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SYMPOSIUM: NONACCIDENTAL TRAUMA IN CHILDREN

Child Abuse and the Legal System

The Orthopaedic Surgeon's Role in Diagnosis

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Abstract

Background Orthopaedic surgeons have unique training and experience in diagnosis of fractures, both accidental and nonaccidental. That experience is valuable in identifying physical child abuse and in avoiding false accusations or convictions. Both aspects are important to the welfare of children and their families. The events that follow a report of child abuse are outside the training and experience of most orthopaedic surgeons.

Questions/purposes What process follows a report of suspected child abuse? What unexpected outcomes or results occur in this process? Are medical conclusions used in this process consistent with the state of our knowledge?

Methods The child abuse legal process is described as experienced by one orthopaedic surgeon. Examples of unexpected problems that occurred in cases that went to trial are described.

Conclusions Inappropriate outcomes can result from incomplete or incorrectly applied information. The input of the orthopaedic surgeon is often needed to provide the best information available to ensure that the best interests of the child and the family are protected. Working within a hospital team is the preferred method, but direct courtroom testimony is sometimes necessary.

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Introduction

Orthopaedic surgeons have a distinct role in the evaluation of suspected child abuse resulting from their understanding of injury mechanics and fracture patterns and their experience dealing with the multiple causes of fractures in young children. The orthopaedic surgeon (especially the pediatric orthopaedist) may often be the first physician to recognize signs of abuse and can help mobilize social services so the child can be protected. In many cases, this is a straightforward process in which the diagnosis is clear and the offenders are easily identified. On other occasions, the evidence of abuse is not clear. When a parent or caregiver is charged with child abuse, who decides the fate of the child and the parent?

Suspicion of child abuse triggers a series of events that can have severe consequences, including the separation of families, legal battles to determine custody of children who are suspected of being abused and their siblings, addition of someone's name to a registry of people accused of child abuse and possible loss of job secondary to this [6], and possible criminal actions against parents or caregivers. There are direct expenses of the legal defense, which can often take several months. Without a doubt, the emotional costs for the entire family are usually much greater. The accused individual can face the loss of a career [6], a spouse, and the breakup of the entire family. Even in cases that are eventually determined to not be the result of abuse, family separation can last 1 year or longer before conclusion of the legal process.

The expertise of the orthopaedic surgeon provides information in certain types of cases that aids in the most accurate possible diagnosis of whether true physical child abuse has occurred. Study of the mechanism of injury for fractures and identification of child abuse are taught in all

orthopaedic residencies. That training plus reading many hundreds of fracture radiographs, experience caring for families of all socioeconomic backgrounds, and taking care of children's fractures gives the general orthopaedist, and especially the pediatric orthopaedist, specialized knowledge about children's musculoskeletal injuries. No other specialty deals with musculoskeletal trauma and follows the patient through all stages of healing as the orthopaedist. Helping to identify which patients are at real risk of further injury and which are not is an important service. Yet a determination of physical abuse may be made with minimal input from the orthopaedic surgeon.

Increased awareness of child abuse has led to a dramatic increase in cases reported suspicious for all types of child abuse, by some estimates by a 20-fold increase [3]. This has been accompanied by an increase in the percentage of cases determined unfounded from 35% in 1975 to 65% in 1998 [3]. The determination that a report is "unfounded" can often only be made after what is often a traumatic and costly investigation.

The orthopaedic surgeon is sometimes asked to render an opinion on the method of causation of a fracture to help in clarifying whether the injury pattern suggests abuse.

In this article, I describe the process that occurs once child abuse is reported and address the following questions: What process follows a report of suspected child abuse? What unexpected outcomes or results occur in this process; that is, what can go wrong? Are medical conclusions used in this process consistent with the state of our knowledge; that is, what do we really know? What is the role of the orthopaedic surgeon?

The Procedure: What Happens When Child Abuse Is Reported?

By necessity, the report of child abuse is turned over to a governmental body that has the responsibility and authority to enforce decisions (eg, take custody of the child, incarceration, require medical testing or treatment, etc). This process is unfamiliar to all but a few orthopaedic surgeons who often reluctantly find themselves involved.

