

## Advanced Dentistry Drylab

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### Merit, TB, G, 20 years

- Complaint:
  - Evaluation of 304 FX.
- HX: Chronic Choker.
- Physical Exam:
  - Unremarkable



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### Merit, TB, G, 20 years

- Oral Examination:
  - CT: Mild Bilateral WV.
  - Canines: ?
  - Incisors: ?



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### Merit, TB, G, 20 years

- Survey Radiographs: Standard Intraoral (IO) DV.



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### Merit, TB, G, 20 years

- Survey Radiographs: Standard Intraoral (IO) VD.



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### Merit, TB, G, 20 years

- Radiographic Findings: ?
- Are the images provided sufficient to formulate a Diagnosis? A Treatment Plan?
- Diagnosis: ?
- Treatment Plan: ?

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### Merit, TB, G, 20 years

- PE Findings ?



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### Merit, TB, G, 20 years

- PE Findings ?



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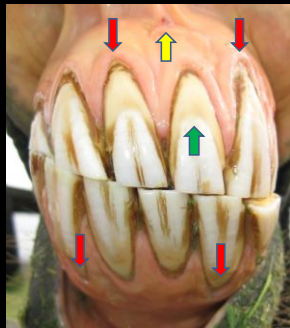
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### Merit, TB, G, 20 years

- PE Findings ?
  - Gingival Recession?
  - Mucosal Tract
  - Cementum
- Perio Indices:
  - Plaque
  - Calculus
  - Probing Depth
  - Sulcular Bleeding
  - Mobility



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## Merit, TB, G, 20 years Oral Examination: PE

- Chart for Characterization of Equine Periodontal Disease:
  - Patient \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Breed \_\_\_\_\_ Owner \_\_\_\_\_
  - Previous history of dental care: \_\_\_\_\_
  - Location of Periodontal Disease: \_\_\_\_\_
  - Tooth Mobility Index: (0) (1) (2) (3) (4)
  - Cementum:
    - Supragingival: Normal; Stained; Decayed.
    - Subgingival: Normal; Stained; Decayed.
  - Gingiva: Normal; Recessed; Inflamed, Ulcerated.
  - Sulcular Epithelium: Normal; Inflamed; Necrotic
  - Pocket Length: \_\_\_\_\_ mm
  - Pocket Depth: \_\_\_\_\_ mm
  - Radiographs: Yes/No Findings: \_\_\_\_\_

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## Merit, TB, G, 20 years Oral Examination: PE

- Periodontal Indices:
  - Plaque Index.
  - Calculus Index
  - Gingival Index.
  - Sulcular Bleeding Index.
  - Tooth Mobility Index

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## Merit, TB, G, 20 years

- AVDC Definitions:
  - **Stage**: The assessment of the extent of pathological lesions in the **course of a disease** that is likely to be **progressive**. E.g., stages of periodontal disease, staging of oral tumors, etc.
  - **Grade**: The quantitative assessment of the degree of severity of a disease or abnormal condition at the time of diagnosis, **irrespective of whether the disease is progressive** e.g., a grade 2 mast cell tumor (based on mitotic figures)
  - **Index**: A quantitative expression of **predefined diagnostic criteria** whereby the presence and/or severity of pathological conditions are recorded by assessing a numerical value e.g., gingival index, plaque index, etc.

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Merit, TB, G, 20 years  
Oral Examination: PE

- Plaque Index
  - PI 0: No Plaque.
  - PI 1: Thin film along gingival margin.
  - PI 2: Moderate accumulation.
  - PI 3: Abundant soft material in sulcus.

Ref: Wiggs. Pg 685.

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Merit, TB, G, 20 years  
Oral Examination: PE

- Gingival Index
  - GI 0: Normal Gingiva.
  - GI 1: Mild Inflammation, slight color changes, slight edema; **no bleeding** on probing.
  - GI 2: Moderate Inflammation; redness, edema, and glazing; **bleeding** on probing.
  - GI 3: Severe Edema.

Ref: Wiggs. Pg 685.

