General Information

- Keep the order of slides the same as this template.
- Limit the number of slides to about 35.
- Add graphics to illustrate concepts.
- Cite references, illustrations on slides.
- Avoid crowding the slide with too much text.
- Best font size: 32.
- Font size smaller than 24 will be difficult to read.

Implant Supported Prostheses

Group 6B-4

Scott Sutton, Lato Nguyen,
Hanfrey Deng, Abigail Yurs

10/8/2019

Rounds Team

- Group Leader: Dr. Cimrmancic
- Specialty Leader: Dr. An
- Project Team Leader: Scott Sutton
- Project Team Participants: D1-Abigail Yurs; D2-Hanfrey Deng; D3-Lato Nguyen

Patient Background

- David, 64 yo Caucasian Male
- CC: “I want to be able to chew”

Medical History

- MH: asthma, HTN
- Meds: indomethacin, lisinopril
- NKDA

Dental History

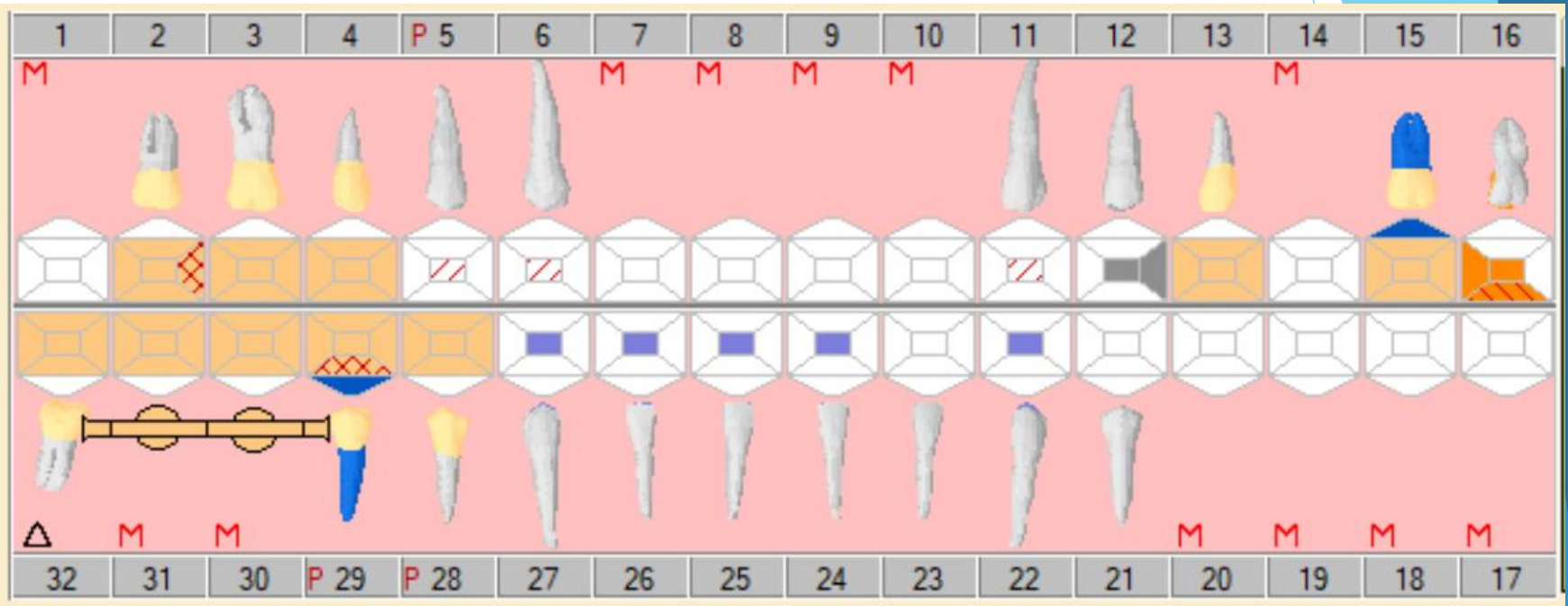
- Caries
- Extractions
- Trauma
- Periodontal disease

Radiographs

Radiographs

- Radiographic Findings:
  - Recurrent decay M #2
  - Recurrent decay #29, failing bridge → hopeless prognosis indicated for EXT per perio

