
Recognizing Child Abuse during Prolonged “Low Intensity” Armed Conflict: Are We Missing the Forest for the Trees?

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Abstract

Protecting children from injury and abuse requires mechanisms at both the familial and societal levels. Data from wealthy and stable societies suggest that situations of stress predispose children to abusive injury. While the direct effects of armed conflict are all too apparent, even low-intensity conflict has the potential to exacerbate stress in the family. Clinicians who treat children in settings of armed conflict should be familiar with the subtle signs of abusive injury and the proper methods of their diagnosis and management. Improving research and clinical care in this area may serve as a potential focus of cross-conflict cooperation (“Peace Through Health”).

MeSH Words: child abuse, conflict, war,

Introduction

Although the bulk of the recent literature on the diagnosis and management of child abuse derives from wealthy, stable nations, child abuse has been recognized in every culture and group in which it has been examined [1-6]. It occurs in times of peace and in times of conflict. In peacetime, medical practitioners focus on the social and family issues that are associated with child abuse, and in times of war, they direct most of their attention to the impact of the severely compromised social and societal structure on the welfare of the children. However, anecdotal evidence suggests a third area that has not been

well studied: low-intensity armed conflict as an accelerant of child abuse.

Abuse of children during peace and societal stability: Breakdown of protective familial resources

Case-control studies have identified several characteristics of both victims and perpetratorsthat predispose towards abuse [7]. Taken together, they indicate that when the emotional and coping resources of a caregiver are overwhelmed, the risk of child abuse

increases (Table 1). Victim characteristics include prematurity, perceived fussiness, and medical disabilities that require a higher-than-normal amount of care. Caretaker characteristics include drug use, lower socioeconomic status, young age, or decreased education and social support, which seem to reflect a decreased capacity to provide care.

<p>Victim-Related Risk Factors Formerly premature [8] Perceived as fussy Chronically ill or requiring increased medical attention [8] Speech, language or learning disabilities [9]</p> <p>Caretaker-Related Risk Factors Lower maternal age [9] Lower socioeconomic status [8] Unmarried [10] Depression [7] Alcohol use [7] Not biologically related [11] Prior abuse of caretaker [7]</p>

Table 1. Risk Factors for Abuse

Corollary models suggest that the strength of the caretaker-child bond is a major factor in fortifying the caretaker's coping resources. While the propensity of formerly premature infants to be victim of abuse could be explained either by their increased medical needs or to a failure of bonding, the substantially increased risk to children in households with unrelated adults even compared to those in single-parent homes seems to stress the importance of bonding [11].

In addition to factors intrinsic to the victims and the perpetrators, developmental periods that increase stress have been linked to increased reports of abuse. Data obtained from population-based research and from confessions by perpetrators suggest that nighttime crying, feeding issues and toilet training can all serve as triggers of inflicted injury [12-14].

Caution should be applied in associating these risk factors with socioeconomic status in clinical practice. Child abuse has been reported in every population in which it has been sought, and even minimal experience will reveal wealthy, educated and privileged families that abuse their children. Furthermore, in the absence of a gold

standard for the diagnosis of inflicted injury, epidemiologic studies are at risk of circular reasoning in the identification of such injuries in disadvantaged populations. Indeed, several studies have raised concerns that clinicians are more willing to consider abuse in certain disadvantaged populations [15, 16]. While the potential relationship between bonding, physical hardship, and abuse may be useful in implementing prevention strategies at the population level [17, 18], neither victim- nor perpetrator-related risk factors should be used as a basis to diagnose child abuse in any individual case.

There is evidence that child maltreatment can be prevented by supporting mothers and children who might be at risk, independent of investigation and prosecution. Several randomized, controlled trials of home visitation by nurses to single, poor, or young first-time mothers have demonstrated a range of improved outcomes, including fewer reports of abuse and neglect, fewer health-care encounters for injuries and poisonings, and fewer days of incarceration on long-term follow-up [17, 18].

Abuse of children during conflict: Breakdown of protective societal resources

Modern warfare kills and injures far more civilians than combatants, with civilians, in some estimates, accounting for 90% of the total casualties. In recent decades, sub-Saharan Africa has witnessed the most intense fighting worldwide, with 11 major wars involving half the continent's population [19]. Globally, armed conflict has killed more than two million children over the last decade. An estimated 6 million children or more have been permanently disabled or seriously injured, and one million orphaned or separated from their parents. Even following the resolution of an active conflict, children are frequently injured by unexploded ordnance and land mines; estimates run to eight to ten thousand such accidents yearly [20,21]. According to UNICEF, about 20 million children have been forced to flee their homes because of conflict and human rights abuses.