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Merit, TB, G, 20 years  
Oral Examination: PE

- Sulcular Bleeding Index
  - SBI 0: Healthy Appearance, No bleeding on sulcus probing.
  - SBI 1: Apparently healthy, Slight bleeding on sulcus probing.
  - SBI 2: Bleeding on probing, color change due to inflammation, no swelling or edema.
  - SBI 3: Bleeding on probing, color change, slight edema.
  - SBI 4: Bleeding on probing, color change, obvious swelling.
  - SBI 5: Spontaneous Bleeding on probing.

Ref: Wiggs. Pg 686.

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### Merit, TB, G, 20 years Oral Examination: PE

- Calculus Index
  - CI 0: No Calculus.
  - CI 1: Supragingival Calculus, extending only slightly below the free gingival margin.
  - CI 2: Moderate amount of supra- and subgingival calculus, or subgingival calculus only.
  - CI 3: Abundant supra- and subgingival calculus.

Ref: Wiggs. Pg 686.

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### Merit, TB, G, 20 years Oral Examination: PE

- Tooth Mobility Index
  - MI 0: Mild Normal
  - MI 1: Represents the first distinguishable sign of movement greater than normal.
  - MI 2: Moderate Movement of up to approximately 3 mm.
  - MI 3: Severe Movement >3 mm in any direction and/or is depressible.

– Klugh, DO. 2005. Equine Periodontal Disease. Clin Tech Equine Pract 4:135-147.

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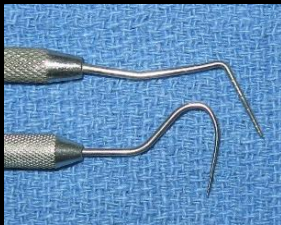
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### Little Joe, APH, G, 7 yrs Oral Examination: PE

- Instrumentation:
  - Probe
  - Mirror
- Normal Sulcular Depth:
  - < 3mm: Is, Cs, PM1-2.
  - < 5mm: PM3-M3.



Klugh DO. (2006) A Review of Equine Periodontal Disease. In Proceedings, AAEP Annual Conv, 52, p. 551-8.

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### Merit, TB, G, 20 years

• PE Findings ?



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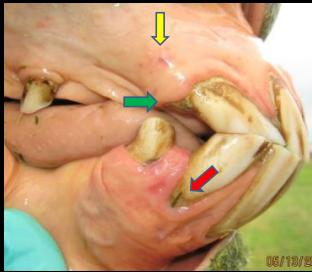
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### Merit, TB, G, 20 years

• PE Findings ?

- Gingival Recession.
- Mucosal Tract
- Cementum
- Perio Indices:
  - Plaque
  - Calculus
  - Probing Depth
  - Sulcular Bleeding
  - Mobility



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### Merit, TB, G, 20 years

• PE Findings ?



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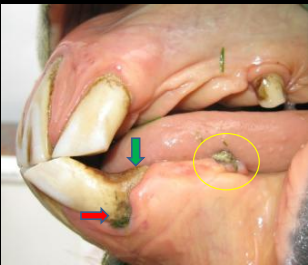
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### Merit, TB, G, 20 years

- PE Findings ?
  - 304 CR/FX
  - Gingival Recession
  - Cementum
  - Perio Indices:
    - Plaque
    - Calculus
    - Probing Depth
    - Sulcular Bleeding
    - Mobility




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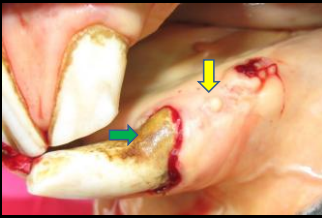
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### Merit, TB, G, 20 years

- PE Findings ?
  - Mucosal Tract
  - Cementum
  - Perio:
    - Plaque
    - Calculus
    - Probing Depth – 12+mm
    - Sulcular Bleeding (SBI 5)
    - Mobility (MI 3)




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### Merit, TB, G, 20 years

- Based on PE Findings:
  - DGL4.
  - 103/ 201: Mucosal Tract.
  - 303: MI3, Mucosal Tract (exudate), GR?, proliferative peripheral cementum.
  - 304: CR/FX, PP, exudate.
- Diagnosis: ?
  - Y Periodontal Disease
  - M Endodontic Disease
  - C Hypercementosis
  - A All of the Above.