The sequence begins with a report of suspected abuse. Federal law requires states to establish child abuse hotlines capable of receiving and acting on allegations of child abuse [5]. The specifics of how abuse is defined and the definition of when reports must be called in vary from state to state. For example, in Illinois, the mandate to report child abuse is framed as requiring a hotline call when a professional has a "reasonable cause to believe a child known to them in their professional or official capacity may be an abused child or a neglected child" [10]. Ever since federal law first required child abuse reporting in 1974, physicians have been among those required to make reports. Failure to report child abuse may be a misdemeanor or a felony [5]. If child abuse is suspected, clearly action is required. The threshold for reporting is suspicion, not certainty, so situations will be reported in which the reporter is not completely convinced of the presence of abuse, but simply that abuse may have occurred. A call can be made for less than "reasonable cause" but is not mandated. Suspicion is raised when an injury is inconsistent with the history, the injury is unusual in a particular age group, or for a number of other reasons [15] such as failure to obtain followup care for injuries, repeated injuries in the same child or within a family, evidence of chronic malnourishment, "failure to thrive" despite medical intervention, repeated unexplained injuries or illnesses, suspicious electrical cord shaped bruises, unexplained burns, or other evidence of neglect.

One possibility is to call a "hotline," which will likely go immediately to a state or local child protective services agency like the Department of Children and Family Services (DCFS; called CYS or DHS in other states) and will bypass several steps described subsequently. DCFS will begin investigation into all calls made.

Many community hospitals have no expertise beyond the emergency room doctor's experience and will transfer any suspected child abuse to a larger hospital or children's hospital. Such transfer referrals may be made by inexperienced people and may contain inaccurate material or may leave information (such as negative radiographs, etc) at the first emergency room that might better allow early clarification of the injury.

Most large hospitals have some type of Child Protective Service (CPS) program or team that can help sort out some of the issues. This team will include social workers, nurses, and usually a pediatrician who can evaluate the many issues of childhood disease and who from experience can recognize many of the typical injuries that occur during childhood. There is rarely an orthopaedist, neurosurgeon, or urologist full-time on these teams. Although they may refer to their teams as "multidisciplinary," the other disciplines may be nursing, social work, child abuse pediatricians, but not usually a variety of medical disciplines. However, CPS teams will often make use of an orthopaedist as a consultant to help sort out and understand musculoskeletal injuries. The CPS team will often have relationships with DCFS and the police department who can provide investigators in some cases. These factors vary greatly between institutions. Our institution, an urban academic medical center, has a very well-developed system, which is still evolving and providing leadership in this field. The methods have changed and improved with experience. The role of the CPS team is to gather information for a preliminary determination. It does not substitute for a full factual investigation of

the circumstances in which an injury occurs if the proceedings move into court.

Often the hospital-based team can review the history, assess the injury, and determine that abuse is not present. If it cannot so easily be determined, then DCFS or an equivalent governmental organization should get involved and investigate further. DCFS can sometimes make a determination of "unfounded," but in many cases, they will take temporary protective custody of the child pending further investigation. Theoretically, this is based on the risk of likely further injury to the child. If court intervention is then sought, the time it takes to resolve even a case in which abuse is determined not to be present may be several months.

If custody is taken and not relinquished within 48 hours (in Illinois and a very short period in all states given constitutional requirements), the case must be referred to the state's attorney's office and the Guardian ad Litem, who is charged with looking out for the welfare of the child. Both of these parties may seek to take permanent custody of the child and possibly other siblings from the parents to avoid further abuse. The burden may fall to the parents to prove that they did not cause nonaccidental trauma to their own child. Working against the parents are the state's attorney, the Guardian ad Litem or child representative, child abuse experts who may be employees of the county, and all the resources at the disposal of the county government [16]. The parents are most often represented by the Office of the Public Defender or a court-appointed lawyer.

When custody of the child is taken by the state or local authorities, what happens? An effort may be made to place the children with a relative who does not reside with the parents and who agrees to not allow the parents to be alone with the children. If no extended family is available or deemed appropriate, then the children may be placed in nonrelative foster care. The quality of foster care is variable and not all children are placed in a safe environment. Children have been injured in foster care, some sustaining worse injuries than the original injury that caused the intervention [3]. In one case reviewed, a 2-year-old child with a minimally displaced midshaft humerus fracture sustained a 50% surface area scalding water injury while in foster care that put her in the burn intensive care unit for 6 weeks. State custody does not guarantee safety.

Custody of the child generally will not be returned to the family until a judge makes a ruling on the merits of the abuse or neglect allegations. Scheduling will make the process take a minimum of several months even in straightforward cases. Those months can be a large part of an infant's first year of life and a large percentage of any child's life.

