Immediate Implant Placement

Evidence Based Dentistry Rounds
Specialty: Periodontology
Group: 9
Date: 09/23/20

Rounds Team

- Group Leader: Dr. Derderian
- Specialty Leader: Dr. Brunner
- Project Team Leader: Joel Ledvina
- Project Team Participants:
  - D3: Carly Kirkpatrick
  - D2: Hanna Anderson
  - D1: Anna Langworthy

Patient

- 29
- Male
- Asian
- “I want my crowns redone”
- Additional pertinent information

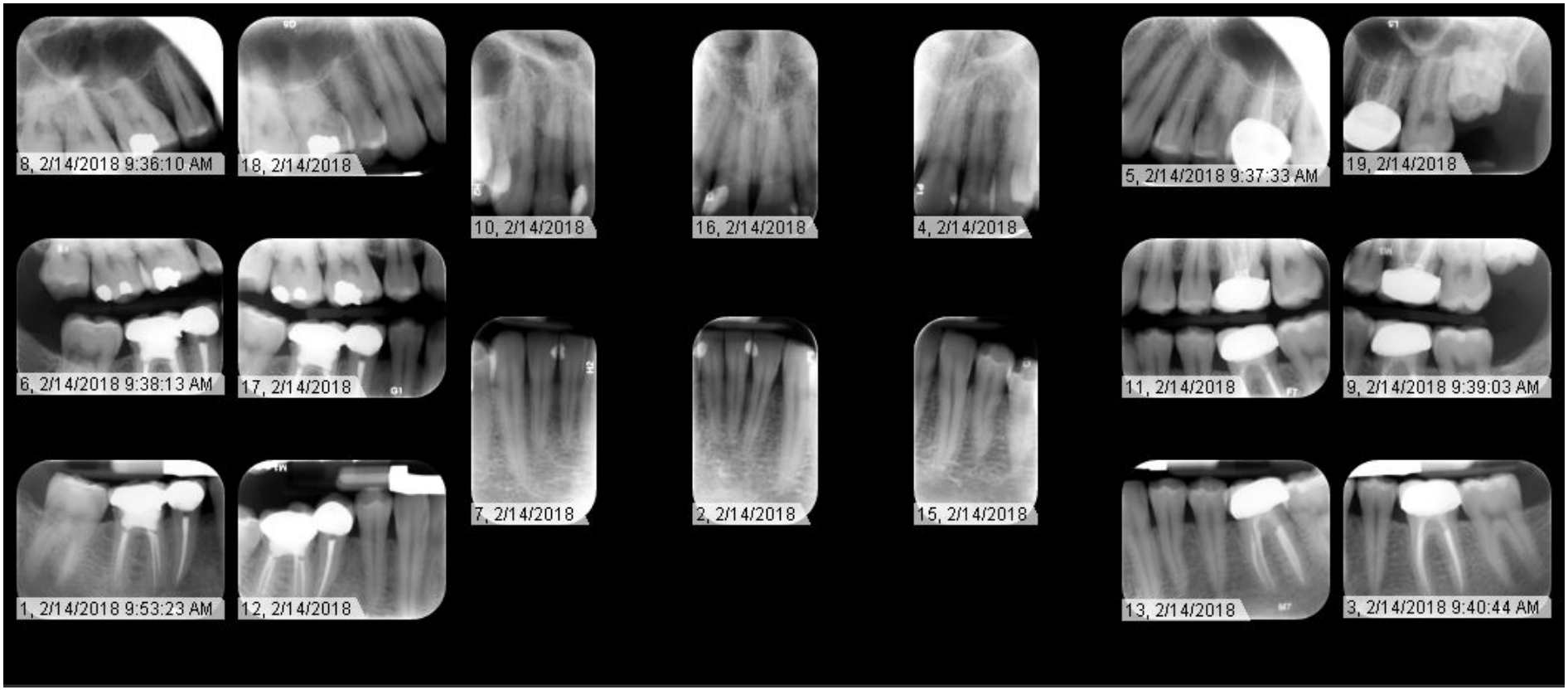
Medical History

- Current & past:
  - Non-contributory medical history for dental care
  - Conditions: None
  - Medications: None
  - Allergies: NKDA