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### Merit, TB, G, 20 years

- **Diagnosis: ?**
  - Y Periodontal Disease
  - M Endodontic Disease
  - C Hypercementosis
  - A **All of the Above.**

• Based on PE Findings.

• **Treatment Plan?**

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### Merit, TB, G, 20 years

• Survey Radiographs: Standard Intraoral (IO) DV.



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### Merit, TB, G, 20 years

- **Radiographic Findings?.**
  - Max Canines: ?
  - Max Incisors: ?



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### Merit, TB, G, 20 years

• Radiographic Findings?



- Max Canines:
  - Crown: Normal.
  - Nondiagnostic.
- Max Incisors:
  - Tooth Resorption.
  - Proliferative Peripheral Cementum.
  - Widened PDL Spaces
  - Root Canal System?

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### Merit, TB, G, 20 years

- Survey Radiographs: Standard Intraoral (IO) VD.



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### Merit, TB, G, 20 years

• Radiographic Findings?.



- MN Canines: ?
- MN Incisors: ?

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### Merit, TB, G, 20 years

• Radiographic Findings?.



- MN Canines:
  - Crown: ?
  - PDL Space?
  - Root Canal System?
  - Diagnostic?
- MN Incisors:
  - Tooth Resorption.
  - Proliferative Peripheral Cementum.
  - Widened PDL Spaces.
  - Root Canal System?

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### Merit, TB, G, 20 years

• Tooth Resorption Radiographic Signs:

- Type I - relative normal radiodensity and normal appearance of the PDL space. (Incisors?)
- Type II - extensive root replacement by alveolar bone, absence of PDL space. (Canines?)




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### Merit, TB, G, 20 years

• Tooth Resorption (AVDC Nomenclature)

- The AVDC classification of tooth resorption is based on the assumption that tooth resorption is a progressive condition.
- 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 cementum 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 cementum 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.
  - TR4b: Crown is more severely affected than the root.
  - 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.

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### Merit, TB, G, 20 years

• **Diagnosis?**

- Y Periodontal Disease
- M Hypercementosis
- C Tooth Resorption.
- A EOTRH.

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### Merit, TB, G, 20 years

• **Diagnosis?**

- Y Periodontal Disease
- M Hypercementosis
- C Tooth Resorption.
- A **EOTRH.**

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### Merit, TB, G, 20 years

• **Diagnosis: ?**

- Klugh, D.O., 2004. Incisor and canine periodontal disease. In: Proceedings of the 18th VDF, Fort Worth, USA, pp.166–169.
- Gregory, R.C., Fehr, J., Bryant, J., 2006. Chronic incisor periodontal disease with cemental hyperplasia and hypoplasia in horses. In: Proceedings of the AAEP Focus on Dentistry Mtg.
- Baratt, R.M., 2007. Equine incisor resorptive lesions. In: Proceedings of the 21st VDF, Minneapolis, USA, pp. 23–30.
- Caldwell, L.A., 2007. Clinical features of chronic disease of the anterior dentition in horses. In: Proceedings of the 21<sup>st</sup> VDF, Minneapolis, USA, pp. 18–21.

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### Merit, TB, G, 20 years

- **Diagnosis: ?**
  - Staszky, C., Bienert, A., Kreutzer, R., Wohlsein, P., Simhofer, H., 2008. Equine odontoclastic tooth resorption and hypercementosis. The Veterinary Journal 178 (3), 372–379.
    - Histological Description.
      - **Primary Disease:** Tooth Resorption
      - Hyercementosis: Reparative Response
    - TR & HC: Similar to FORL (Feline) and MIRR (Human).
  - **Unique:**
    - **Irregular Cementum:** Supports PDL reattachment.
    - Cementum Deposition can be a generalized feature.
    - TR: No evidence of prior Internal Resorption.