The standard of evidence to continue removal of the child after a trial on the merits from parents is not "beyond a reasonable doubt" but "a preponderance of the evidence makes the allegations more likely true than not true." The evidence does need to be more than the "suspicion," which initiated the process but vastly less than the standard in criminal cases. Beyond the trial to determine if abuse has occurred and the disposition of the child, there may be criminal charges filed independently. Allegations of abuse have been determined to be unfounded in family court, but prosecution has proceeded in criminal court. Sanctions against licenses have been pursued after judgments of "unfounded."

The child abuse experts are pediatricians who take an interest in the child's welfare and advocacy. The American Board of Pediatrics has approved the subspecialty of "Child Abuse Pediatrics," including a board examination and specific training requirements. The child abuse specialty includes sexual abuse, burns, neglect, and psychologic in addition to physical abuse. The Certifying Examination Content Outline for Child Abuse Pediatrics has 10 pages on "musculoskeletal injuries" out of 98 pages, so there is a very large amount of material for the child abuse pediatrician to cover beyond musculoskeletal injury [1].

Whether a child abuse expert knows more about what produces childhood fractures than an orthopaedic surgeon is open to discussion. This may often not be correct and the participation of an orthopaedist may be needed. Without the participation of a physician who sees many musculoskeletal injuries and fractures, both accidental and nonaccidental, perspective may be lost and the parents' as well as the child's best interests put in jeopardy.

What Can Go Wrong?

I have been asked to render opinions in over 30 cases over the last 20 years about whether a fracture could have been produced by accident, often when another medical expert has opined that the injury could have only been produced as a result of child abuse. These were nonlife-threatening fractures with no neurologic injuries or long-term sequelae. In these cases, 95% of parents regained custody of their child or children. To the best of my knowledge, there have been no repeat injuries in any of these cases. In this experience, I have observed misdiagnosis and misinterpretation of available data.

Some examples are detailed subsequently.

Case 1 was a misdiagnosis of a jaw fracture. The line between the tongue and the soft palate was misdiagnosed as a mandible fracture. There was no radiology report reading of a jaw fracture in the chart. The otolaryngologist note stated that the panoramic xray (Panorex) was "normal" and the child received no treatment for a jaw fracture.

I reviewed the films with a dentist who confirmed no fracture was present. The state argued that "falling and hitting the chin on a rock was not enough force to cause a jaw (mandibular angle) fracture" and therefore this was a case of child abuse. The patient and four other children were taken from the mother by court order. I expected the case to be dropped once I pointed out that there was no injury, but the trial went ahead anyway several months later. I testified in court 13 months after custody was taken that there was no fracture. Only then were the children returned to the mother.

Case 2 was a misdiagnosis of multiple fractures. A 10 month old was found to have a subtle nondisplaced femur fracture identified on MRI while looking for infection. On skeletal survey, periosteal reaction was noted along both humeri and was read as representing two additional fractures; therefore, the patient was believed to have three unexplained fractures of different ages and that was highly suspicious for child abuse. The radiographs were reread the next day and the periosteal reaction was correctly recognized as "normal variant in a fast-growing child." However, DCFS custody had already been taken of the patient and her twin based on the initial incorrect interpretation of the radiographs. Nine months later, after the trial, the father was again allowed to be alone with his children unsupervised.

Case 3 was a failure to diagnose a toddler's fracture. A mother sought evaluation at a community hospital emergency room when her 20-month-old child would not put weight on her leg. Radiographs were normal. Twelve days later, when she returned to the emergency room for the same complaint, radiographs showed a periosteal reaction and a nondisplaced tibia fracture. Someone asserted that the mother must have broken the child's leg between the two visits. Knowledgeable people were not consulted and the mother went to jail for 1 year and she was a "convicted child abuser." Clearly the fracture was present on the first visit or the mother would not have brought the child into the emergency room. The radiographic appearance of the healing on the second visit was consistent with a 12-day-old injury. The lack of recognition of the nondisplaced tibia fracture in the toddler cost this mother 1 year of incarceration.

Often there is an actual fracture and someone renders an opinion that this could only happen in nonaccidental trauma. The fracture is usually not life-threatening and not associated with other injuries. Skeletal surveys, brain CT scans, and eye examinations are often obtained as part of the screening process for abuse, especially looking for shaken baby syndrome. Even when all of these are negative, it does not assure that the case will not go forward nor does the state have to explain exactly how the injury occurred or provide a motive. The following are examples of conclusions drawn from limited information and presumptions.

