Oral and Dental Aspects of Child Abuse and Neglect: Clinical Report

CLINICAL REPORT Guidance for the Clinician in Rendering Pediatric Care



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Abstract

In all 50 states, the District of Columbia, and the Commonwealth of Puerto Rico, pediatricians, dental professionals, and other physicians are mandated to report suspected cases of abuse and neglect to social service or law enforcement agencies. The purpose of this clinical report is to review the oral aspects of abuse and dental neglect in children and the role of pediatricians, dental professionals, and other physicians in evaluating such conditions. This clinical report addresses recommendations on the evaluation of bite marks, as well as perioral and intraoral injuries, infections, and diseases that may raise suspicion for child abuse or neglect. Some physicians may have received less education pertaining to oral health, dental injury, and oral disease. These physicians may not detect the mouth and gum findings possibly related to abuse or neglect as readily as abuse injuries involving other areas of the body. Therefore, pediatricians, dental professionals, and other physicians are encouraged to collaborate to increase the prevention, detection, and treatment of these conditions in children.

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BACKGROUND

Child abuse and neglect affect at least 1 out of 7 children in the United States each year.1 Maltreatment incidents may have been higher than observed during and after the global severe acute respiratory syndrome coronavirus 2 pandemic because of factors such as increased family stressors, isolation away from community support systems, and underreporting.²

Children may be exposed to multiple kinds of maltreatment that manifest in the mouth. Abuse can include physical and sexual abuse and may be evidenced by bite marks, dental neglect, and medical child abuse (MCA). Bullying and the human trafficking of children also occur and can have serious long-term effects. Abuse and neglect may be the presenting problem, noticed during a physical examination, or children or adolescents may disclose information about these experiences. It is important for pediatricians, dental professionals, and other physicians to be alert to and knowledgeable about signs and symptoms of child abuse and neglect and to know how to respond. Because of varying resources within different communities, not all physician or dental professionals of a certain job specification may be available everywhere, and thus, job roles may sometimes overlap.

All pediatricians, dental professionals, and other physicians in the United States have a legal requirement to report suspected child abuse and neglect to child protection authorities, although the specific requirements and procedures vary among jurisdictions. Racial, ethnic, and economic disparities in the reporting of child maltreatment to authorities have long been recognized³ and have been under closer scrutiny in recent years. Children with disabilities are a vulnerable population at increased risk of child abuse and neglect, and therefore, special attention should be paid to reduce this risk in these children and youth.⁴ The Joint Commission now requires health care organizations to use written criteria to identify patients who may have experienced physical assault, sexual assault, sexual molestation, domestic abuse, or elder or child abuse and neglect.⁵ A recognized bias among health care professionals is the failure to report suspected abuse when the family

is of similar background to the professional.⁶ Recognition of implicit bias and its influence on diagnosing and reporting child maltreatment is also an important consideration.⁷⁻⁹

PHYSICAL ABUSE

According to the Fourth National Incidence Study of Child Abuse and Neglect, in 2006 (the most recent year evaluated) at least 323 000 US children experienced physical abuse.¹⁰ Identifying and reporting suspected abuse can be challenging for pediatricians, dental professionals, and other physicians but has the potential to interrupt the cycle of abuse, secure the child's safety, and in some cases, save the child's life.¹¹ Missed opportunities to recognize and report physical abuse remain a significant problem; in one study, ¹² 27.5% of abused infants had a previous minor but inflicted injury that had been recognized by a parent or physician but usually not reported to authorities. The majority of these "sentinel injuries" involved bruising to the face, forehead, or ear. The mnemonic TEN-4 (Torso, Ear, or Neck in children less than or equal to 4 years of age, and anywhere in an infant under 4 months of age) has been widely adopted to assist in identifying bruises concerning for abuse.¹³ An expanded mnemonic with improved sensitivity for identifying abusive bruise injuries has since been introduced: TEN-4-FACESp (Torso, Ear, Neck, Frenulum, Angle of jaw, Cheeks, Eyelids, Subconjunctivae in children younger than 4 years, bruising anywhere in infants younger than 5 months, or patterned bruising).¹⁴