In many conflicts, children are being forced to become soldiers at alarming rates. At present, an estimated 250,000-300,000 children serve as soldiers around the world [22,23]. Most child

soldiers are male, aged 8-18 years. Unlike their adult counterparts, child soldiers are commonly engaged in anarchic civil wars. They are often given stimulants to improve their performance in battle [19], leading to addiction to drugs and alcohol [24]. Amnesty International and Human Rights Watch estimate that in Uganda alone, up to 100,000 children have been rounded up during village raids and forced to join the Lord's Resistance Army (LRA); promises of food or shelter has prompted many others to join "voluntarily".

Starvation and infection during war account for even more morbidity than traumatic injuries. Epidemics of gastrointestinal infections, such as cholera and dysentery, as well as other infectious diseases, such as meningitis and malaria, are common. Many of these diseases, especially the diarrhea-based ones, are a consequence of overcrowding in refugee camps. The problem is exacerbated by the frequent breakdown of routine childhood vaccination programs during war, resulting in a resurgence of normally controlled infectious diseases, such as measles [25-27]. Even those who survive may suffer from impaired growth and chronic malnutrition. In addition, while many boys in war-ravaged countries become child-soldiers, many girls are either raped or forced to become soldiers' "wives". This abuse is one of the factors associated with increased transmission of human immunodeficiency virus (HIV) in times of conflict [19, 27].

Even children who are not direct targets or victims in national or regional conflicts will be exposed to painful events. They may witness torture and killing, abductions and arrests, and experience disruptions in daily life and school routines. Children are also affected by the stress levels and the situation of the adults who care for them [28].

Many survivors of warfare – both those affected directly by violence and those who witness it – have psychiatric disorders [19, 24, 29]. Symptoms immediately following the trauma include regression, sleep disturbances, and nightmares. An inability to concentrate and problems with short-term memory are also common. In later life, post-traumatic stress disorder may manifest as poor impulse control, problems with affect and commitment, low

self-esteem, and pathological dissociation [30]. This is true even for low-intensity conflicts, such as that between the Israelis and Palestinians, where studies have found maladaptive behaviors and post-traumatic stress disorders in children [31].

Because all kinds of child abuse involve shame, guilt and social taboos, and there are no gold-standard diagnostic studies for abuse, reliable epidemiological data are difficult to obtain [10,32,33]. Although robust studies of the incidence of child abuse and neglect are unlikely to be performed during an ongoing conflict, there are many reasons to believe that war may increase rates of the kinds of abuse seen in all societies.

Well- designed, population- based epidemiological data support the proposition that inflicted injuries in children increase in the presence of stressors that act at the level of a community or region. A study of the effects of Hurricane Floyd in North Carolina showed a fivefold rise in the number of detected cases of inflicted traumatic brain injury (commonly referred to as "shaken baby syndrome") in the hardest hit areas [34]. No increase was noted in areas less affected or unaffected by the hurricane over the same time period. Rates returned to baseline six months after the disaster. Accordingly, substantiated and unsubstantiated reports of child abuse increased in the six months following Hurricane Hugo and the Loma Prieta earthquake in the affected counties, though not after Hurricane Andrew in Louisiana [35]. Reports of intentional injuries in children also increased considerably during the Intifada in 2000–2001, but it was unclear if this study included abusive injuries or only direct injuries as a result of military action [36].

Anecdotal experience of the authors (M.D.) with care providers serving patients in conflict areas suggests a serious escalation of child abuse during low-level conflict. This includes anecdotal reports of increased physical violence, sexual assault, and even incest. However, we know of no published research addressing this area of potential concern.

Recognizing subtle signs of abuse

Even in cases of serious physical abuse, clinical signs and symptoms can be very subtle [15].

Large, population-based studies revealed that the most common presenting complaints in children with inflicted traumatic brain injury are fussiness or sleepiness, vomiting, and respiratory distress [15, 37, 38]. However, these symptoms are nonspecific and far more likely to be associated with benign or atraumatic etiologies. The *sine qua non* of inflicted injury is a pattern of injury that cannot be accounted for by the given history and that would be unlikely to occur with normal handling or care. Certain patterns, described below, should always prompt a consideration of abuse in the differential diagnosis (Table 2).

