

Oral and Dental Manifestations of Child Maltreatment
WI CAN Educational Series 6/16/2023

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Objectives

Following this presentation, the attendees will:

- List some signs of dental neglect
- Understand the importance of considering medical mimics
- Describe the most common types of child abuse oral injuries
- Explain the significance and urgency of intraoral sentinel injuries

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Scope of the problem

- 30%-49% of hospitalized abused children had facial injuries (1992 Leavitt, *Arch Otolaryngol Head Neck Surg* and 1992, Willging, *Arch Otolaryngol Head Neck Surg*)
- Head and neck trauma are the most common injuries in children who intervene in domestic violence (1997, Christian, *Pediatrics*)
- 59% of 300 abused children had facial injuries; 11% had intraoral injuries (2000, Naidoo, *Child Abuse Negl*)

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Why and how?

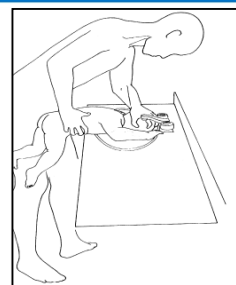
- Head is accessible to the adult and is the "talking, crying, feeding" part of the child that is targeted during abuse. "it represents the individual!"*
- Most abusive injuries to the face and mouth are caused by blunt trauma
- Consider non-abusive inflicted trauma (intubation, placement of an NG tube, suctioning, etc.)
- Bruises or intraoral injuries in precrawling infants are Sentinel Injuries and should have an urgent and thorough response
- Ear bruises in any age child are usually due to inflicted trauma

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Oral & dental physical abuse

- Facial injury – consider eyes, nasal, and oral trauma
- Lips-
 - Burns
 - Injury from a gag
 - Blunt trauma "busted lip"
- Teeth
- Frenula- Lingual or Labial
- Tongue- usually from child biting down during injury event
- Pharynx
 - Retropharyngeal trauma

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Facial
forced
immersion
burn

See 2004, Dana et al. Into Hot Water Head First-Distribution of Intentional and Unintentional Immersion Burns. *Pediatr Emerg Care*

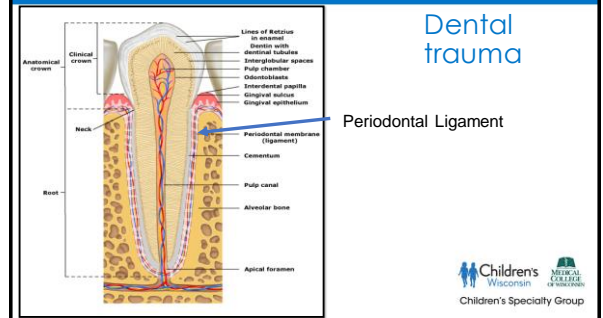
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Blunt trauma

- Most oral and dental abusive injuries are from blunt trauma
- Mechanisms-
 - Slap
 - Punch
 - "Ramming" injuries from something being forced into the mouth
 - Collateral injuries in the act of shaking/slamming an infant or toddler

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Dental trauma



Periodontal Ligament

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Dental trauma



- Tooth concussion-Periodontal ligament injury-tooth not mobile or displaced
- Tooth subluxation = misalignment - Periodontal ligament injury with mobility, often bleeding, tender to percussion. Tooth is not displaced.
- Tooth luxation = dislocation (extrusion)- Tooth displaced. Pulp may remain vital if displacement is less than 5 mm.
- Tooth intrusion- A severe type of luxation when the tooth is pushed down in the socket, often with fracture of the socket. Tooth may not be visible and appear to be avulsed.

Nowak AJ, Slayton RL. Trauma to primary teeth: Setting a steady management course for the office. *Contemporary Pediatrics*. November 2002;11:39.

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Abusive dental injuries

- Concussion to luxation from blunt trauma
- Dental chips, avulsion and fracture
- Forced dental extraction – 3 siblings (Carrotte PV. An unusual case of child abuse. *British Dental Journal* 1990;168(11):444-445)

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Dental trauma

- What to do? See Keels Pediatrics 2014;133:e466
- Any trauma can cause loss of vitality
- Tooth injury may only be visible weeks later with a color change
- Dental trauma, even to "baby" deciduous teeth can have life-long consequences
 - Root resorption
 - Loss of marginal bone
 - Alter future teeth eruptions
 - Cosmetic and functional disfigurement



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2008 Addresses, Endodontic Topics

