Evidence Based Dentistry Rounds

Periodontics

8a-1

Evan, Hannah, Austin,Thi My Linh

Rounds team

- Group Leader: Dr. Toburen
- Specialty Leader: Dr. Morvarid
- Project Team Leader: D4 Evan Pagano
- Project team Participants: D1: Thi My Linh Nguyen, D2: Austin Davies, D3 Hannah Markquart

PATIENT

- Age – 46 years old
- Gender – Male
- Ethnicity – African
- Chief Complaint – "I want to get implants to replace my missing teeth"

- Additional information – Patient came in with Nesbit Partial that had become stuck for the last 10 months.

Medical History

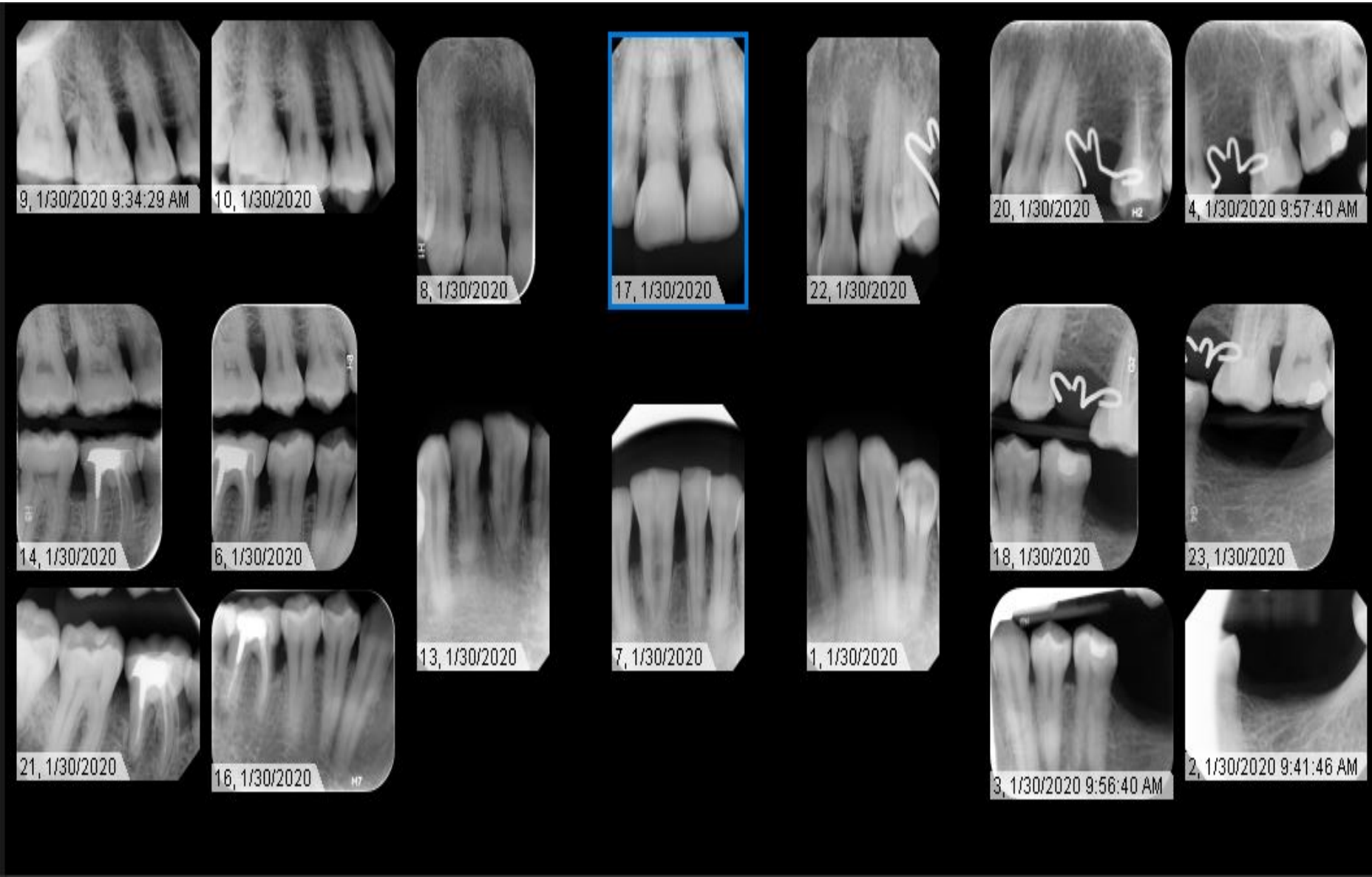
- Current and past: Non-contributory
  - Diagnoses: Heart burn
  - Medications: Multivitamin
  - Medical consults: None
  - Treatment considerations: None

Dental History

- Patient has had a large amount of previous care done by various dentists in throughout Africa.
- Treatments: extractions, fillings, endo, nesbit partial denture.