Craniofacial, head, face, and neck injuries occur in more than half of child abuse cases. ^{12,15–18} All suspected individuals who have experienced abuse or neglect, including children in state custody or foster care, need to be examined carefully at some point during the evaluation for signs of oral trauma, caries, gingivitis, and other oral health problems. These conditions are more prevalent in children who are maltreated than in the general pediatric population.¹⁹

Because of their exposed location on the body and anatomic complexity, the head and face are more vulnerable to serious injury than are other body regions.²⁰ A review of 40 cases of child homicides resulting from family violence noted that 36 (90%) had orofacial injuries.²¹ Recent research has found that children younger than 4 years with orofacial (especially cheek, ear, jaw, and frenum) and torso bruising are at risk for having been physically abused and are at risk for future, more serious abuse.¹⁴ Of children up to age 5 years with oral injury who underwent skeletal imaging, 25% had occult fractures; 30% of 37 infants with oral injury who underwent neuroimaging had central nervous system injuries.²² Oral injuries may be inflicted with instruments such as eating utensils or a bottle during forced feedings, hands, fingers, scalding liquids, or caustic substances. Physical abuse may result in contusions; burns or lacerations of the tongue, lips, buccal mucosa, palate (soft and hard), gingiva, alveolar mucosa, or frenum; fractured, displaced, or avulsed teeth; or facial bone and jaw fractures. Naidoo²³ cited the lips as the most common site for inflicted oral injuries (54%) followed by the oral mucosa, teeth, gingiva, and tongue. Lacerations to the oral frena in premobile infants are often the result of physical abuse and are frequently associated with other findings of serious physical abuse.^{22,24} Trauma to the teeth may result in pulpal necrosis, leaving the teeth gray and discolored.²⁵ Gags applied to the mouth may result in bruises, lichenification, or scarring at the corners of the mouth. $^{\rm 26}$ $\,$ In some cases, serious injuries of the oral cavity, including posterior pharyngeal injuries and retropharyngeal abscesses, have been inflicted by caregivers who fabricate illness in a child²⁷ to simulate hemoptysis or other symptoms requiring medical care. All findings in cases in which there is reasonable suspicion of abuse or neglect, regardless of mechanism, need to be reported for further investigation. Unintentional or accidental injuries to the mouth are common and may be distinguished from abuse by judging whether the history (including the timing and mechanism of the injury) is consistent with the characteristics of the injury and the child's developmental capabilities. Multiple injuries, injuries in different stages of healing, or a discrepant history ought to arouse suspicion for abuse. In conjunction with reporting, consultation with or referral to a knowledgeable dentist or child abuse pediatrician may be helpful. The clinical report from the American Academy of Pediatrics (**AAP**) titled "The Evaluation of Suspected Child Physical Abuse" provides additional quidance."

SEXUAL ABUSE

The oral cavity is a frequent site of sexual abuse in children, and acquisition of sexually transmitted infections (STIs) via this route can occur.²⁸ Testing for STIs within the oral cavity may be considered when:

- The child gives a history of oral-genital contact;
- The child has experienced penetration or has evidence of recent or healed penetrative injury to the genitals, anus, or oropharynx;
- · The child has been abused by a stranger;
- The child has been abused by an assailant known to be infected with or at high risk for STIs;
- The child has a sibling, other relative, or household contact with an STI;
- The child lives in an area with a high rate of STIs in the community;
- The child has signs or symptoms of an STI (eg, vaginal discharge, genital itching or odor, urinary symptoms, or genital lesions);
- The child or the parent of a prepubertal child requests STI testing; and
- The child is unable to verbalize details of the assault.²⁹

Culture or nucleic acid amplification tests (**NAATs**) may be used to test for *Neisseria gonorrheae* and *Chlamydia trachomatis* infection. NAATs are preferred to culture by most clinicians because of their superior sensitivity. Only Clinical Laboratory Improvement Amendments-approved, US Food and Drug Administration-cleared NAAT assays should be used.²⁹ Consultation with an expert is recommended for positive STI test results in infants and prepubertal children, because vertical and nonsexual transmission of certain pathogens can occur (eg, persistence of perinatally acquired *Chlamydia*, postnatal HIV exposure through infected human milk, and others).^{30,31}

