Dental Issues at School

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Dr Bo

- University of Tennessee Health Sciences Center Dental School and Pediatric Dentistry Residency Memphis
- Millsaps College, Jackson MS
- Three daughters: Marley 12 – Bearden Middle, Emory 10 and Reed 7 – Sequoyah Elementary
- Recently celebrated 17th Anniversary with my beautiful wife Minette
Cavities

80 20 Rule: 80% of the cavities are in 20% of the children...

42% of children 2-11 have had cavities in their primary teeth

23% of children 2-11 currently have untreated cavities

In a school of 500 children, that’s 115 children with untreated cavities, leading to pain and missed school over a preventable disease process
Early Childhood Caries

- ECC is defined as the presence of one or more decayed teeth, missing teeth (from cavities), or filled tooth surfaces in any primary tooth in a child 6 years old or younger.

- ECC is a multifactorial disease process initiated by bacteria. This means that after food enters the body, the bacteria break down the carbohydrates, producing acids that cause mineral loss from teeth – a process that often results in cavities.
Cavities - simple

Plaque on your teeth harbors bacteria. The bad cavity causing kind. A child eats carbohydrates (any kind) and the bacteria breaks this down causing acid. This acid burns a hole in the tooth and viola – a cavity.
Cavity Prevention

- Brush 2x/day, floss, etc?
- Stay away from sodas! No more than 1/week and never to babies or toddlers
- Do not give toddlers juice - Milk and water only
- Only water at night. Even milk on teeth at night will likely result in cavities
- Candy Day: 1-2 pieces of candy on a previously decided upon day (Saturday?), brush afterwards and no more candy until the next candy day. This minimizes the constant begging for more and more candy
Human face is significant, both functionally and esthetically.

This role is secondary to the highly evolved and specialized functions of the face in vision, breathing, mastication, speech, smell, and hearing, among others.

Interruption of growth and development such as a maxillofacial injury, may produce deleterious alterations of the facial framework resulting in aesthetic and functional deficits.
During infancy and early childhood, rapid brain and ocular growth causes a significant increase in cranio-orbital dimensions.

- Provides for the characteristic appearance of the prominent forehead and orbits seen in infancy and early childhood.
- The maturing lower facial skeleton remains protected behind a prominent forehead.
Dentition

- Unerupted teeth tend to buttress fractures and prevent fracture displacement.
- As the permanent dentition erupts at about 11-13 years of age and growth continues into adolescence, the craniofacial skeleton becomes more like an adult.
Teeth Identification?
Dentoalveolar Trauma

- Slightly higher in socially and economically disadvantaged groups
- Also associated with substance abuse (alcohol and “street” drugs)
- Other high risk groups are those with seizure disorders, mental disorders, and congenital maxillofacial abnormalities
Etiology & Incidence

Pediatric Population:
- Primarily falls
- Child abuse
- 5% of all facial fractures
- Bimodal trend: ages 2-4 falls
- 8-10: bike accidents

Teenagers:
- Contact sports and playground activities
- 33% related to sporting accidents
- Child abuse
History & Physical Exam

Incident:
- Time of incident - The shorter the time between accident and treatment the better prognosis.
- Location of incident - If the accident occurred in dirty place prophylactic tetanus is indicated.

Nature of the incident:
- Direct force under the chin → condylar fracture – top of the jawbone
- Direct force to teeth → Tooth Fx, Root Fx, displacement of teeth

Neurologic Status: call parents asap
- Loss of consciousness
- Loss of control
- Headache
- Nausea & vomiting
Maxillofacial Examination

- Extraoral Soft Tissue:
  - Laceration; Abrasions; Contusions on the head and neck can be noted visually.
  - Any asymmetries including deviation in mouth opening.

- Intraoral Soft Tissue:
  - Carefully manipulate and handle traumatized tissues.
Maxillofacial Exam Cont.

- Jaws and Alveolar bone:
  - Sublingual ecchymosis in the floor of the mouth is pathognomonic for an underlying mandible fracture
  - Step defects, crepitus, malocclusion, and gingival lacerations all raise suspicion of possible underlying bony defects

- Teeth:
  - Preinjury occlusion
  - Displacement and mobility
  - Account for all fractured or missing teeth and restorations
  - Assume they were swallowed, aspirated, or lodged within adjacent structures until proven otherwise
  - Incomplete apical development increases the chances of pulp repair and revascularization.
  - As the tooth apex closes the chance of pulp repair decreases
Classification of Dentoalveolar Injuries

Ellis and Davey Classification:

I: Fracture within enamel
II: Fracture of enamel and dentin
III: Fracture involving the pulp
IV: Fractures involving the root
Injuries to Periodontal Tissues

- Concussion:
- Subluxation:
- Luxation, Dislocation, or Partial avulsion:
- Intrusion:
- Avulsion:
Concussion

An injury to the tooth-supporting structures without increased mobility or displacement of the tooth, but with pain to percussion.
Subluxation

An injury to the tooth supporting structures resulting in increased mobility, but without displacement of the tooth. Bleeding from the gingival sulcus confirms the diagnosis.
Luxation, Extrusion, Partial Avulsion