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### Merit, TB, G, 20 years

- **Diagnosis: ?**
  - **EOTRH.**
  - Warning: Syndrome.
- **Case Options?**
  - Y Monitor Progression of Case. (Ignore?)
  - M More Imaging.
  - C Treatment Planning.
  - A Refer to Bob or Ed!

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### Merit, TB, G, 20 years

- **Diagnosis: ?**
  - **EOTRH.**
  - Warning: Syndrome.
- **Case Options?**
  - Y Monitor Progression of Case. (Ignore?)
  - M **More Imaging. (Tooth Specific Imaging)**
  - C Treatment Planning.
  - A **Refer to Bob or Ed!**

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Merit, TB, G, 20 years



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Merit, TB, G, 20 years



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Merit, TB, G, 20 years



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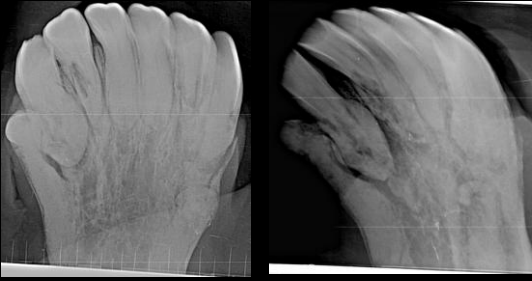
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Merit, TB, G, 20 years



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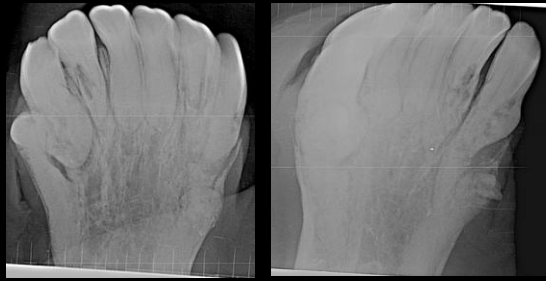
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Merit, TB, G, 20 years



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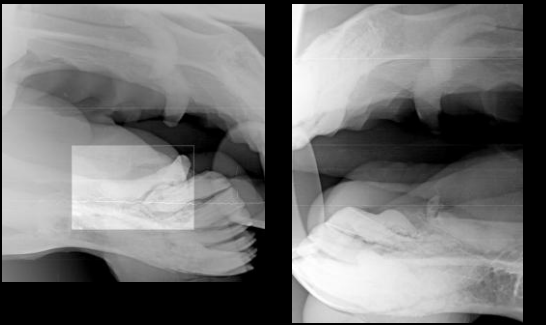
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Merit, TB, G, 20 years



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### Merit, TB, G, 20 years

- **Diagnosis:**
  - Generalized EOTRH to Max & MN INC and MN Canines
  - 103 Mucosal Tract to TR4 Lesion.
  - 201: Mucosal Tract to TR3 Lesion.
  - 303: PD 4, Mucosal Tract to TR3/4 Lesion.
  - 403: PD 3, TR3/4 Lesion.
  - 3/404: TR4b (Crown).

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### Merit, TB, G, 20 years

- **Diagnosis:**
  - Generalized EOTRH to Max & MN INC and MN Canines
  - 103 Mucosal Tract to TR4 Lesion.
  - 201: Mucosal Tract to TR3 Lesion.
  - 303: PD 4, Mucosal Tract to TR3/4 Lesion.
  - 403: PD 3, TR3/4 Lesion.
  - 3/404: TR4b (Crown).
- **Treatment Plan: ?**
  - Y Monitor Progression of Case. (Ignore?)
  - M Multiple Extractions (Single Visit).
  - C Multiple Staged Extractions.
  - A Refer to Bob or Ed!