In one series, STIs were detected in 22.9% of adolescents evaluated for sexual abuse and in 11.4% of preadolescents.³² Oropharyngeal STIs are detected less frequently than anogenital infections; they commonly do not present with pain, discharge, erythema, or other visible signs of injury or infection.^{33,34} When an STI is confirmed in a child or adolescent being evaluated for sexual abuse, testing of other sites, including the oropharynx, is indicated regardless of what contact the child disclosed may be indicated. In one study, NAATs for oropharyngeal Chlamydia and gonorrhea were positive in 6% of adolescent patients, despite more than half of these patients providing no history of genital-oral contact.³⁴ Oral infection with Trichomonas vaginalis has never been described. Anogenital and oropharyngeal human papillomavirus infections may be transmitted sexually, vertically from birthing parent to infant during delivery, or horizontally through nonsexual contact from a child or caregiver's hand to the genitals or mouth.^{35,36} In the setting of sexual abuse, national practice guidelines from the AAP and Centers for Disease Control and Prevention support postexposure vaccination against human papillomavirus for children 9 years and older if they have not already started the vaccine series.33,37

Children who present acutely with a recent history of sexual abuse need to receive specialized forensic evidence collection for semen and other foreign materials resulting from the assault. Specialized hospitals and child protection clinics equipped with protocols and experienced personnel are best suited for collecting such specimens and maintaining a chain of evidence necessary for investigations. In many cases, oral swab specimens are collected irrespective of whether the child specifically discloses oral–genital contact. Typically, the buccal mucosa and tongue are swabbed with a sterile, cotton-tipped applicator; the swab can be air dried and packaged appropriately for laboratory analysis.

MEDICAL CHILD ABUSE

MCA, also known as "Munchausen syndrome by proxy" and "caregiver fabricated-illness," is a form of child maltreatment in which a caregiver

subjects a child to unnecessary and potentially harmful medical care because of the caregiver's exaggeration, falsification, or induction of an illness or medical condition.³⁸ These children are subjected to unnecessary medical interventions, diagnostic tests, repeated examinations, surgeries, and medications. There is no typical presentation of MCA, although commonly, the fabricated illness involves multiple organ systems. Apnea, seizures, feeding problems, bleeding, and rashes are frequently reported symptoms. One recent study found that gastrointestinal complaints in children who had experienced MCA led to 6 times more types of feeding complications compared with controls who were also being evaluated for gastrostomy tube placement. In this study, the majority of patients experienced resolution of their nonoral feeding issues after MCA intervention (ie, removal from potential offender).³⁹

MCA can also present with oral manifestations. One review described 4 cases of MCA involving the oral cavity in children ranging from 9 months to 6 years of age. 40 In one case, recurrent mucosal bleeding and ulcerations were initially treated as Stevens Johnson syndrome and then cicatricial pemphigoid. This child died of poisoning and her oral manifestations were found to be caused by forced ingestion of toxic cleaning products. Another case presented with mucosal desquamation, drooling, and dysphagia and was eventually discovered to be caused by the caregiver placing an acid-based powder in the infant's food and toys. In all 4 cases, and in most reports in the literature, the perpetrator was the mother.41

Making a diagnosis of MCA can be difficult because of false information provided and/or induction of illness by the caregiver. Numerous medical professionals from various specialties and institutions are often involved in treating these patients. Diagnosing MCA may require a thorough review of all available medical records, which is often voluminous and can be time consuming, but is needed to discover concerning patterns and make the correct diagnosis.⁴²