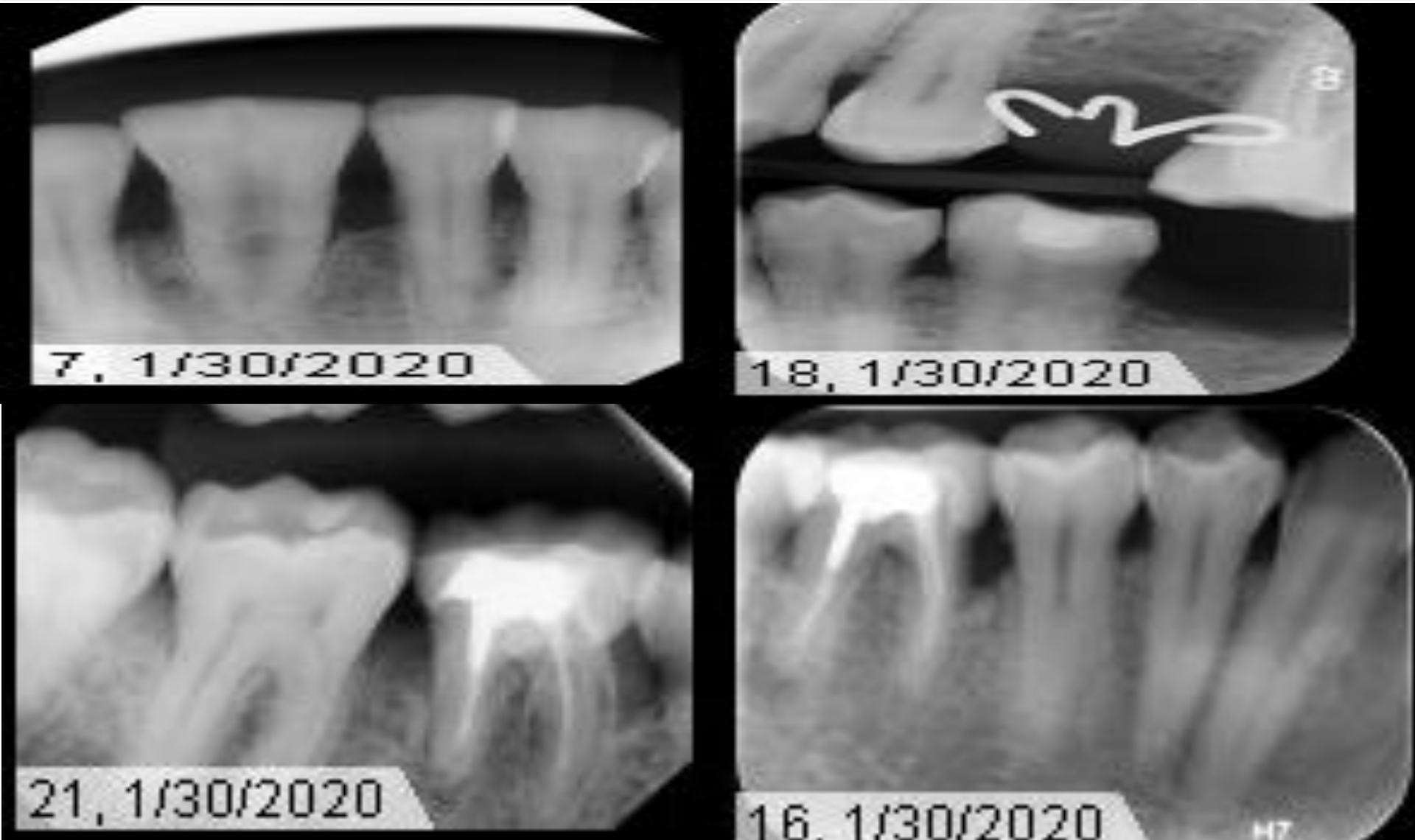
Radiographs

FMX



Radiographs

PAs



Radiographic Findings

- Gemination, tori, periapical radiolucencies, endo treated teeth, Composite restorations, nesbit partial denture, vertical bone loss, external resorption, caries

Clinical Findings

- #5 D caries
- #9 external resorption
- #13 Tissue erythemia from nesbit partial
- #14 defective endo, O composite
- #15 O amalgam
- #20 OB composite
- #23 wear facet
- #24 wear facet
- #25 gemination
- #30 porcelain crown, Endo, Post and core, D PARL
- #31 D watch
- Black speckles on lateral of tongue
- Bilateral mandibular tori

