Cutaneous signs of child abuse

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Maltreatment of children is a major public health crisis, and it is estimated that each year more than 3 million children are victims of abuse. Safeguarding the welfare of children is a priority, and it is the moral and ethical responsibility of healthcare professionals to detect cases of abuse and intervene appropriately to prevent further harm. Clinicians are often challenged to differentiate signs of child abuse from skin conditions that mimic maltreatment. Because cutaneous injury represents the most recognizable and common form of abuse, dermatologists are often called upon to help distinguish signs of intentional injury from skin conditions that mimic maltreatment. However, few resources specific to dermatologic signs of abuse exist to aid in diagnosis. A review of the literature will provide an educational resource to assist dermatologists and other clinicians in differentiating cutaneous signs of child abuse, including physical and sexual abuse, from mimickers of inflicted injury. (J Am Acad Dermatol 2007;57:371-92.)

Learning objective: After completing this learning activity, participants should be able to distinguish signs of intentional injury from skin conditions that mimic maltreatment and understand the clinician's role in the diagnosis and reporting of cases of suspected child abuse.

Maltreatment of children has become a major public health crisis. Safeguarding the welfare of children is a priority, and it is the moral and ethical responsibility of healthcare professionals to detect cases of abuse and intervene appropriately to prevent further harm. In the United States in 2004, an estimated 3 million reports of child abuse were investigated by state and local Child Protective Services (CPS) agencies. Approximately 872,000 cases were eventually substantiated.[1] An estimated 2000 children die as a result of abuse each year, and the numbers are increasing.[2] Children who received an assessment for abuse increased 32.4% between 1990 and 2004.[1] Medical practitioners play a key role in the recognition of abuse and supply the vital evidence which assists CPS in substantiating intentional injury.

Although the detection of child maltreatment is critical, it is important to remember that findings which appear to result from abuse may be related to other causes. Clinicians are often challenged to differentiate findings attributable to child abuse from accidental injury, benign skin conditions, or other pathologic disorders with similar presentations. Familiarity with medical conditions and cultural practices that mimic child abuse, combined with a thorough medical and laboratory evaluation, can facilitate the appropriate diagnosis.

Although the detection of child abuse is of paramount importance, a misdiagnosis can also be traumatizing to the child, family, and those individuals suspected of abuse. Inaccurate diagnoses can be classified into two categories. False-positives represent children with noninflicted injuries or medical conditions who are incorrectly identified as being abused. In contrast, false-negatives represent abused children who are not reported to CPS. Significant damage can result from either misdiagnosis, with the latter having particularly serious repercussions. Up

Abbreviations used:

AAP:	American Academy of Pediatrics
CAPTA:	Child Abuse Prevention and Treatment Act
CPS:	Child Protective Services
EM:	erythema multiforme
HPV:	human papillomavirus
HSP:	Henoch–Schönlein purpura
HSV:	herpes simplex virus
ITP:	idiopathic thrombocytopenic purpura
STI:	sexually transmitted infection

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to 50% of children suffer recurrent maltreatment upon returning to an abusive home, which may result in severe injury or even death.[3] Therefore, it is essential for a clinician to be astute and able to correctly identity and capture child abuse while at the same time avoiding misdiagnosis—a goal that is achievable via improved diagnostic strategies and education.

Because cutaneous injury represents the most recognizable and common form of abuse,[4] dermatologists may be called upon to help distinguish signs of intentional injury from skin conditions that mimic maltreatment. However, few extensive resources specific to dermatologic signs of abuse exist to aid in diagnosis. A review of the literature will provide an educational resource to assist dermatologists and other clinicians in differentiating cutaneous signs of child abuse, including physical and sexual abuse, from mimickers of inflicted injury.

EPIDEMIOLOGY

Widespread medical interest in abuse was initiated by the introduction of the term "battered child syndrome" in 1962. Since then, recognition of the problem of child physical abuse has been increasing. Child abuse is defined by the Child Abuse Prevention and Treatment Act (CAPTA), originally enacted in 1974, as any recent act or failure to act by a caretaker resulting in death, serious physical or emotional harm, sexual abuse or exploitation, or imminent risk of serious harm to a child.[5]

A combination of individual, familial, and societal factors contribute to the risk of child maltreatment (Table I). Although children are victimized and not responsible for the harm inflicted upon them, certain children are more likely than others to be victims of child abuse (Table II). Characteristics include:

- *Young age*. About 71% of children who are abused are between the ages of 1 and 12.[6] Children under the age of 4 are at greatest risk of severe injury, and account for 79% of child maltreatment fatalities, with infants under 1 year accounting for 44% of deaths.[7]
- *A history of abuse*. An abused child has a 50% chance of experiencing recurrent abuse and a 10% chance of death if abuse is not detected at the initial presentation.[8]
- *Comorbid conditions*. Children with learning disabilities, conduct disorders,[9] chronic illnesses, mental retardation, or other handicaps are at increased risk of incurring abuse.[4] Prematurity may be a risk factor for child abuse.[10]

Table I. Factors leading to an increase risk of abuse by caretakers[3]*

Parents' expectations inconsistent with normal child development
Parents were abused or neglected themselves[11]
Family disorganization, dissolution, violence among members, and lack of external support
Stressors, such as parental substance abuse, mental illness, unemployment, and poverty
Young, single, nonbiological parents
Poor parent-child relationships and negative interactions
Poor parental impulse control[29]
Community violence

*Data taken from Peck and Priolo-Kapel,[3] Sirotnak and Krugman,[11] and Scales et al.[29]

The most common perpetrators of child abuse are, in descending order of frequency, fathers, mothers' boyfriends, female babysitters, and mothers. Parents are the perpetrators in 77% of child fatalities.[7] Biological parents are less likely to engage in severe abuse than parental substitutes, extended family members, or strangers.

Among children confirmed by CPS agencies as being maltreated, an estimated 61% experienced neglect, 19% were physically abused, 10% were sexually abused, and 5% were emotionally or psychologically abused.[7] Physical abuse is the most frequently reported form of child abuse, with skin being the most commonly injured organ system.[11] Many experts believe that sexual abuse is the most underreported form of child maltreatment because of the "victim secrecy" that so often characterizes these cases.[12] In addition to frequently experiencing feelings of shame, guilt, and embarrassment, children often fail to report sexual molestation because of the fear that such disclosure will lead to even more serious consequences.

HISTORY

The keys to detection of child abuse involve identifying a combination of historical inconsistencies, suspicious findings on physical examination, and social risk factors.[13] A comprehensive history, including medical history, trauma, and injury, is absolutely critical in determining the nature of cutaneous lesions.[11] If the child is verbal and the injuries are suspicious of child abuse, it is important to speak with the child away from the caregivers. Simple and age-appropriate language should be used to ask open-ended questions, such as "Tell me what happened to your arm?" Structuring the initial interview to answer the following questions will assist the