BITE MARKS ON THE SKIN

Acute or healed bite marks on the skin may indicate abuse. Dentists trained as forensic odontologists can assist pediatricians, other dental professionals, and physicians in the detection and evaluation of bite marks related to physical and sexual abuse. ⁴³ Bite marks on the skin need to be suspected when ecchymoses, abrasions, or lacerations are found in an elliptical, horse-shoe-shaped, or ovoid pattern. ⁴³ Frequently, bite marks are found on the cheeks, back, sides, arms, buttocks, and genitalia. ⁴⁴ Bites produced by dogs and other carnivorous animals tend to tear flesh, whereas human bites compress flesh and can cause abrasions, contusions, and lacerations, but rarely avulsions of tissue. ⁴⁵ An intercanine distance (ie, the linear distance between the central point of the cuspid tips) measuring more than 3.0 cm is suspicious for an adult human bite. ⁴⁵

The pattern, size, contour, color, and evolution of a bite mark ideally can be evaluated by a forensic odontologist. If a specialist is unavailable, a child abuse pediatrician or pediatric dental professional experienced in identifying the patterns of child abuse injuries may examine and document the bite mark characteristics photographically with an identification tag and scale marker (eg, ruler) in the photograph. Further information is available on the American Board of Forensic Odontology (ABFO) Website to locate an expert and review the standards and guidelines for evaluating bite marks (www.abfo.org).

Bite marks found on human skin are challenging to interpret and differentiate because of similarities in dentition, distortion on skin, and time elapsed between the injury and the analysis.⁴³ Recent investigations have led to questions about the scientific validity and overapplication of forensic patterned evidence (bite mark analysis in particular) and its role in legal proceedings.⁴⁶ In response, the ABFO has adopted more conservative guidelines and no longer endorses positive identification of a suspect dentition to a bitemark.⁴⁶ More high-quality research is needed regarding bite mark analysis and its use in identifying potential perpetrators.

RUITYING

Because children with dental abnormalities are at increased risk for bullying. advocating for antibullying prevention programs in schools and other community settings by pediatricians, dental professionals, and other physicians may be beneficial. Thirty percent of children in the sixth through 10th grades report having been bullied and/or having bullied others.⁴⁷ Investigators from numerous countries and cultures have found that children with orofacial or dental abnormalities (including malocclusion) are frequently subjected to bullying, 48-50 and as a result, may suffer serious psychological consequences, including depression and suicidal ideation.^{51–53} Children who reported physical abuse, intimate partner violence, forced sex, and bullying were found to also report poor oral health.⁵⁴ Some children and adolescents are at high risk for being bullied for reasons besides orofacial abnormalities but are likely to have interactions with pediatricians or dentists. These include LGBTQ+ youth,⁵⁵ overweight children and adolescents,⁵⁶ children from racially minoritized groups,⁵⁷ and children with special health care needs.⁵⁸ There are antibullying prevention programs in schools and other community settings, as well as AAP resources including HealthyChildren. org, which offers caregivers educational resources on bullying among many other topics (https://healthychildren.org/English/safety-prevention/at-play/ Pages/Bullying-Its-Not-Ok.aspx).

HUMAN SEX TRAFFICKING

Human trafficking is a major global child health issue with substantial medical, psychological, and dental ramifications. The term "human trafficking" is often confused with "human smuggling"; however, human trafficking requires exploitation and does not require any physical transportation from one location to another to meet the definition.⁵⁹ This clinical report focuses on human sex trafficking, defined by the US Department of State as "a commercial sex act that is induced by force, fraud, or coercion, or in which the person induced to perform such an act has not attained 18 years of age."59 Precise numbers of children experiencing human or sex trafficking are difficult to obtain because of the complicated nature of these definitions, as well as underreporting and failure to recognize trafficking. The average age of children who are exploited for sex is 12 years, and children as young as 6 years are targeted.⁶⁰ Children who are or have been in foster care,⁶¹ are experiencing homelessness, identify as LGBTQ+,⁶² run away from home,⁶³ or are incarcerated in juvenile detention facilities64 are more likely to be traficked. Advances in technology, with the Internet and mobile devices, have facilitated perpetrators' ability to traffic children, often without requirement of the child to leave their own home.