Odontogram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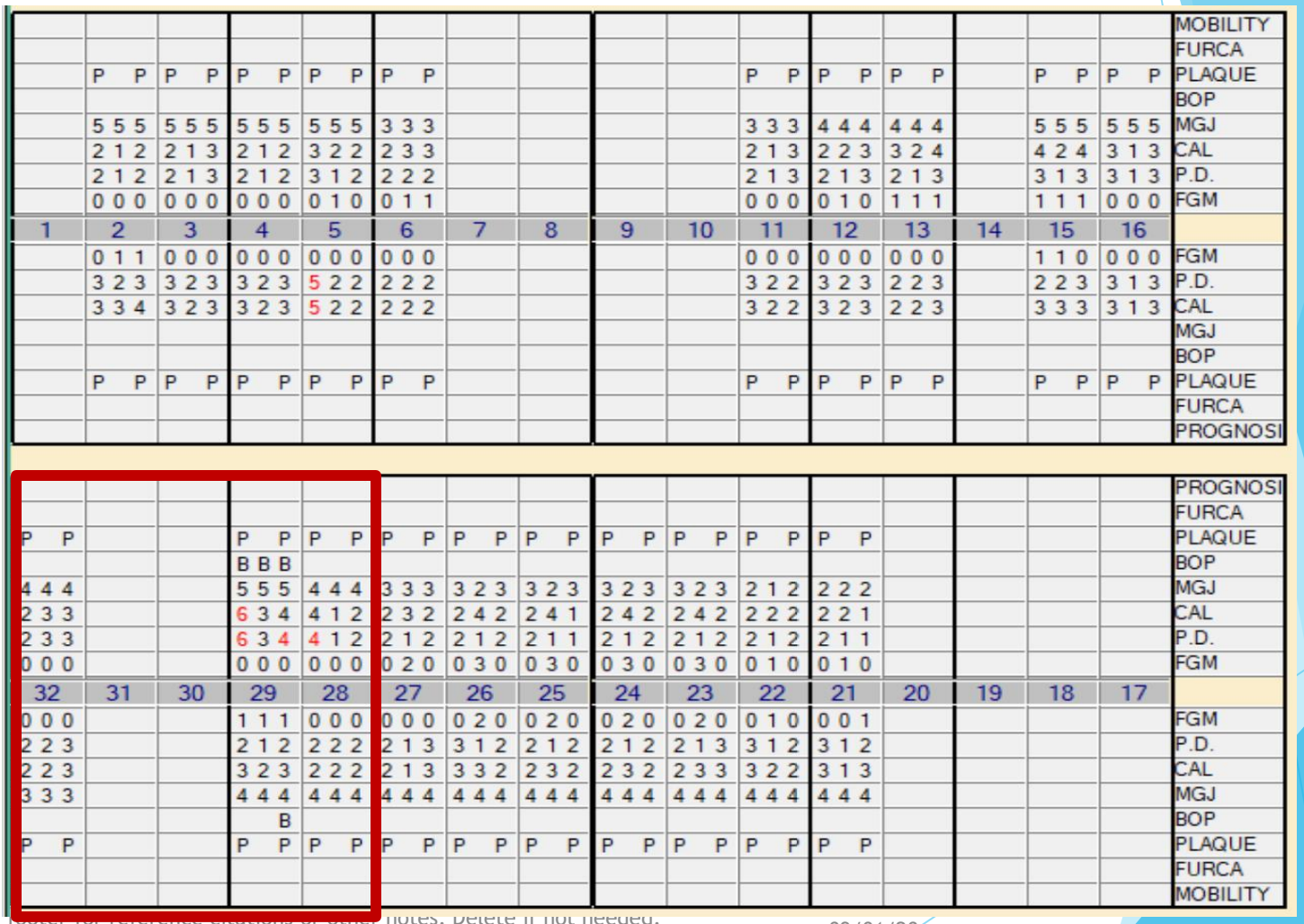
Perio Chart



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																	MOBILITY

Clinical Findings

- **Missing teeth:**
  - Max = #7-10, #14 (pt currently has Class III mod 1 RPD)
  - Mand = #17-20 (#28-32 also planned)
- Recurrent Decay:
  - #2 M and #29 OB
- Missing restoration:
  - #23 I
- Periodontal:
  - Localized moderate chronic periodontitis
  - Class II furcation #32

Problems List

- Caries
- Trauma history
- Missing teeth
- Bruxism
- Decreased VDO

Diagnosis

- Caries
- Periodontitis

D1 - What is osseointegration?

