Caries Management Course
Module: Sealants and Restorative Approaches
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Module Objectives

• Sealants-Prevention and Managing Incipient Lesions

• Material Choices

• Alternative Techniques

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Sealants for Prevention

• Two most single effective methods for carious lesion formation:
  1. Fluoride
  2. Sealants

• Caries Reduction Potential - Resin Based Sealant
  – 76.3% (after four years)
  – 65% (after nine years with no reapplication after 5)
  – Retention ~70-76% (2.8 years)
GI versus Resin

• Isolation Problems
  – Glass ionomer sealants may better than resin based. Based entirely on margin staining
  – Both have similar retention after 24 months

Bond or No Bond

• Extra Step versus Improved Penetration

  • If considering a bonding agent:
    • Hydrophobic (Enamel Bond)-less degradation potential versus Hydrophilic (Dentin Bonding System)-better penetration

  • Focus on Correct Isolation

Threshold for Intervention

<table>
<thead>
<tr>
<th>Early Stage Lesion</th>
<th>Established Lesion</th>
<th>Severe Lesion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distinct Changes</td>
<td>Localized mineral breakdown</td>
<td>Dentin Caries</td>
</tr>
<tr>
<td>Wet or Dry distributed enamel breakdown</td>
<td>Dentin Caries</td>
<td></td>
</tr>
</tbody>
</table>

Non-invasive Caries Management

Minimally invasive Caries Management
Sealants over Carious Lesions

- Sealants reduce but do not eliminate bacterial levels in carious infected lesions

Sealant over Caries

- Clear Sealants are better suited for sealing over incipient lesions

Resin-Based Materials

Concern over Methacrylate-based material and secondary caries
Caries Management

• Definition:
  1. A comprehensive plan in primary prevention in higher caries risk children
  2. A comprehensive plan in restorative therapy and secondary prevention.

Caries Management

• Restorative Material Choices

• Alternative Techniques Versus Traditional

Caries Management

• Restorative Material Choices
  – Composites in the Primary Dentition can have an annual failure rate of ~4.2%
  – Composites have a high risk for secondary caries if no caries management plan is followed
Caries Management

• No single intervention alone can really manage the disease
  – High compliance family-implement diet, fluoride, oral hygiene changes → composite restorations
  – Low compliance (history of failed appts, etc) → SSCs or resin modified glass ionomers

Caries Management

• Alternative Techniques Versus Composites
  – Resin Infiltration
  – Sometimes due to behavior or practical reasons consider alternative techniques
  – Interim Therapeutic Restorations-resin modified glass ionomers
  – Hall Crown
  – Silver

Fluoride versus RI

• Incipient Lesions
  – High compliance family-implement diet, fluoride, oral hygiene changes
  – Low compliance (history of failed appts, etc) → Resin Infiltration may have benefits

  – Resin Infiltration (RI) Managing Non-cavitated Lesions

Hall Crown

images from dr. natasha varma
Hall Crown

ITR

- Interim Therapeutic Restoration
  - While addressing the ‘big’ picture of overall caries risk
  - Young, uncooperative
  - Especially if child lacks 2nd primary molars and has a few lesions
  - Holding Pattern
  - One or small two surface lesions

Silver

- Interim Therapeutic Restoration
  - Silver nitrate with fluoride varnish
    - Limited evidence on effectiveness
    - Silver Diamine Fluoride may be more effective than a traditional GI cement for ITR
  - Can cause huge black stain that can be mitigated with potassium iodine

Conclusion

- Sealants provide definitive caries prevention
- Clear Sealants ➔ non-cavitated lesions
- Material choice ➔ family compliance to enter a comprehensive plan
- Alternative approaches are appropriate due to behavior