- Displacement of the tooth other than axially.
- Displacement is often accompanied by fracture of either the labial or the palatal/lingual alveolar bone.
- Lateral luxation injuries, similar to extrusion injuries, are characterized by partial or total separation of the periodontal ligament.
Intrusion

Displacement of the tooth into the alveolar bone. This injury is accompanied by fracture of the alveolar socket.
The tooth is completely displaced out of its socket. Clinically the socket is found empty or filled with coagulum.
Treatment

Preservation of damaged teeth depends on:

- Complexity of injury
- Age of the patient
- General dental condition
- Site of injury
- Wishes of the patient

Prognosis is influenced by:

- Open root apices
- Intact gingival tissue
- Absence of root fracture
- Periodontal-bone support
Injury to Primary Dent

- 70% involve maxillary central incisors
- Intrusion, lateral luxation and avulsion are the most common
- Intruded teeth normally re-erupt spontaneously
- Damage to developing permanent teeth by displaced tooth are a possibility

Treatment:
- Fractured, extruded or grossly displaced teeth are to be extracted
- Less displaced with no occlusal interference can be monitored
- Do not replace avulsed (lost) baby teeth
Injury to Permanent Dent

- Crown fracture
  - Dressing of exposed dentin, minimal pulpotomy and restoration of damaged part of the tooth
- Root fracture
  - Inevitable extraction
  - Treatment Saving the tooth by:
    - Semi-rigid splinting for a minimum of 8 weeks
    - Devitlaiztion - necessary Rooth Canal treatment
    - Orthodontic extrusion or crown lengthening
<table>
<thead>
<tr>
<th>TREATMENT OF AVULSED TEETH</th>
<th>&lt;2 HRS WITH OPEN APEX</th>
<th>&lt;2 HRS WITH CLOSED APEX</th>
<th>&gt;2 HRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment:</td>
<td></td>
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<tr>
<td>□ Replant immediately if possible</td>
<td>□ Store in Hanks’ BSS for about 30 min</td>
<td>□ Replant immediately if possible</td>
<td></td>
</tr>
<tr>
<td>□ Transport in Hank’s BSS or milk</td>
<td>□ Splint for 7 to 10 days</td>
<td>□ Transport in Hank’s BSS/milk</td>
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<tr>
<td>□ Present to nearest qualified facility</td>
<td>□ Perform endodontic cleaning and shaping of canal at time of splint removal</td>
<td>□ Check ABC’s</td>
<td></td>
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<tr>
<td>□ Check ABC’s</td>
<td>□ Fill canal with CaOH (6-12 months)</td>
<td>□ Bathe tooth in sodium hypochlorite for ~30 minutes vs manual debridement of the PDL</td>
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<tr>
<td>□ Store in Hank’s BSS for 30 minutes</td>
<td>□ Perform final gutta-percha obturation (~ 6-12 months)</td>
<td>□ Perform extraoral RCT</td>
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<tr>
<td>□ Transfer to a 1mg/20ml antibiotic bath for 5 min</td>
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<td>□ Bathe tooth in citric acid (~3 min)</td>
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<tr>
<td>□ Perform appropriate radiography</td>
<td></td>
<td>□ Bathe tooth in 1% stannous fluoride (~5 min)</td>
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<tr>
<td>□ Initiate local anesthesia</td>
<td></td>
<td>□ Transfer to a 1mg/20ml antibiotic bath for 5 min</td>
<td></td>
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<tr>
<td>□ Irrigate socket with saline solution</td>
<td></td>
<td>□ Perform appropriate radiography</td>
<td></td>
</tr>
<tr>
<td>□ Perform tetanus prophylaxis as needed</td>
<td></td>
<td>□ Irrigate socket with saline solution</td>
<td></td>
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<tr>
<td>□ Initiate antibiotic coverage</td>
<td></td>
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<tr>
<td>□ Replant tooth</td>
<td></td>
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<td>□ Splint for 7 to 10 days</td>
<td></td>
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<td></td>
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<tr>
<td>□ Perform apexification with CaOH in cases of pathosis</td>
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Management of Injuries

Loosened, laterally luxated and extruded teeth should be repositioned and splinted for 1-3 weeks by semi rigid splint:

- Acid-etch composite
- Arch bar
- Orthodontic wire
- Soft stainless-steel wire-loop,
- Vacuum formed splint

Avulsed teeth require immediate replantation and semi-rigid splinting for 1-3 weeks and prognosis is influenced by:

- stage of root development
- LENGTH OF TIME OUT OF THE MOUTH
- medium storage
- handling and splinting
Alveolar Fracture

A fracture of the alveolar process; may or may not involve the alveolar socket.

Teeth associated with alveolar fractures are characterized by mobility of the alveolar process; several teeth typically will move as a unit when mobility is checked. Occlusal interference is often present.
Send back to class?  
Call Mom?

- Traumatic Loose perm. Teeth?  Mom
- Deviated Jaw?  Mom
- Trauma and Vomiting?  Mom
- Loose baby teeth?  Mom? Probably…  Maybe
- Slightly swollen lip?  Class
- Fractured tooth w/ nerve visible?  Mom
- Avulsed perm tooth?  Shove it in and call Mom
Questions?