Dental History

- Pre-2017: #14/#19 single crowns restored outside of the country.
- 2017: #29/#30 RCT
- 2018: Anterior Restorative
- 2019:
  - #30 Deemed Hopeless
  - #19 Crown Restoration

Radiographs



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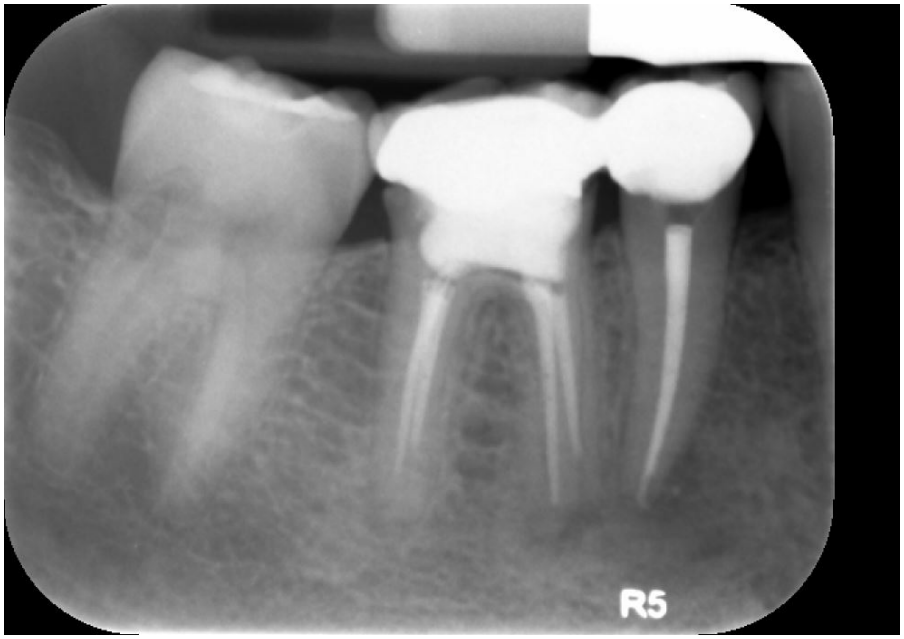
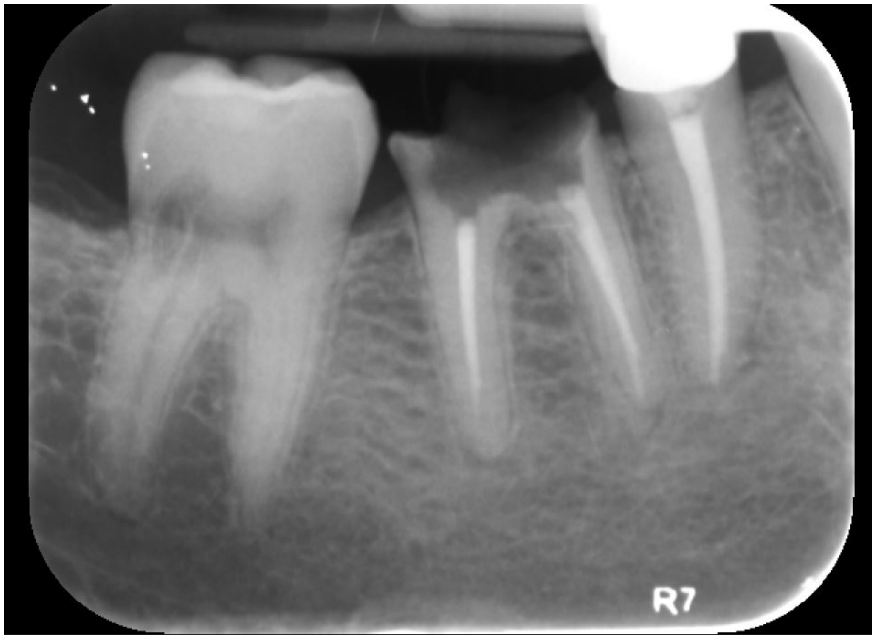




Radiographic Findings

- **RCT:** #14, #19, #29, #30
- **Amalgams:** #2 (OL), #3 (O)
- **Resins:** #7 (DL), #8 (DLF), #9 (DL), #10 (MLF), 12 (O)
- **Crowns:** #14, #19, #29