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### Merit, TB, G, 20 years

- **Diagnosis:**
  - Generalized EOTRH to Max & MN INC and MN Canines
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  - 201: Mucosal Tract to TR3 Lesion.
  - 303: PD 4, Mucosal Tract to TR3/4 Lesion.
  - 403: PD 3, TR3/4 Lesion.
  - 3/404: TR4b (Crown).
- **Treatment Plan: ?**
  - Y Monitor Progression of Case. (Ignore?)
  - M Multiple Extractions (Single Visit).
  - C Multiple Staged Extractions.
  - A Refer to Bob or Ed!

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## Merit, TB, G, 20 years

- **Diagnosis:**
  - Generalized EOTRH to Max & MN INC and MN Canines
  - 103 Mucosal Tract to TR4 Lesion.
  - 201: Mucosal Tract to TR3 Lesion.
  - 303: PD 4, Mucosal Tract to TR3/4 Lesion.
  - 403: PD 3, TR3/4 Lesion.
  - 3/404: TR4b (Crown).
- **Treatment Plan:**
  - Extract: 103/ 201/ 303/ 403.
  - Crown Amputation: 304/ 404.
  - Exploratory?

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## Merit, TB, G, 20 years

- **Treatment Plan?**
  - Extract: 103/ 201/ 303/ 403.
  - Crown Amputation: 304/ 404.
- **Patient Care:**
  - PreWean onto a soft food.
  - Sedation CRI.
  - Local/Regional Anesthesia.
  - Analgesics.
  - Antibiotics.



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## Merit, TB, G, 20 years



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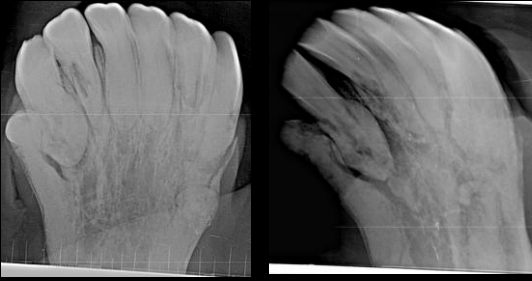
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Merit, TB, G, 20 years



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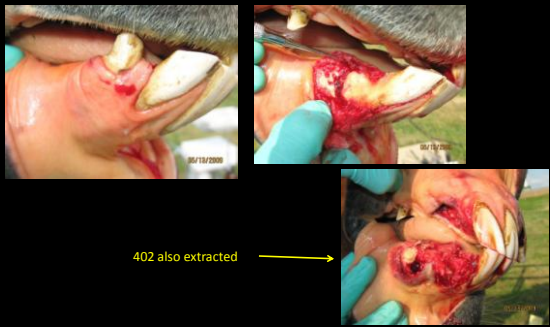
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Merit, TB, G, 20 years



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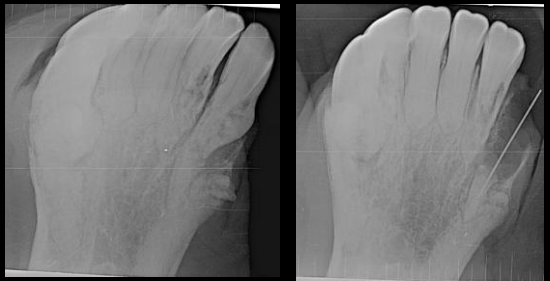
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Merit, TB, G, 20 years



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### Merit, TB, G, 20 years



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### Merit, TB, G, 20 years

- Treatment:
  - Extract: 103/ 201/ 302/ 303/ 402/ 403
  - Crown Amputation: 304/ 404.
- AfterCare:
  - Wash mouth BID with 0.05% CHX Soln
  - TMP/SMZ x 2 weeks.
  - Bute x 1 week.
- Re-evaluation in 1 Month.



