



# Tea or Thrush?: A Case of Nonaccidental Oral Injury in an Infant

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## Abstract

A 5-month-old girl child patient presented to the emergency department for oral thrush and poor feeding but instead demonstrated concern for abuse after physical exam, as findings were consistent with oral injury. Correct identification of the oral findings as traumatic necessitated navigating language and cultural issues before the mechanism of injury and abuse determination could be made. Exploring the involvement of other caregivers was a crucial piece for investigation of the clinical scenario. The incidence of child abuse and pediatric oral injuries concerning for abuse were reviewed in this case report.

## Keywords

- ▶ burns
- ▶ child abuse
- ▶ child neglect
- ▶ oral injury

## Introduction

Child abuse remains an important cause of serious injury and death, with the data showing that the number of known deaths secondary to abuse has increased.<sup>1</sup> Current trends during the pandemic illustrate that reporting of child abuse has decreased, but incidence has remained the same.<sup>2</sup> Recognized cases of nonaccidental trauma in children account for 2 to 10% of visits to the emergency department<sup>3</sup> aided by interventions implemented to screen for potential victims during initial triage. However, the number of unidentified cases remains unknown.

Though obvious injuries are easily visualized, it is important to recognize abnormal occult injuries, particularly in nonverbal children such as infants. Oral trauma is sometimes difficult to visualize due to patient or parent uncooperativeness, or if the presenting complaint is unrelated and trauma is not immediately suspected. Even when identified as trauma, obtaining a history to explain the injuries can be problematic.

This case represented issues with initial identification as being recognized as trauma, dealing with potentially con-

flicting histories/no history, and success with multidisciplinary investigation to reveal an unusual cause for the trauma from an atypical source.

## Case Presentation

A 5-month-old girl child patient presented to the emergency department with her parents for concerns of fever and mouth sores for 2 days that they believed were thrush. The patient had been refusing to drink her formula from a bottle though she usually drank approximately 5 oz every 4 hours. She reportedly had a fever of 100.9 F the day prior, resolved with antipyretics. Review of systems was also positive for clear nasal discharge and blood-tinged saliva. She had no history of cough, rash, vomiting, diarrhea, or sick contacts. There was no recent travel. She had an appropriate number of wet diapers throughout the day. Her immunizations were up to date, but the family reported no longer having a primary care physician due to a change in the father's career. Notably, the patient's mother was exclusively Mandarin speaking, but father was communicating well in English. Interpreter

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services were therefore used to ensure information was communicated appropriately.

The patient was afebrile with normal vital signs for age. She was noted to be comfortable in her mother's arms, but would cry when she was picked up by her father and during the exam. Examination of the oropharynx revealed two symmetric areas of similarly patterned granulation tissue along the right and left posterior soft palate with central sparing. There were no associated ulcerations noted, and the uvula and posterior pharynx were normal. In addition, she had a healing sublingual frenulum laceration. Upon further consultation with the child protection team, lesions were determined to be burns. The remainder of the examination showed no injuries or findings of significance.

The parents were asked if they were able to identify what may have caused burns in the infant's mouth, but they provided inconsistent and frequently changing explanations. Per the parents, there were no other caregivers involved. It was decided to interview the parents separately, as the father was often speaking for the mother despite the presence of the Mandarin interpreter. The mother reported that perhaps the formula bottle was overheated.

Due to concern for nonaccidental trauma and intentional burn inflicted to the patient, the child protection team was consulted. The patient was admitted to the general pediatrics floor for observation due to refusal to take oral intake, and to ensure she was safe while the child protection team evaluated the patient and family. The parents were resistant to hospital admission but eventually agreed after a thorough and lengthy discussion.

Incidentally, during chart review, it was noted that the patient had two prior emergency department visits that month: one for lower extremity bruising, and the other one week later for an arm injury when the mother noted the patient had been refusing to move her right arm. There was a skeletal survey completed the day of evaluation, but this was not disclosed by the parents. The skeletal survey was read as negative.

On the first day of hospital admission, joint evaluation by the child protection team and trauma surgery the following day revealed 200 g of weight loss over the last 24 hours, as the patient's mother had refused administration of intravenous fluids despite the infant taking less than 2 oz in the same time period. Overall history and repeat examination were supportive of a traumatic oral event, and therefore, a full report was provided to the appropriate authorities for further investigation. The parents continued to insist that no injury had occurred and became more and more resistant to questioning, especially with translators. The patient was discharged with her mother after ensuring the infant was able to maintain appropriate oral intake the following day, with a scheduled appointment with the child protection team and a repeat skeletal survey in 2 weeks.

Law enforcement investigators later discovered that an additional caregiver—a grandmother—was in fact involved in the day-to-day activities of the child, but was not mentioned due to the parents not considering that she may have been responsible for the injury. The grandmother reported that

she had boiled water for tea in an electric kettle and stored it in an insulated carafe for use throughout the day as she did every day. She used that boiled water from the carafe to mix the infant's rice cereal (~2 hours later in the morning), which may have caused the palatal burns. Whether this could have been abusive or neglectful remains unknown. The same grandmother had been alone with the infant when she had temporarily lost the use of one arm several weeks prior.

Although the child protection team recognized that the girl had been a victim of physical abuse given her prior injuries, the oral findings were ultimately decided to be indeterminate for abuse, as it could not be proven whether the burns and frenulum tear were intentional or unintentional. However, there was a safety plan put in place given the risk of recurrence of nonaccidental trauma and subsequent risk of mortality.