Indications
Torn lingular frenulum or soft-palate bruising
Bruising in pre-cruisers less than 8 months of age
Bruising to the buttocks, cheeks or pinna
Posterior rib fractures
Metaphyseal fractures
Retinal hemorrhages
Serious injury from a short fall
Serious injury attributed to a young sibling
Patterned bruising or burn (loops, ligatures, gags, bite marks)
Genital injury

Table 2. Red Flags for Physical Abuse

Bruising: Although bruising itself is unlikely to cause serious morbidity in children, it can often be used as a marker of trauma, underlying injury, or a dangerous environment. Nearly all toddlers experience bruising in the course of normal activity. However, bruising is extremely uncommon in infants less than 8 months old who are not independently mobile [39]. Bruising to the buttocks, neck, abdomen, and the pinna of the ear are especially worrisome [40]. Pinna bruising associated with ipsilateral cerebral edema and retinal hemorrhages has been dubbed “tin ear syndrome” and results from inflicted injury directly to the head or ear. [41]. Despite common references suggesting that the appearance of a bruise can be used to determine the age of the injury, there is little evidence to support this practice; in fact, there is ample evidence to negate it [42,43]. Great caution should be used when suggesting that injuries of different ages are implied by bruises with different appearances [40, 41]. The pattern of the injury, however, may be significant in terms of etiology. Whipping injury will often be

characterized by parallel or “tram-track” rows of petechiae, outlining where the implement used caused lateral rupture of surface capillaries. Children who are bound may have ligature marks at the wrists or ankles, and children who are gagged may have marks at the corners of the mouth.

Fractures: Fractures are common in victims of physical abuse, but they are often difficult to detect without dedicated imaging [44, 45]. Both parents and physicians frequently miss the symptoms of long-bone fractures in very young infants [46]. In this age group, inflicted fractures of the metaphyses of the long bones may appear as either chip- or bucket-handle-shaped. These have been dubbed “classic metaphyseal fractures” to emphasize their specificity [47, 48], and their detection warrants thorough investigation for inflicted injury. While a spiral morphology is sometimes believed to raise the concern for abuse, neither spiral, transverse or oblique morphology is specific for inflicted or accidental mechanism [49, 50]. The ribs are the most common bones fractured in abuse after the skull [51]. Posterior rib fractures are extremely specific for abuse and, with the possible exception of metabolic bone disease in very low birth-weight infants always require thorough investigation. Even with imaging, occult rib fractures and metaphyseal lesions are commonly missed in the acute phase, and repeat skeletal survey at 10-14 days is often necessary to identify them.

Oral injuries: Perhaps because the mouth is the focus of both feeding and crying, the presence of oral injuries should be determined in every case of potential abuse. A torn lingular frenulum can occur when a bottle, finger, or spoon is shoved into an infant’s mouth, and it may be associated with soft palate petechiae or posterior pharyngeal laceration.

Brain injury: Brain injury is the most deadly type of abusive injury, and also can be the most difficult to assess clinically. The Glasgow Coma Scale and, indeed the entire neurological examination, are much less precise in infants and young children. Liberal criteria for obtaining head computed tomography (CT) scans have been shown to be reasonable in the setting of suspected abuse in this age group [52]. Although the pattern of the brain injury has some

utility in differentiating accident from abuse, the given history is of paramount importance. Children with severe brain injury and no history of trauma, a changing history, or a history of a short fall or trauma inflicted by a pre-verbal child should always be thoroughly evaluated for abuse [8]. Serial head circumference measurements and attention to the infant's fontanelle may offer clues to occult head injury in a child with non-specific symptoms, but they are insensitive for occult brain injury.

Sexual abuse: The value of the physical examination in the diagnosis of sexual abuse is overestimated both by parents and by many physicians. The fact that pregnant adolescents will commonly have normal hymenal anatomy proves that normal findings on physical examination cannot rule out even penetrating sexual activity [53, 54]. Furthermore, while abuse cannot be excluded by a normal examination in the setting of a suspicious history, neither can it be excluded by the absence of such a history [55]. Because there are few clinical signs considered indicative of sexual abuse, a properly obtained history is almost always the most important diagnostic tool in these cases [56]. Ideally, a video- and audio-recorded history obtained by an interviewer with special forensic training will provide maximum information, while minimizing the trauma of multiple interviews for the child. The complexity of obtaining a proper history from a child should not be underestimated. The interviewer should take as much time as necessary to establish rapport with the child, and to allow the child to give a history without using questions that are leading or developmentally inappropriate for his/her age.