Trafficking survivors often experience significant physical and sexual violence and may have observable injuries that are poorly explained. Survivors also are at higher risk for STIs, unsafe abortions, malnutrition, and untreated medical conditions. Posttraumatic stress disorder, anxiety, depression, suicidal ideation, self-harm, and substance use concerns are common to people who have experienced human trafficking.⁶⁴ Dental problems also rank high in this list: For women and adolescents who were trafficked in Europe, 58% reported tooth pain. 65 In the United States, more than half (54.3%) of women and adolescents who were trafficked reported dental problems, most commonly tooth loss (42.9%).66 Children who have experienced trafficking may present to dental offices for care. It has been reported that child trafficking survivors have twice the risk for dental problems, because they "often suffer from inadequate nutrition leading to retarded growth and poorly formed teeth, as well as dental caries, infections, and tooth loss."67 For older children, dental problems may trace back to their situation of origin, with limited access to or poor quality of care.

Trafficked children experience unique challenges in accessing medical and dental care. However, studies have shown that a large percentage of these youth do present for health care during the time they are being trafficked.⁶⁸ One study found that 26.5% of trafficked individuals were seen by a dentist during the time they were being trafficked, despite the fact that few were identified by clinicians.⁶⁹ Validated screening tools exist for health care settings but are still underutilized.⁷⁰

DENTAL NEGLECT

The American Academy of Pediatric Dentistry recognizes the influence of social factors on children's oral health including access to care, dental disease, behaviors, and oral health inequalities.71 Dental neglect, as defined by the American Academy of Pediatric Dentistry, is the "willful failure of parent or guardian, despite adequate access to care, to seek and follow through with treatment necessary to ensure a level of oral health essential for adequate function and freedom from pain and infection."72 Dental caries, periodontal diseases, and other oral conditions can lead to pain, infection, loss of function, and systemic infection if left untreated.72 These undesirable outcomes can adversely affect learning, communication, nutrition, and other activities necessary for normal growth and development.^{18,73} Dental neglect is the most frequent type of abuse seen by dentists and can be challenging to identify because it is chronic and insidious in nature.74,75 Some children who present for dental care have severe early childhood caries (formerly termed "infant bottle" or "nursing" caries). It is important to differentiate caregivers with adequate knowledge but willful failure to seek care from caregivers with barriers to care or those without knowledge or awareness of their child's need for dental care when determining the need to report such cases to child protective services. Pediatricians can play an important role in encouraging families to seek dental care and explaining benefits of completing needed dental treatment.⁷⁶ Several factors are considered necessary for the diagnosis of neglect⁷⁷:

- a child is harmed or at risk for harm because of lack of dental health care:
- the recommended dental care offers significant net benefit to the child;
- the anticipated benefit of the dental treatment is significantly greater than its morbidity, so parents would likely choose treatment over nontreatment;
- · access to health/dental care is available but not used; and
- the parent understands the dental advice given.

Failure to seek or obtain proper dental care may result from factors such as family isolation (physical or cultural), lack of finances, transportation difficulty, ignorance, or lack of perceived value of oral health.^{78–80} The point at which to consider a parent negligent and begin intervention occurs after the parent has been properly alerted by a pediatrician, dental professional, or other physician about the nature and extent of the child's condition, the specific treatment needed, and the mechanism of accessing that treatment.⁷⁸ Many families face challenges in accessing dental care or insurance for their children, and dental services may not be readily available. A child's social, emotional, and medical ability to undergo treatment, as well as cultural and religious differences, are important to consider.⁸⁰

Pediatricians, dental professionals, and other physicians can make a reasonable effort to help caregivers understand the explanation of the dental disease and its implications, the risks and benefits of dental treatment, and the use of the appropriate analgesic and anesthetic during the procedure to ensure the child's comfort. Assistance can be provided to the family in finding financial aid, transportation, or public facilities for needed services. If, despite these efforts, the parent fails to obtain therapy, the case warrants reporting to the appropriate child protective services agency.⁷⁸

CONCLUSIONS

Physical or sexual abuse may also result in oral or dental injuries or conditions. Pediatricians, dental professionals, and other physicians can document suspicious injuries, obtain laboratory evidence, photo documentation, and/or consult with experts when appropriate. The role of forensic bite mark analysis in legal proceedings has been brought into question because of lack of scientific validity, and as a result, the ABFO no longer endorses positive identification of a suspect dentition to a bitemark.