## Discussion

In the United States, there were approximately 700,000 reported cases of child abuse and neglect and almost 2,000 deaths in 2019, with children less than 1 year of age making up 25 per 1,000 cases.<sup>1</sup> The actual numbers are recognized as being higher. Recognized nonaccidental trauma accounts for approximately 2 to 10% of emergency department visits<sup>3</sup> but may be missed. Children who return to their caregivers without intervention after a single instance of abuse have an 11 to almost 50% chance of recurring abuse.<sup>4,5</sup> Almost 28% of abused children have previous sentinel injuries,<sup>6</sup> and the risk of failure to recognize or act upon such injuries can be subsequent serious trauma or death.

Studies show that 3 to 11% of children who are evaluated for abuse in the emergency department present with oral injuries.<sup>6,7</sup> It has been hypothesized that "the oral cavity may be a central focus for physical abuse because of its significance in communication and nutrition."<sup>8</sup> Such injuries may be a result of force feeding and may involve fingers, hands, or utensils. In Dorfman's study, 44% of victims of oral injury sustained injuries to the lingual frenulum and 16% had posterior pharyngeal injuries.<sup>7</sup> Such injuries should raise high suspicion for nonaccidental trauma, particularly in nonambulatory infants.<sup>7,9</sup> Minor injuries in infants are an independent risk factor for recurring abuse within the same year.<sup>10,11</sup> This patient sustained both a sublingual frenulum tear as well as a palatal injury, consistent with a forceful assault that was unable to be reasonably explained by her parents. She was not ambulatory and there was no history of other caregivers. She had three emergency visits within 1 month, all with unexplained symptoms of trauma. Her oral injury could have been easily missed by an unseasoned health professional, potentially leading to life-threatening abuse.

One complication was a single dominant parent who spoke for the other. Cultural barriers are a common cause of miscommunication, despite overall increasing cultural awareness in health care settings and must be considered. Perhaps the most important lesson is that cultural competence is about more than using language translators. Like many other eastern cultures, in Chinese culture, it is common

to have a grandmother providing daily care to grandchildren so that both parents are free to work. Repeated questioning of caregivers who are actually unaware of what has been going on with their children at home is sometimes unproductive, although it may be helpful to specifically ask about the involvement of another relative.

Physicians and other health care providers should be cognizant of occult nonaccidental injuries and should elicit a thorough history to appropriately identify child abuse. This may be further complicated by language and cultural barriers and careful consideration should be made to interview all caregivers separately if there is suspicion for abuse, particularly in families where there is cultural emphasis placed on the role of a grandparent. It is imperative that children with oral injuries are identified and kept safe, by means of voluntary or involuntary hospital admission, to ensure appropriate and thorough evaluation by community investigators, translators, and medical child abuse experts.

#### Funding

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#### Conflict of Interest

None declared.

#### References

- 1 U.S. Department of Health & Human Services. Child Maltreatment 2019. Administration for children and families, administration on children, youth and families, children's bureau. Accessed January 14, 2021 at: <https://www.acf.hhs.gov/cb/report/child-maltreatment-2019>
- 2 Swedo E, Idaikkadar N, Leemis R, et al. Trends in U.S. emergency department visits related to suspected or confirmed child abuse and neglect among children and adolescents aged <18 years before and during the COVID-19 pandemic—United States, January 2019–September 2020. *MMWR Morb Mortal Wkly Rep* 2020; 69(49):1841–1847
- 3 Louwers ECFM, Affourtit MJ, Moll HA, de Koning HJ, Korfage IJ. Screening for child abuse at emergency departments: a systematic review. *Arch Dis Child* 2010;95(03):214–218
- 4 Connell CM, Vanderploeg JJ, Katz KH, Caron C, Saunders L, Tebes JK. Maltreatment following reunification: predictors of subsequent Child Protective Services contact after children return home. *Child Abuse Negl* 2009;33(04):218–228
- 5 Deans KJ, Thackeray J, Askegard-Giesmann JR, Earley E, Groner JI, Minneci PC. Mortality increases with recurrent episodes of non-accidental trauma in children. *J Trauma Acute Care Surg* 2013;75(01):161–165
- 6 Sheets LK, Leach ME, Koszewski JJ, Lessmeier AM, Nugent M, Simpson P. Sentinel injuries in infants evaluated for child physical abuse. *Pediatrics* 2013;131(04):701–707
- 7 Dorfman MV, Metz JB, Feldman KW, Farris R, Lindberg DMExSTRA Investigators. Oral injuries and occult harm in children evaluated for abuse. *Arch Dis Child* 2018;103(08):747–752
- 8 Thompson LA, Tavares M, Ferguson-Young D, Ogle O, Halpern LR. Violence and abuse: core competencies for identification and access to care. *Dent Clin North Am* 2013;57(02):281–299
- 9 Fisher-Owens SA, Lukefahr JL, Tate AR American Academy of Pediatrics, Section on Oral Health Committee on Child Abuse and Neglect American Academy of Pediatric Dentistry, Council on Clinical Affairs, Council on Scientific Affairs Ad Hoc Work Group on Child Abuse and Neglect. Oral and dental aspects of child abuse and neglect. *Pediatrics* 2017;140(02):e20171487
- 10 Deans KJ, Thackeray J, Groner JI, Cooper JN, Minneci PC. Risk factors for recurrent injuries in victims of suspected non-accidental trauma: a retrospective cohort study. *BMC Pediatr* 2014;14(217):217
- 11 Thackeray J, Minneci PC, Cooper JN, Groner JI, Deans KJ. Predictors of increasing injury severity across suspected recurrent episodes of non-accidental trauma: a retrospective cohort study. *BMC Pediatr* 2016;16(08):8