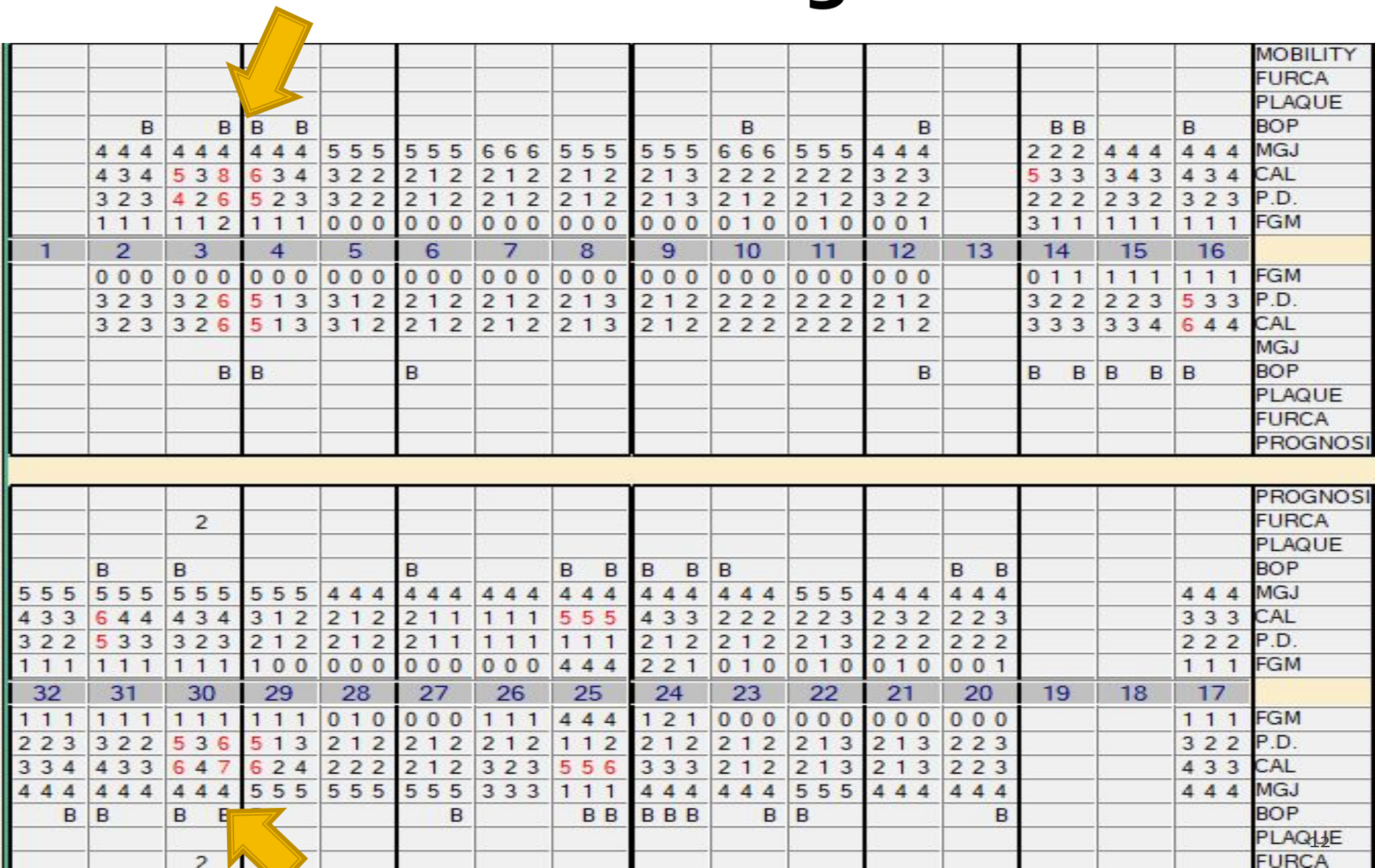
Clinical Findings Continued…

- Functional Examination
  - Bilateral class I occlusion skeletal and occlusal
  - C.R/C.O – 1 mm left lateral excursion
  - TMJ issues: None
  - Opening: 40mm
  - Left lateral: 15mm
  - Right lateral: 15mm

Specific Findings

- #13 Nesbit partial stuck between #12 and #14 for the last ten months.
- #25 class II mobility on geminated tooth.