Dental neglect has been recognized for years to be a significant child health issue. Pediatricians, dental professionals, and other physicians can be alert to children and youth at particular risk for orofacial and dental neglect and its psychosocial consequences, such as LGBTQ+ youth who are gender

nonconforming, children who are overweight or obese, youth who are subjected to human trafficking, and children with special health care needs. 55-57

Medical and dental collaboration to prevent child maltreatment is important. The National Maternal and Child Oral Health Resource Center (Special Care | Module 3: Oral Health Supervision [mchoralhealth.org]) has resources for health care providers seeking information on this issue.⁸¹ Pediatric dentists and oral and maxillofacial surgeons, whose advanced education programs include a mandated child abuse curriculum, can provide valuable information and assistance to other health care providers about oral and dental aspects of child abuse and neglect. Physician members of multidisciplinary child abuse and neglect teams are encouraged to identify such dental providers in their communities to serve as consultants for these teams. In addition, physicians with experience or expertise in child abuse and tpdel neglect can make themselves available to dentists and dental organizations as consultants and educators. Such collaborative efforts will strengthen the ability to prevent and detect child abuse and neglect and enhance the ability to care for and protect children.

RECOMMENDATIONS

- Pediatricians, dental professionals, and other physicians must report injuries that are concerning for abuse or neglect to child protective services in accordance with local or state legal requirements. For more information about requirements in your state, contact the AAP state advocacy team (e-mail: stgov@aap.org).
- 2. In cases of sexual abuse that may involve the mouth, even without overt signs, pediatricians, dental professionals, and other physicians should know how to collect a history to elicit this information and to perform oral STI testing using appropriate tests to support forensic investigations. When sexual abuse is suspected or diagnosed in a child, the case needs to be reported to child protective services and/or law enforcement agencies for investigation.⁸²⁻⁸⁵ A multidisciplinary child abuse evaluation for the child and family is preferred when available.
- 3. Consultation with a child abuse pediatrician may be helpful when a pediatrician, dental professional, or other physician suspects MCA.
- 4. Because ABFO guidelines no longer endorse positive identification of a suspect dentition to a bitemark, pediatricians, dental professionals, and other physicians should consult with a forensic odontologist, pediatric dentist experienced in forensic issues, or child abuse pediatrician for help in evaluating bite marks. To locate an expert and review the standards and guidelines for evaluating bite marks, go to www.abfo.org.
- Because children with dental abnormalities are at increased risk for bullying, pediatricians, dental professionals, and other physicians should ask their patients about bullying and advocate for antibullying prevention programs in schools and other community settings.
- 6. Because children who have experienced human trafficking may visit the health care setting (dental and medical), pediatricians, dental professionals, and other physicians are encouraged to be aware of human trafficking screening tools and the risk factors for human trafficking to identify children at risk (of all genders) and to safely report and connect patients to resources. They can also advocate for antitrafficking efforts.
- 7. If parents fail to obtain necessary treatment of a child's oral or dental disease after barriers to care have been addressed, the case must be reported to the appropriate child protective services agency as concerning for dental neglect.
- Pediatricians, dental professionals, and other physicians are encouraged to consult with colleagues on challenging cases and collaborate with them to provide education and support toward improved identification of child maltreatment.
- Pediatricians, dental professionals, and other physicians should recognize and acknowledge implicit bias and reduce its influence on diagnosing and reporting child maltreatment.

RESOURCES: CHILD ABUSE AND NEGLECT

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ABBREVIATIONS

AAP: American Academy of Pediatrics. **ABFO:** American Board of Forensic Odontology. **MCA:** medical child abuse. **NAAT:** nucleic acid amplification test. **STI:** sexually transmitted infection.

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