- Complete contact between bone tissue and implant
- 2-6 months for complete contact
- Necessary for stability and function

- Risk factors that contribute to failure:
  - Smoking
  - Diabetes
  - Taking certain medications

Sources

Hervas, M. (2019, March 11). What Is Osseointegration? Retrieved October 07, 2020, from https://implantationdentalcenter.com/2019/03/11/what-is-osseointegration/

What is Osseointegration. (2020, January 23). Retrieved October 07, 2020, from https://dentagama.com/clinicpages/1250/what-is-osseointegration

D2 – What is peri-implantitis

- Analogous to gingivitis progression
  - Gingivitis → Periodontitis
  - Peri-implant mucositis → Peri-implantitis

- Peri-implant mucositis
  - "a disease in which the presence of inflammation is confined to the soft tissues surrounding a dental implant with no signs of loss of supporting bone following initial bone remodeling during healing"
  - inflammation, bleeding on probing, no bone loss

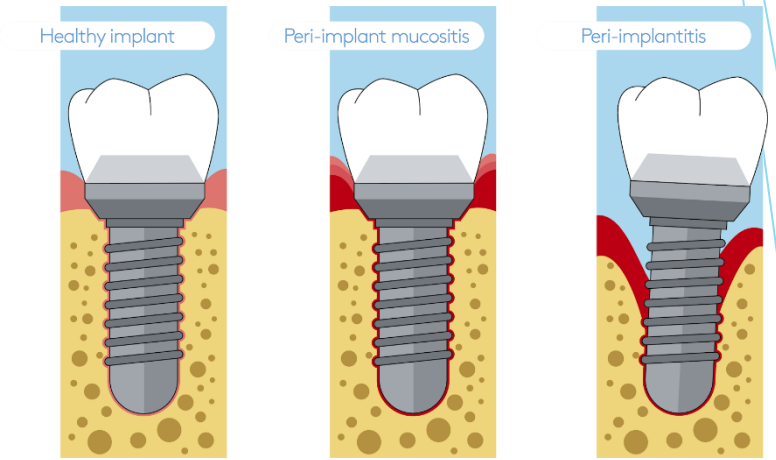
- Peri-implantitis
  - "an inflammatory process around an implant, which includes both soft tissue inflammation and progressive loss of supporting bone beyond biological bone remodeling"
  - inflammation, bleeding on probing, bone loss present

Peri-implantitis Cont.

- General Risk Factors
  - poor oral hygiene
  - periodontal disease
  - smoking
  - Diabetes
- Local Risk Factors
  - excess cement
  - lack of attached soft tissue
  - ledges on crown
  - submucosal restoration
- Etiology
  - Biofilm formation
  - Natural teeth = protective supracrestal gingival fibers → separates inflammation from bone
  - Dental implant = lacks protective supracrestal fibers → more susceptible to bone loss

Peri-implantitis Cont.

- Treatment
  - Peri-implant mucositis = non-surgical periodontal therapy
  - Peri-implantitis = surgical periodontal therapy



References
1. Rosen. 2013. Academy Report: Peri-Implant Mucositis and Peri-Implantitis: A Current Understanding of Their Diagnoses and Clinical Implications. Journal of Periodontology. 84(4):436-443

2.Peri-Implant Diseases. European Federation of Periodontology [Internet]. [Cited 2020, Oct 11]. Available from https://www.efp.org/dental-implants/peri-implant-diseases/

3. Peri-Implant Diseases. American Academy of Periodontology [Internet]. [Cited 2020, Oct 11]. Available from https://www.perio.org/consumer/peri-implant-disease
erence citations or other notes. Delete if not needed.

D3 PICO

- **Clinical Question:**
  - **How do Hall technique Stainless Steel Crowns compare to traditional Stainless Steel Crowns for treating these decayed teeth?**

PICO Format

P: Pediatric patients w/ decayed primary dentition

I: Hall technique SSC

C: Traditional (prepped) SSC

O: More effective* outcomes

*refers to arresting decay, preventing tooth loss, and pulpal disease

PICO Formatted Question

- In pediatric patients with decayed primary dentition, are SSCs more effective when delivered using the Hall technique or via traditional (prepped) means?

Clinical Bottom Line

- The Hall technique for placing SSCs can be a cost effective and less technique sensitive approach to managing carious molars in the primary dentition with similar clinical outcomes compared to the conventional method.

Search Background

- **Date(s) of Search: 9/21/2019**
- **Database(s) Used: PubMed**
- **Search Strategy/Keywords:** Stainless steel crowns, Hall technique, pediatric dentistry, deciduous teeth, dental caries/therapy

Search Background

- **MESH terms used: Stainless steel crowns, Hall technique, pediatric dentistry, dental caries**

Article 1 Introduction

- Citation: Elamin, Fadil, et al. “A Randomized Clinical Trial Comparing Hall vs Conventional Technique in Placing Preformed Metal Crowns from Sudan.” *PloS One*, Public Library of Science, 3 June 2019, https://www.ncbi.nlm.nih.gov/pubmed/31158253/.