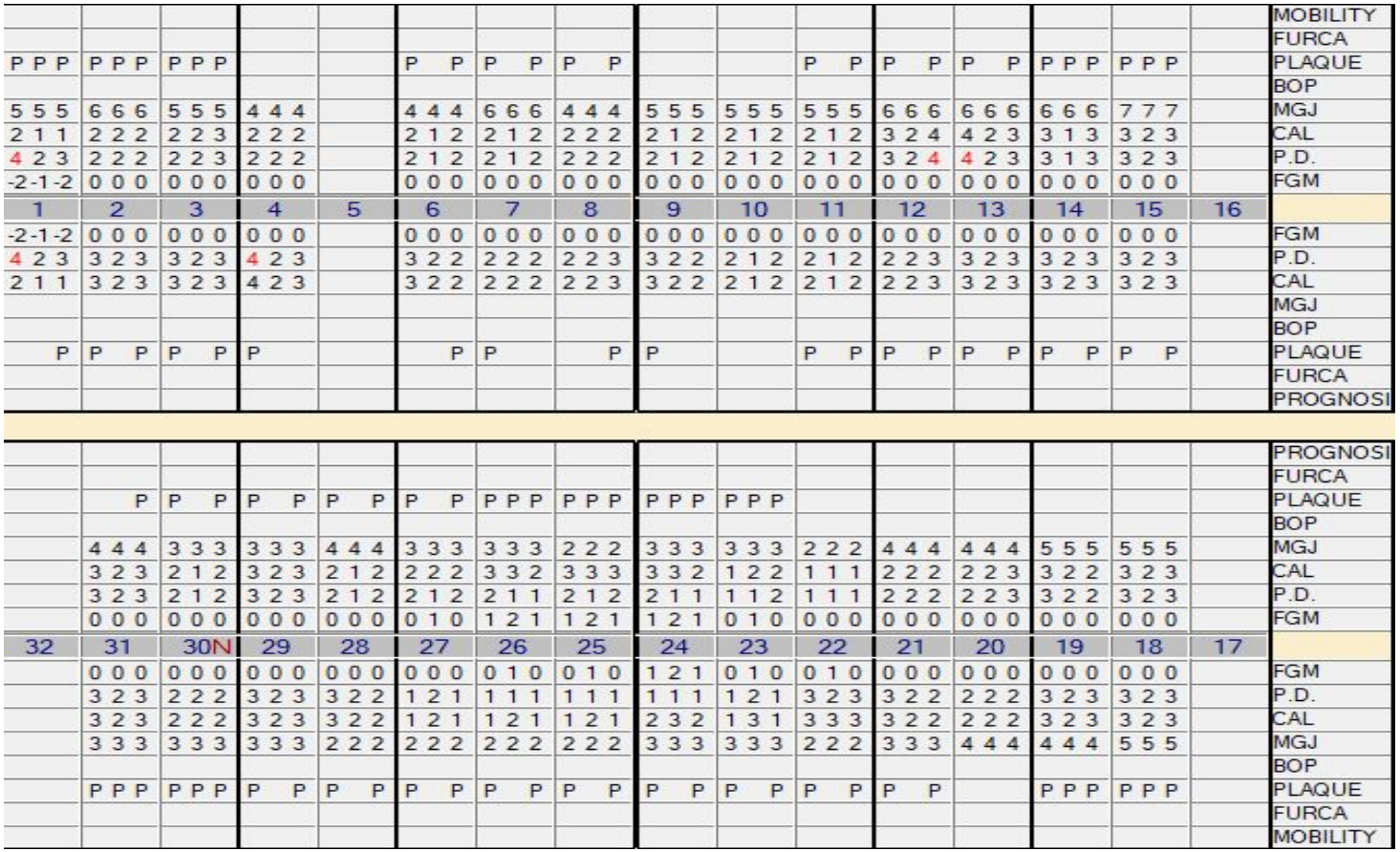
Clinical Findings

- #14: Distal Overhang (Defective Restoration)
- #19: Distal Overhang (Defective Restoration)
- #30: Gross Decay