Periodontal Charting



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Diagnosis

- Moderate chronic periodontitis

Problem List

- Periodontitis, caries, missing teeth, external resorption, apical radiolucencies, mobility, dental hygiene.

Gemination:

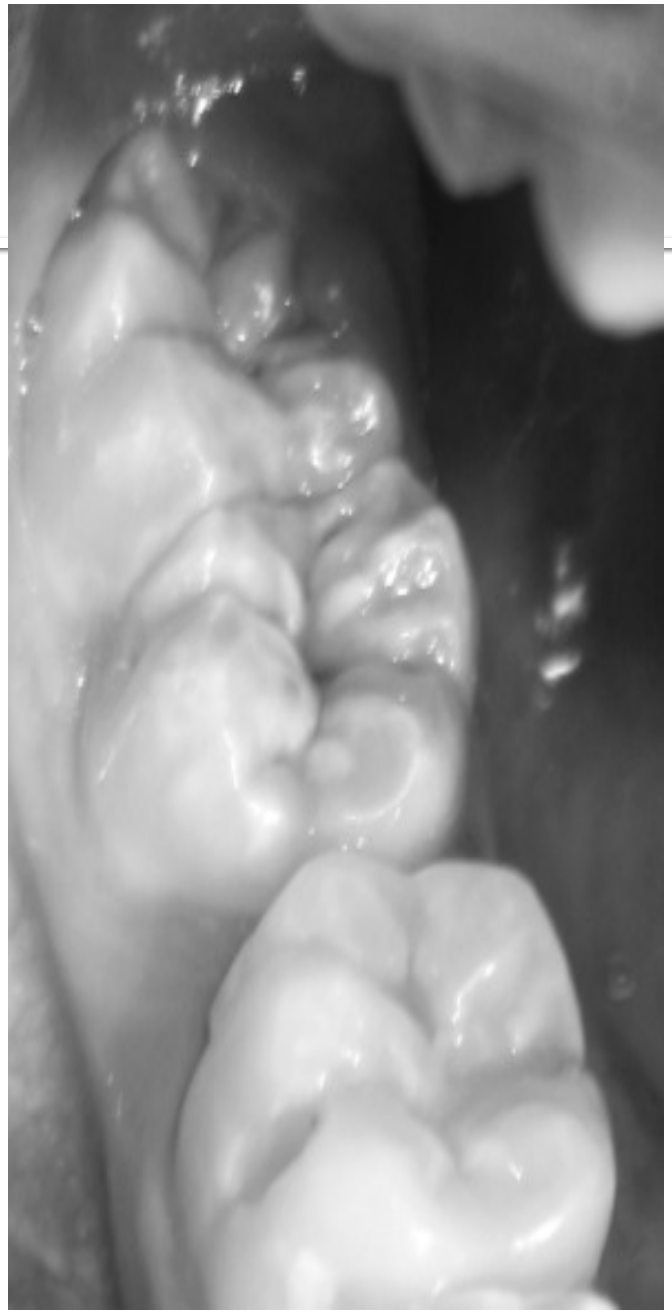
- Development anomaly of hard tissue
- A large single tooth with a bifid crown
  - Either complete or incomplete separation of crown
- One single root and root canal
- Normal number of teeth in the dentition
  - As oppose to reduced number of teeth in cases with Fusion

Figure: Clinical view of bilateral permanent maxillary central incisors with deep notches

Source: Shokri Abbas et al. "The largest bilateral gemination of permanent maxillary central incisors: Report of a case. *Journal of clinical and experimental dentistry* vol. 5,5 e295-7. 1 Dec. 2013, doi: 10.4317/jced.51197

D2 – What is the pathology of Gemination and where is it seen?

- Double Tooth category of abnormality
- 'Cap' stage of the proliferative phase in tooth development
- Invagination attempting to split
- Anterior teeth
- Deciduous teeth > Permanent teeth
- 2.5% of deciduous teeth, 0.2% of primary dentition
  - In one study by Brooke et al. 50% of teeth deciduous affected by double tooth abnormality will have a similar presentation in their permanent dentition



Clinical Photos – Mandibular Second Molar Gemination?

D3 PICO

- **Clinical Question:**
  - **How does the endodontic status of a tooth affect periodontal regeneration?**

PICO Format

P: Patients with previously treated teeth needing periodontal regenerative surgery

I: Endodontically treated teeth

C: Non-endodontically treated teeth

O: Improved probing depths and clinical attachment loss

PICO Formatted Question

- In patients with previously treated teeth does endo affect the outcome of periodontal regenerative surgery when compared to non-endodontically treated teeth when looking at probing depths and clinical attachment loss?

