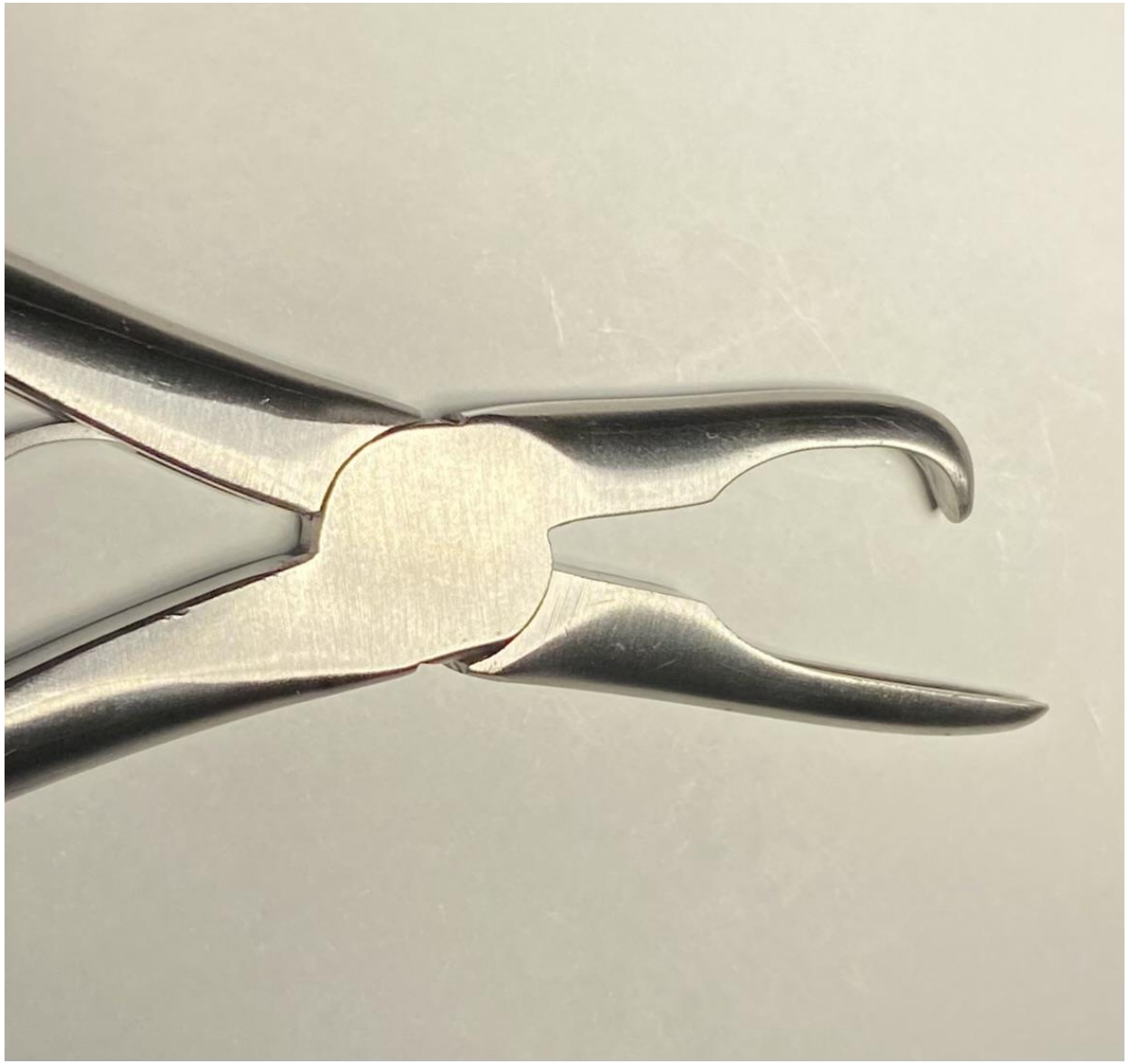
Sharpening instruments

Elevators should be sharpened on the flat surface. Stroke away and make sure to maintain the angle of the cutting surface. Use the conical stone to remove any metal burs (this is not used to sharpen the instrument.)

Calculus removal forceps

These are used for removing large deposits of calculus from the tooth surface.

Calculus removal forceps must be used properly to ensure you do not damage a tooth or the surrounding soft tissue.



Ultrasonic scaler

Piezoelectric -smaller metal tip that attaches to the handpiece

Low-speed handpiece accessories

Polishing paste

- Course grit
- Medium grit

Prophy Angle (disposable)

HIGH-SPEED HANDPIECES

Always check the manual to see if/when your highspeed needs to be lubricated.

Large selection of burs


WE FINISHED LEARNING ALL OF OUR DENTAL HYGIENE INSTRUMENTS
SO I GUESS YOU COULD SAY THINGS ARE GETTING PRETTY SERIOUS
makeameme.org
ifunny.co

Questions?

Bibliography

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Perrone, JR. *Small Animal Dental Procedures for Veterinary Technicians and Nurses.* Ames; Wiley-Blackwell; 2013