Specific Findings

- #30: Gross Decay, Hopeless
  - Bone level adequate for implant placement

Periodontal Charting



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																	MOBILITY

Diagnosis

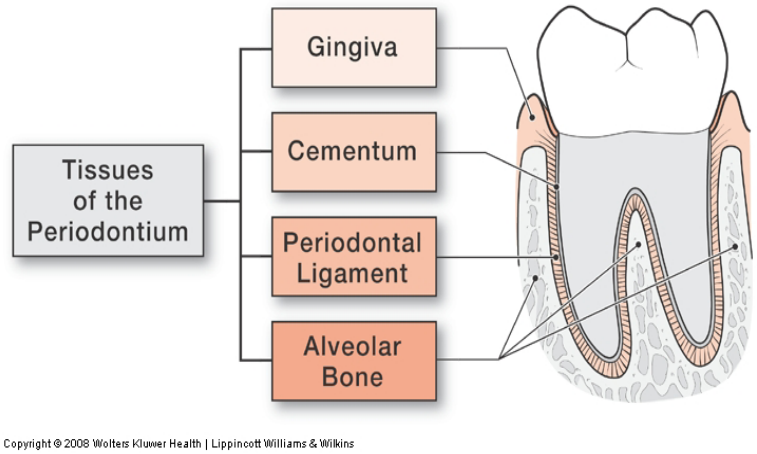
- Gingivitis – Dental Biofilm Induced

Problem List

- Defective Restorations
- Gross Decay
- Non-restorable Tooth

Anatomy of the Periodontium

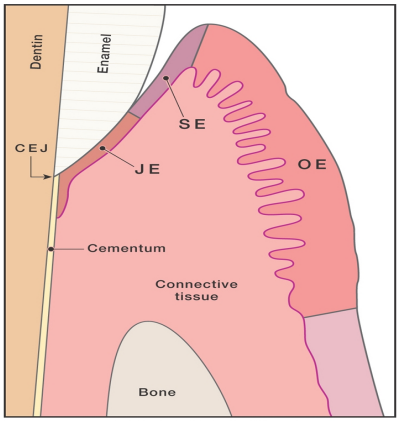
- Periodontium: The supporting structures of the tooth.
  - Gingiva (dentogingival junction)
    - Gingival, sulcular, and junctional epithelium
    - Connective tissue
  - Alveolar bone
    - Cortical and cancellous bone, alveolus
  - Periodontal ligament
    - Sharpey fibers
    - Cementoblasts, fibroblasts, osteoblasts
  - Root Cementum

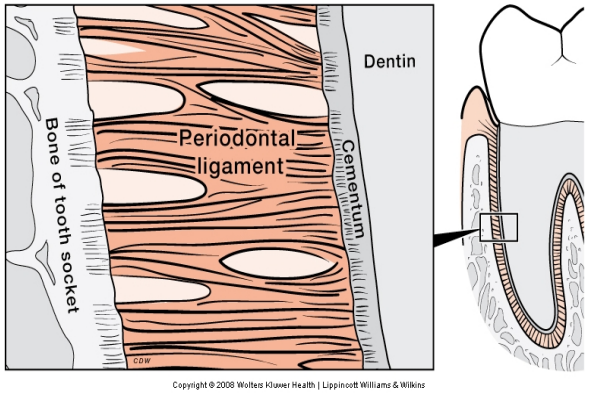


Nanci, Antonio, and Dieter D. Bosshardt. "Structure of Periodontal Tissues in Health and Disease*." *Periodontology 2000*, vol. 40, no. 1, 2006, pp. 11–28., doi:10.1111/j.1600-0757.2005.00141.x.

Functions of the Periodontium

- ***Gingiva*** provides a barrier between the oral environment and the deeper periodontal tissues, and it plays a role in host defense.
- ***Alveolar bone*** contains sockets to hold teeth and undergoes resorption and bone formation.
- ***Periodontal ligament*** suspends and maintains tooth in alveolar socket.
- ***Cementum*** serves as an attachment area for the periodontal ligament fibers. This anchors the tooth.