Basic evaluation of abuse in children

Unlike almost every other diagnosis in medicine or pediatrics, the diagnosis of inflicted injuries in children can seldom rely on the offered history alone. Not only are symptoms of abuse nonspecific and variable, but the caretakers -- who normally function as the child's advocate -- may obstruct or mislead physicians. Sensitive screens for inflicted trauma must necessarily include a thorough physical examination and radiographic or laboratory testing.

Children below the age of 24 months who are suspected of being physically abused should

undergo a proper skeletal survey to assess for occult bony trauma [57]. Liberal criteria for obtaining neuroimaging scans should be applied in these children, especially infants [52]. In the absence of radiographic neurological injury, the likelihood of retinal hemorrhage is low [58]. We believe that strategies that reserve dedicated ophthalmologic examinations for children with positive findings on head computed tomography are more reasonable than strategies that determine the need for imaging on the basis of a finding of retinal hemorrhage. In children with abusive abdominal trauma, the clinical indications may be very subtle [59]. Although abdominal trauma is the second most common cause of death associated with abusive injury, it is likely that abusive abdominal injuries often go unrecognized [60]. Several authorities have recommended universal transaminase screening in children considered to be at risk of physical abuse [61, 62].

If sexual abuse is suspected, the child should be referred for expert examination, where available, if the findings are expected to be useful [63]. The other main consideration in these cases is sexually transmitted infection (STI). There are no data on potential sensitive or specific risk factors that necessitate STI testing [64], and the decision should be guided as much by patient or parental concern as by intuitive risk factors, such as those listed in Table 3. Victims of pubertal age should be tested for pregnancy and offered emergency contraception if desired [65].

Indications
Known STI or risk factors in perpetrator
STI in sibling or household contact
Vaginal discharge
Evidence of penetration or ejaculation
Lower abdominal pain, dysuria or frequency
Multiple assailants
Patient or parental concern

Table 3. Indications for Testing for Sexually Transmitted Infection (STI)

Healthcare providers should be familiar with local laws and the resources available to protect children. In areas of armed conflict, where traditional systems of security may be lacking and problems within the home are considered a "family matter," religious, extended-family, and other settings may provide safety for children. In many jurisdictions, caregivers have a legal duty

to report suspected cases of physical or sexual abuse.

Conflict and child abuse: Charting a course in the unknown

Current data seem to support a model wherein individual acts of child abuse are triggered by overextension of parenting resources combined with an insufficient ability of caregivers to cope.

War can further stress coping abilities and may be viewed, in a larger context, as the wholesale breakdown of the positive adaptive mechanisms of entire societies. On the basis of our anecdotal experience, we believe there is a pressing need for increased research to also assess the effects of low-intensity national/regional armed conflict on the incidence of child abuse and to quantify the related rates of inflicted injuries. Until then, it seems prudent that practitioners working in areas of conflict be particularly vigilant for signs/symptoms of abuse in children.

It is also possible that these efforts can be applied by practitioners in a proactive fashion, to obtain data, protect children, and potentially become involved in reducing tensions during conflict. Traditionally, medical intervention in times of conflict has focused on two areas: care for victims of the conflict and political activism [66]. Care for the victims is provided by organizations such as the Red Cross and Doctors Without Borders. Political activists address such issues as documentation of violence and protest against the use of certain weapons such as land mines. Though many lives have been saved through these interventions, there is no evidence that they impact the "disease" itself: the conflict. "Peace promotion" has been proposed as a third area for Peace Through Health programs. In this model, medical partnership and development proceeds across the lines of divide, targeting issues of human security, diplomacy, mediation, and conflict transformation [66]. Addressing child maltreatment on both sides could have direct and indirect benefits in these related areas.

We are devastated by the direct effects of war on the loss of young life and limb. We must wonder what other abuse occurs as an indirect consequence of conflict. Though societies may drift into and out of periods of war, affected individuals may carry their experiences

throughout their lives and revisit the curse of abusive injury on future generations.

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