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### Merit, TB, G, 20 years 1 months PostOp



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Merit, TB, G, 20 years  
1 months PostOp



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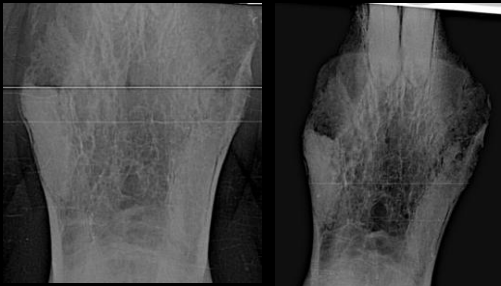
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Merit, TB, G, 20 years  
1 months PostOp



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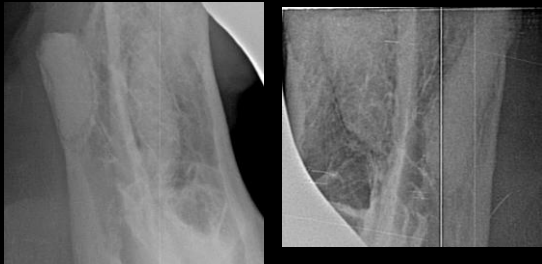
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Merit, TB, G, 20 years  
1 months PostOp



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### Merit, TB, G, 20 years 1 months PostOp

- Treatment
  - 303/304 Debridement
- AfterCare:
  - Wash mouth BID with 0.05% CHX Soln.
  - TMP/SMZ x 2 weeks.
  - Bute x 1 week.
- Re-evaluation in 3 Month.



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### Merit, TB, G, 20 years 6 months PostOp



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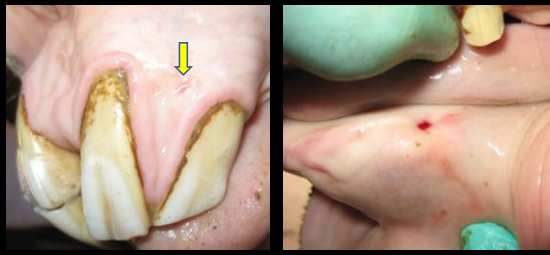
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### Merit, TB, G, 20 years 6 months PostOp

- 203 and 304 Tracts.



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Merit, TB, G, 20 years  
6 months PostOp



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Merit, TB, G, 20 years  
6 months PostOp



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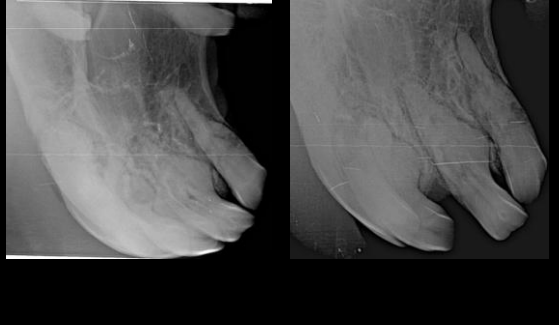
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Merit, TB, G, 20 years  
6 months PostOp



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Merit, TB, G, 20 years  
6 months PostOp



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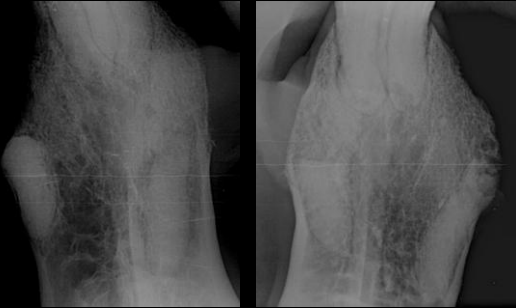
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Merit, TB, G, 20 years  
6 months PostOp



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Merit, TB, G, 20 years  
6 months PostOp

- Plan?  
- 102



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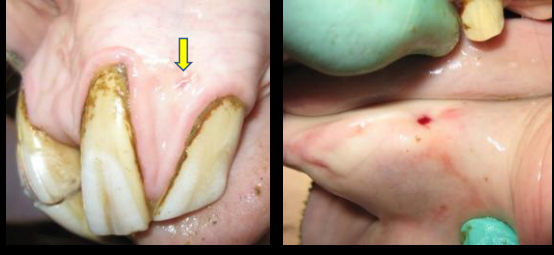
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Merit, TB, G, 20 years  
6 months PostOp

- Plan: Extract 203 and 304.



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