(1) Falls from low heights not being able to produce fractures. Case 4 was a 6-month-old infant presenting with a femur fracture. The 15-year-old mother states she fell asleep lying supine on a couch with her 6-month-old baby on her stomach. She woke up and found the baby on the floor. The state expert opined that a fall from that height was insufficient to produce such a femur fracture so the mother's explanation was deemed inadequate. She was criminally prosecuted for inflicting the injury. Although unusual, falls from furniture do produce injuries that are seen in emergency rooms and in the office. One study examined 115 fractures resulting from falls from beds or couches [8].
(2) Misidentification of common irregularities at the medial femoral condyle as fractures without subsequent evidence of fracture healing. Fractures go through a healing sequence that is predictable and consistent. When these items are incorrectly called fractures, then "multiple fractures" are diagnosed.
(3) The role of other caregivers and siblings. In many families, parents may both work, or there may be only one parent. Multiple caregivers may make determination of responsibility very difficult. The power of a sibling to produce injuries is underestimated. There have been several cases in which the older siblings could well have inflicted the injury when the parents have no explanation. Studies to prove or disprove the ability of siblings to produce such injuries are difficult to imagine other than observational reports.
(4) Why was a fracture not identified earlier? Parents are expected to recognize when a child is injured. Statements such as "The child would have been inconsolable for hours" or "the swelling would have been noticeable" are applied to minimally displaced fractures or older healing fractures. Often many observers handle a child and none identify the injury for days or not at all. Is this a conspiracy or were the signs subtle enough to be missed? Toddlers' fractures are often identified after a delay because the signs are subtle. Cannot the signs of injury be subtle in fractures in younger children as well? If a fracture is several weeks old, how is a parent going to be able to identify the exact time and circumstances that produced the injury? In some cases, patients presented to medical facilities but no fracture was identified.
(5) The importance of no history of injury. Does "I do not know" really mean "I am hiding something"? Parents often find that what they consider a truthful but embarrassing statement is interpreted as suspicious and criminal. Sometimes police have administered lie

detector tests and when the results are truthful, the police sign off on the case. The custody proceeding can still go forward. Logically, abuse is not the only alternative explanation when the parents cannot provide one, but a single injury and lack of a witnessed event have landed many families in court. Child abuse articles include as positive many cases of single injury and inadequate explanation, raising the question of false-positives inflating the estimates of child abuse.

What Do We Really Know? Sensitivity versus Specificity

In child abuse, there is one highly specific test. Flame-shaped retinal hemorrhages occur if the head is violently shaken back and forth. This is the reason children receive eye examinations when they are being evaluated for child abuse. If these findings are present, the head has been shaken and likely abused unless there is a history of a motor vehicle accident or falls from a considerable height or a history of seizures. After once being thought to be completely specific, it appears to be approximately 85% abuse and 15% other causes [4, 18]. It is not very sensitive because abused children are not necessarily shaken. If this were the only factor considered, many abused children would go undiagnosed. I have never reviewed a case with retinal hemorrhages.

Fractures are not usually very sensitive or specific. Most fractures occur accidentally with undoubtedly a small percentage inflicted nonaccidentally. The percentage of inflicted injuries goes up in fractures in preambulatory children, particularly young infants, but true accidents are the cause of most single fractures. Children who are not mobile are at the mercy of others to apply forces that can be great enough to produce a fracture. This can occur accidentally or nonaccidentally. Early records from the emergency room or admission contain history that is potentially unfiltered, but it may be incomplete because the parents do not think a particular event was important and forgot it or if they are pressed to find an explanation, they may come up with extraneous events. It is difficult to date a fracture less than 7 days old because callus does not show up before 7 to 10 days. However, the parents may be asked for a mechanism within the last 24 hours. When the parents or caregiver are inconsistent in their reports, then suspicion goes up. Also, the parents may be groping to fulfill the requests for information by authority figures.

"Spiral" fractures are a buzzword in child abuse literature. "Spiral" fractures are associated with twisting forces, but that does not mean that a person grabbed the leg and twisted it. All structures fail more easily if torsion is one of the forces applied to make it fail. Motor vehicle crashes and sports injuries produce countless examples of spiral fractures produced in witnessed and "accidental" situations [17]. Spiral fractures are neither sensitive nor specific for abuse.