Clinical Bottom Line

- There does not seem to be any statistically significant evidence that RCT treatment has an impact on the success of periodontal regenerative surgery. However, there does seem to be some statistically significant evidence that periodontal regenerative surgery can improve the success of root canal treated teeth.

Search Background

- **Date(s) of Search:** 11/08/2020, 11/14/2020
- **Database(s) Used: PubMed**
- **Search Strategy/Keywords:**
  - **Periodontal disease, vertical defects, periodontal regeneration, root canal therapy, clinical attachment loss, probing depths**

Search Background

MESH terms used:

- **Guided periodontal tissue regeneration**
- **Periodontal surgery**
- **Root Canal Therapy**
- **Tooth, Nonvital**
- **Periodontal Attachment Loss**
- **Periodontal Pocket**

Article 1 Citation, Introduction

- Citation:
  - De Sanctis, M. Goracci, C. Zucchelli, G. Long-term effect on tooth vitality on regeneration therapy in deep periodontal bony defects: a retrospective study. Int J Periodontics Restorative Dent 2013;33:151–157. doi: 10.11607/prd.1461
- Study Design: Retrospective Study
- Study Need / Purpose:
  - Evaluated

Article 1 Synopsis

- Method
  - 137 patients total. 54 treated 1992-97, 48 treated 1997-2000, and 35 treated 2000-2003.
  - All patients were recalled in 2010 to evaluate pocket depths, recession, and CAL. A PA radiograph and vitality testing were also taken.
  - One-way analysis of variance (ANOVA) and chi-square analysis evaluated statistical significances among techniques and clinical parameters (PD, recession, CAL).
  - A Fisher exact test was also performed for evaluation of significance of loss of tooth vitality in relation to treatment.
- Results
  - "Aggressive periodontal surgery" does not pose a significant risk to the vitality of a tooth
  - Enamel Matrix Derivative (EMD) was the technique with the most CAL gain (5.36 +/- 0.7 mm), while guided tissue regeneration (GTR) had the least (4.90 +/- 1.0 mm)
- Conclusions – Performing RCT before "aggressive periodontal surgery" is not advised if there are not any other indications for RCT present
- Limitations
  - small sample size
  - results cannot be generalized and applied to all perio therapies

Article 1 Selection

- Reason for selection
  - Evaluated a number of periodontal therapies and their affect on tooth vitality 7-18 years post-treatment. There was no statistically significant evidence that aggressive perio treatment would cause loss of tooth vitality.
- Applicability to your patient
- Implications

Article 2 Citation, Introduction

- Citation:
  - Tsesis I, Rosen E, Tamse A, Taschieri S, Del Fabbro M. Effect of guided tissue regeneration on the outcome of surgical endodontic treatment: a systematic review and meta-analysis. J Endod. 2011 Aug;37(8):1039-45. doi: 10.1016/j.joen.2011.05.016. PMID: 21763891.
- Study Design: Systematic review and meta-analysis
- Study Need / Purpose: evaluate success of RCT after guided tissue regeneration

Article 2 Synopsis

- Method
- Results
- Conclusions
- Limitations

Article 2 Selection

- 1 slide
- Reason for selection
- Applicability to your patient
- Implications

Levels of Evidence

- [x] **1a** – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs)
- [ ] **1b** – Individual RCT
- [ ] **2a** – Systematic Review of Cohort Studies
- [x] **2b** – Individual Cohort Study
- [ ] **3** – Cross-sectional Studies, Ecologic Studies, "Outcomes" Research
- [ ] **4a** – Systematic Review of Case Control Studies
- [ ] **4b** – Individual Case Control Study
- [ ] **5** – Case Series, Case Reports
- [ ] **6** – Expert Opinion without explicit critical appraisal, Narrative Review
- [ ] **7** – Animal Research
- [ ] **8** – In Vitro Research

Double click table to activate check-boxes

Strength of Recommendation Taxonomy (SORT)

☒	**A** – Consistent, good quality patient oriented evidence
☐	**B** – Inconsistent or limited quality patient oriented evidence
☐	**C** – Consensus, disease oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention, or screening

Double click table to activate check-boxes

Conclusions: D3

How does the evidence apply to this patient?

- Consider/weigh:
  - Literature
  - Group Leader & Specialist experience
  - Patient circumstances & preferences

Based on the above considerations, how will you advise your D4?

Conclusions: D4

Consulted with both endo and perio specialties, CBCT of tooth was taken and endo wishes to observe radiolucency prior to endo retreatment. Will recommend perio consult to patient to expose the vertical defect and perform periodontal regenerative surgery on the area.

Discussion Questions

THANK YOU