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Lingual frenulum injuries and sublingual hematoma

- Consider possible mandible trauma
- Facial CT is the best study or panoramic X-ray (gold standard) for mandibular and dental injuries
- Mandibular fracture often at more than one site from blunt trauma or by grabbing by the jaw



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Tongue injuries

- Usually from the child biting the tongue
- Very young infant who fell from bed and had this injury
- Abuse suspected
- Other work up negative



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Pharyngeal trauma

- Blunt trauma
 - Retropharyngeal abscesses (deep infections of the throat) most common 6 mo to 6 y/o
 - Uncommon in infants < 6 mo due to lack of trauma and lack of lymphatic tissue in this location
 - Trauma to the pharynx can lead to life threatening infection because of connection to other neck structures and the chest (mediastinum)
 - Review of 24 published cases found 19/24 were from abuse (2007, Thevasagayam, et al. *Int J Pediatr Otorhinolaryngol*)
- Burns



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Sexual abuse

- Blunt trauma
 - Palatal petechiae- Fellatio Syndrome- petechiae at the junction of the hard and soft palates
 - Frenulum injuries- from attempts to silence or oral penetration
- Gags
- Other in context of assault
- Sexually Transmitted Infections

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Sexual abuse: palatal petechiae and contusions

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Oral HPV (venereal warts)

- Mode of transmission is controversial
 - Vertical (mother to child at child birth)- laryngeal papillomas can cause hoarseness
 - Horizontal (from sexual abuse or other routes)
- Consider immune deficiencies if oral lesions are present
- Conservative management- report all and test for other STIs
- Moderate management- Screen for other STIs and
 - Under age 5 years- Screen for sexual abuse concerns
 - Report all over age 5

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HIV Positive Patient with intraoral HPV



Red Book Online Visual Library. 2009. Image 688-07. Available at: <http://aaprebook.appublications.org/gv/visual>.

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Munchausen Syndrome by Proxy (Medical Child Abuse)

- Often can involve the mouth:
 - Induced intra-oral trauma to mimic bleeding such as coughing up blood or vomiting blood.
 - Suffocation of infants to induce an apparent life-threatening event (ALTE)
 - Gagging a child to produce emesis
 - Placing foreign bodies in the mouth to produce choking or gagging (actual CHW case)

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See 2003, Sheridan, *Child Abuse & Neglect*

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Dental neglect



- Defined as "willful failure" to obtain needed medical care including well-child care and treatment for diseases or medical problems.
- Excludes failure to obtain care due to poverty and lack of access
- Pattern of missed dental appointments
- Failure to follow through with recommended dental treatments
- Failure to seek appropriate care

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Oral-dental neglect

- Serious consequences even for "baby" teeth
- Pain, difficulty eating, communication problems, sleep disruption, poor school performance, teasing/exclusion by peers
- Long term
 - Disfigurement
 - Infection/surgery
 - Social
 - Chronic diseases
 - Other

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Stages of Dental Decay

- Initial white decalcification with enamel breakdown
- Intermediate brown lesions
- Late stage lesions
- Nursing bottle caries

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Severe Early Childhood Caries= Nursing Bottle Caries

- Causes are multifactorial including:
 - Young age- newly erupted dentition is not as protected by saliva
 - Presence of strep mutans
 - Ongoing presence of sugars (frequent and prolonged exposure such as being placed to nap/sleep with a bottle of sugary liquid; sucrose is the most cariogenic)
 - Exposure to acidic beverages such as sodas increase risk
 - Inadequate fluoride
 - Poor calcium intake
 - Inadequate dental care

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Mimics of abuse/neglect

- Conditions that predispose to fracture- facial fractures would be a very unusual presentation!
- Blunt trauma- accidental injury, bleeding disorders
- Burns - viral process, infection, accidental injury, phytophotodermatitis
- Accidental injury

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Benign Injuries in Infancy

- Birth injuries
- Superficial linear abrasions (scratches)
- Self-inflicted
 - Tongue bruising – possibly related to certain types of bottles with high suction
 - Lip bruising from sucking
 - Forearm sucking bruises
 - Sucking blisters

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Key Points

- Dental and oral health is highly correlated with overall health throughout the lifespan – work to reduce dental neglect!
- There are medical conditions that can be mistaken for oral dental abuse
- When oral injuries occur in a pre-cruising infant, child abuse should be strongly suspected (sentinel injury)

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