Fractures that have a higher specificity for abuse are (1) multiple fractures in various stages of healing; and (2) rib fractures (10).

The first category encompasses severely and repeatedly battered children. In the severe cases, the fractures can be accompanied by visceral injuries, bruising, and head injuries. These are typically not difficult to diagnose and the perpetrators are usually identified quickly. However, how many fractures constitutes multiple? If two fractures are present, one old and healing and the other new, is that clear proof of intentional injury? Are minimally displaced fractures always identified and treated in the absence of child abuse?

The literature on rib fractures leans heavily toward abuse as the only etiology, but there is a natural bias to submit papers about child abuse and rib fractures and a lack of interest in doing screening for asymptomatic rib fractures in normal children or infants. The positive condition in most published studies is determined by the CPS and may have been positive because of the rib fractures in the absence of any other evidence. One study that states the predictive value of rib fractures is nearly 95% also states that for 29% of children judged to be abused, the rib fractures were the only manifestation of nonaccidental trauma but did not clarify how they established the diagnosis of abuse [2]. This sounds like a circular argument. Many reviews lament the variety of definitions of abuse used in different studies [9, 13].

Rib fractures in the posterior rib cage near the spine are said to be more suggestive of squeezing the rib cage against the spine and causing the fracture [7]. Does that mean lateral fractures are not suspicious? We would expect several ribs to break in a line with the right external force. Is this multiple fractures or one injury?

A review of the literature by Kemp et al. [13] concluded once major trauma was excluded, only a handful of fractures had a substantial probability of resulting from abuse: rib, 70%; humerus, 50%; femurs, 28% to 43%; and skull fractures, 30%. The 95% confidence range for the humerus was 6% to 94%, which seems like a wide range. These estimates are still probably high because of circular reasoning, but already none are absolutely clear indicators of abuse. The most common fracture pattern in both abuse and nonabuse was linear. They concluded that "No fracture on its own can distinguish an abusive from a non-abusive cause." They also noted that the number of high-quality research studies in this field is limited, and further prospective epidemiology is needed.

What Is the Role of the Orthopaedic Surgeon?

Start with a history and perform a physical examination. Be aware of the possibility of child abuse if the injuries are inconsistent. If there are inconsistencies, reexamine for evidence of other injuries and seek additional history if needed. Then assess the injuries against your knowledge and experience as well as the literature. Consider conditions such as osteogenesis imperfecta, rickets, and other systemic or metabolic conditions [12, 14].

The orthopaedic surgeon should work with the CPS team because CPS teams and DCFS investigators often have technical questions that we are better able to answer than are other specialists. Be consistent and explain the truth as we understand it. If one is certain about specific aspects, state that, but if the answer is unknown, state that. Do not give an opinion that cannot be supported.

Sometimes it is necessary for the orthopaedic surgeon to testify in court. Nothing in medical school or residency prepares the surgeon for this experience. Court is a hostile environment in which one or more sets of lawyers will try to portray you as ignorant, greedy, disrespectful of authority (CPS, state's attorney, DCFS, etc), arrogant, inconsistent, and dishonest. Indeed, it is assumed that you are a "hired gun" even if the services provided are pro bono. Every question has a purpose, and seeking contradictions is important to discrediting the value of the testimony. If the state demands a deposition beforehand, it is to prepare their arguments and witnesses to refute your testimony.

Child abuse cases in juvenile court are almost always bench trials, because there is no right of the parent or the child to a jury trial. That means the judge (not a jury) is the person making the final determination. The purpose of testimony is to explain to the judge in clear terms what the evidence shows, either that the injury was or was not the result of abuse. This is based on the facts of the case, your direct knowledge of the case if you are the treater, the medical records, your experience as an orthopaedic surgeon, and the medical literature. The orthopaedist's expertise in fracture diagnosis and treatment and treatment of children's injuries, both accidental and nonaccidental, is valuable to the courts in cases of physical abuse. It is not necessary to be an expert in all areas of child abuse to be helpful. The courts recognize the contributions of experts in other fields if the information is pertinent to the issues in the case. Ultimately it is the clarity, consistency, thoroughness, and common sense of the argument that help the judge rule on these serious matters.

Statements from previous trials may be introduced to try to impeach, or call into question, the opinion offered. Insist that the entire statement be quoted and not just an out-of-context phrase. An opinion based on facts, training, and principle will not change from case to case. There will be no difficulty defending a previous opinion if it is stated in its entirety, although partial excerpts may be introduced to try to catch the expert off guard. Be very precise in listening to and answering the questions.