- Study Design: Randomized Control Trial

- Study Purpose: Compare effectiveness of conventional stainless steel crowns to Hall technique in managing dental caries in the pediatric patient

Synopsis

- Methods
  - General practice in Sudan (6,000-6,500 pediatric patients/year)
  - Study conducted Feb 2015 – May 2019
  - Criteria = children 5-8 yo w/ no significant medical history and untreated, cavitated occlusal and/or interproximal caries extending into dentin
  - Sample size = 230 teeth
    - Hall Technique (HT) = 109 teeth in 86 patients
    - Conventional Technique (CT) = 103 teeth in 78 patients

Synopsis cont.

- Results
  - Survival Rate @ 24 months
    - CT = 94.1% | HT = 93.6%
  - Perio Health = no significant relationship between placement method
  - Occlusion = initial inc in HT patients, 3% @ 6 months, normal @ 12 months
- Conclusions
  - HT provides a cost effective, time efficient, less technique sensitive way to manage caries with similar clinical outcomes to CT
- Limitations
  - Lack of post-op radiographs to evaluate pulpal dx

Article 1 Selection

- Reason for selection/Application to patient
  - Study showed that HT can manage caries with similar clinical outcomes to CT
  - Provides cost effective alternative with reduced operator technique and patient anxiety

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

Article 2 Introduction

- Citation: BaniHani, Alaa, et al. “Outcomes of the Conventional and Biological Treatment Approaches for the Management of Caries in the Primary Dentition.” *International Journal of Paediatric Dentistry*, U.S. National Library of Medicine, Jan. 2018, https://www.ncbi.nlm.nih.gov/pubmed/28691235/.

- Study Design: Retrospective Cohort Study

- Study Purpose: Investigate the outcome of CT vs. HT as treatment for deep carious lesions in children

Synopsis

- Method
  - 2 UK specialist hospital settings
  - Study conducted 2006-2012
  - Sample size = 712 primary teeth in 246 children aged 4-9
    - CT = 324 teeth
    - HT = 388 teeth
- Results
  - Patients were re-evaluated, in which majority of both groups remained asymptomatic
    - CT = 95.3% (average follow-up @ 13 months)
    - HT = 95.8% (average follow-up @ 9 months)
- Conclusions
  - “Both the conventional and biological treatment approaches had similar final outcomes and were equally successful for management of carious lesions in the primary dentition”

Article 2 Selection

- Reason for selection
  - Study showed that HT can manage caries with similar clinical outcomes to CT

Levels of Evidence

- ☐ **1a** – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs)
- ☐ **1b** – Individual RCT
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Double click table to activate check-boxes

Article 3 Introduction

- Citation: Midani, Rama, et al. “Success Rates of Preformed Metal Crowns Placed with the Modified and Standard Hall Technique in a Paediatric Dentistry Setting.” *International Journal of Paediatric Dentistry*, U.S. National Library of Medicine, Sept. 2019, https://www.ncbi.nlm.nih.gov/pubmed/30888708.

- Study Design: Retrospective Cohort Study

- Study Purpose: “To restrospectively evaluate the clinical success and survival rates of preformed metal crowns placed on primary molars using the Hall Technique in a Pediatric Dentistry setting”

Synopsis

- Method
  - Study conducted 2011-2017 at the Pediatric Dentistry Department (Greifswald University, Germany)
  - Sample size = 295 primary teeth in 192 children aged 2-11
    - Data from 181 children w/ sufficient documentation for further analysis
- Results
  - Success rate @ follow-up (mean of 22 months) = 92.3%
    - 4 presented w/ minor failures (reversible pulpitis, secondary caries)
    - 10 presented w/ major failures (irreversible pulpitis or abscess)
- Conclusions
  - Survival rate and clinical efficiency of Hall crowns were high in a secondary care-based setting
- Limitations
  - Did not directly compare HT to CT

Article 3 Selection

- Reason for selection
  - Retrospectively showed clinical efficacy of HT to manage carious lesions in asymptomatic primary molars

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
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Strength of Recommendation Taxonomy (SORT)

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Double click table to activate check-boxes

Conclusions

- Hall Technique provides a cost-effective, less technique sensitive approach to manage carious molars in the primary dentition with similar clinical outcomes compared to conventional SSC technique
- The patient described provides a great opportunity to use the Hall Technique for the following reasons:
  - Gross decay of primary molars presented asymptomatically
  - Presented to a dental school
    - less operator technique and behavior management required
    - more time and cost-effective treatment approach
  - Requires extensive dental treatment
    - HT provides a less invasive approach, which could correlate to lower anxiety levels
    - Elamin et.al showed patients treated with HT had lower anxiety levels immediately post-op and at follow up appt.

Post-Tx Photos

Post-Tx Photos

Post-Tx Photos

Discussion Questions

- 1-2 slides
- List posted discussion questions
- Questions may also be from Group Leader