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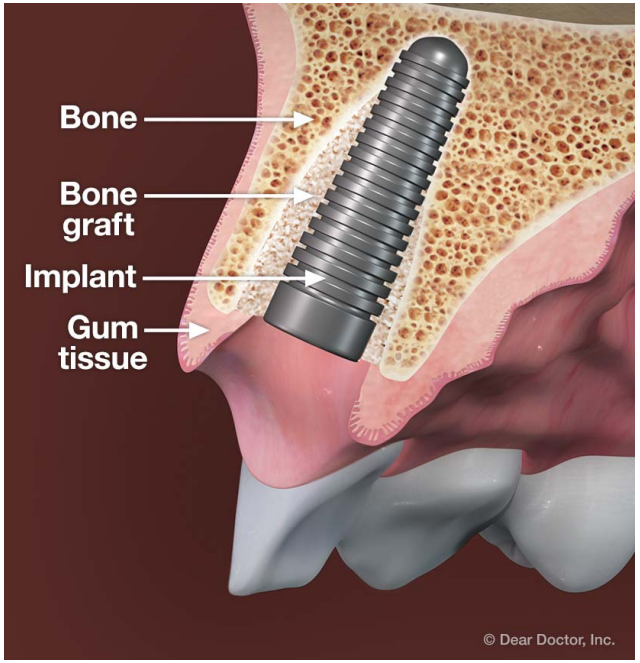
Pathology Associated with the Placement of Immediate Implants

- Overall, the survival is significantly worse than delayed implants
  - 98.38% vs 95.21%
- Placing the implant into an infected site is only minorly contraindicated
- Periodontal changes are the same between immediate and delayed implants
- Possible systemic contraindications: bisphosphonates, smoking habits, diabetes



Immediate Dental Implant. Retrieved September 16, 2020, from Dear Doctor website: https://www.deardoctor.com/articles/immediate-dental-implants/page2.php

Gómez-de Diego, R., Mang-de la Rosa, M. del R., Romero-Pérez, M. J., Cutando-Soriano, A., & López-Valverde-Centeno, A. (2014). Indications and https://doi.org/10.11607/jomi.4149 of dental implants in medically compromised patients: Update. *Medicina Oral, Patología Oral y Cirugía Bucal*, *19*(5), e483–e489. https://doi.org/10.4317/medoral.19565
Zhao, D., Wu, Y., Xu, C., & Zhang, F. (2015). Immediate dental implant placement into infected vs. Non-infected sockets: A meta-analysis. *Clinical Oral Implants Research, 27(10).* https://0-doi-org.libus.csd.mu.edu/10.1111/clr.12739
Mello, C., Lemos, C. Verri, F., Dos Santos, D., Goiato, M., & Pellizzer, E. (2017). Immediate implant placement into fresh extraction sockets versus delayed implants into healed sockets: A systematic review and meta-analysis. *Int J Oral Maxillofac Surg, 46(9),1162-1177.* https://doi.org/10.1016/j.ijom.2017.03.016
Turri, A., Rossetti, P., Canullo, L., Grusovin, M., & Dahlin, C. (2016). Prevalence of peri-implantitis in medically compromised patients and smokers: a systematic review. The International Journal of Oral & Maxillofacial Implants, 31(1). https://doi.org/10.11607/jomi.4149

D3 PICO

- **Clinical Question:**
  - Is an immediately placed implant indicated for this patient?

PICO Format

P:

I:

C:

O:

PICO Formatted Question

Clinical Bottom Line

Search Background

- **Date(s) of Search:**
- **Database(s) Used:**
- **Search Strategy/Keywords:**

Search Background

- **MESH terms used:**

Article 1 Citation, Introduction

- Citation: Authors, Title, Journal, Date, Volume, Page Numbers.
- Study Design:
- Study Need / Purpose:

Article 1 Synopsis

- 1-2 slides
- Method
- Results
- Conclusions
- Limitations

Article 1 Selection

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

Article 2 Citation, Introduction

- Citation: Authors, Title, Journal, Date, Volume, Page Numbers.
- Study Design:
- Study Need / Purpose:

Article 2 Synopsis

- 1-2 slides
- Method
- Results
- Conclusions
- Limitations

Article 2 Selection

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

Levels of Evidence

☐ **1a** – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs)
☐ **1b** – Individual RCT
☐ **2a** – Systematic Review of Cohort Studies
☐ **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

-Immediate implant recommended in order to expedite process at dental school, take advantage of adequate existing bone level and the ideal site conditions.

Discussion Questions

THANK YOU