Most of the times I have been to court, my opinion has been that an injury could have been produced accidentally. I usually cannot prove it was accidental and I so state when I am inevitably asked. Using examples of similar injuries in which accidental causes accounted for similar findings on radiographs is helpful. I state the information as I understand it to be. I often clarify for the court what the injuries really are in terms a layman can understand and why I have that opinion. I often show the judge the pertinent radiographic findings.

Discussion

The purpose of child abuse reporting is to stop the abuse and protect the child from further injury. To accomplish this task, procedures have been established to translate information into action. These procedures are unfamiliar to most orthopaedic surgeons. Articles on the legal procedures are uncommon in orthopaedic journals. Results of these procedures can be unexpected if information is incorrect or misinterpreted. The input of the orthopaedic surgeon can assist in the correct conclusion of the proceedings.

The literature on child abuse is limited in a number of ways. Research in child abuse suffers from a lack of clear definitions of abuse, different criteria to establish the positive condition, circular reasoning, and short followup. Privacy considerations, legal repercussions, and lack of experimental models make research in child abuse very difficult. Risks of long-term followup studies include the risk to the caregiver of revealing further abuse, which is a problem with Institutional Review Boards' consent procedures and honest responses. Does "blinding" responses violate reporting laws? This is a problem unique to this type of research, but as a result, the child abuse system makes key decisions without adequate scientific data. Most studies are based on major outcomes such as death, subdural hematomas, or femur fractures because these are conditions treated as inpatients and more records are available. Studies of other bone fractures are underrepresented, yet the data from the inpatient injuries are extrapolated. It is unknown how often accusations of physical child abuse are pursued inappropriately as a result of medical confusion.

Orthopaedic surgeons have unique training in injuries but little experience in child abuse-related legal procedures. Interest is usually in the subject matter rather than the process that uses the information. Orthopaedic surgeons

are often reluctant participants and the process will bypass their input by default. There are few accounts of this process readily available to the orthopaedist.

Rare events are more suspicious for abuse. These include rare fractures such as scapular body and "multiple fractures in various stages of healing," rib fractures, and vertebra fractures [2, 11]. More common isolated fractures of the femur, tibia, and femur occur frequently and are rarely diagnostic alone, according to most literature [9, 13]. Disputes on multiple fracture criteria are frequent. There is not much incentive to prove that 95% of forearm fractures are accidental. That fractures occur from falls off furniture seems obvious to most orthopaedic surgeons from experience.

Most fractures in young children heal well with no permanent defect. The critical question is "Which child is at risk for substantial further injury?" The diagnosis of fracture alone is not specific enough to identify abuse because there is so much overlap with accidental causation. In combination with other injuries, the diagnostic value changes.

The real research question for orthopaedic surgeons is: "What is the long-term prognosis of a child who presents with isolated rib (or long bone) fractures? Is there a 10% or 20% or 50% or 0% mortality or risk of permanent injury if left with the parents?" That is the real answer we want to know for each of these fractures. In one recent study of femur fractures under age 3, there were no incidences of subsequent or repeat abuse in the 127 patients, suggesting a fairly low risk of future injury for femur fractures [9]. Further studies are needed to define the risks of various fractures and situations.

If the risk is overestimated, more children are likely to be removed from their homes by the state. If the risk is underestimated, a child will still be exposed to harm from the abuser. Children and their families need the best information possible. Child abuse experts deal with a very wide variety of types of abuse, and it will take many years to gain the experience in fractures the general orthopaedist has by the time he or she takes the boards.

The orthopaedic surgeon plays an important part in many situations involving possible physical child abuse. If we are unavailable, the interests of our patients and their family may be damaged and lives may be changed forever. The thresholds for suspecting child abuse and for proving child abuse are different and should not be confused. Diligence is needed both to identify child abuse and to prevent institutional abuse when the system breaks down from overzealous interpretation of the facts. Early participation by the orthopaedic surgeon in the child abuse system may save time, anxiety, resources, keep families together, and allow for pursuit of more serious abuse and crimes. Working with a CPS team is usually preferred, but there may be situations in which a dissenting opinion is necessary. Taking on the responsibility of providing our expertise to this problem improves our society and is another way we care for the child's interests. Studies to help identify factors associated with child abuse are important to improving our ability to help abused children and protect families from unnecessary intrusions into their lives.

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