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Is the diagnosis of physical abuse changed when Child Protective Services consults a Child Abuse Pediatrics subspecialty group as a second opinion?

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ABSTRACT

Objectives: To characterize the changes regarding the diagnosis of physical abuse provided to Child Protective Services (CPS) when CPS asks a Child Abuse Pediatrics (CAP) specialty group for a second opinion and works in concert with that CAP group.
Methods: Subjects were reported to CPS for suspected physical abuse and were first evaluated by a physician without specialized training in Child Abuse Pediatrics (non-CAP physician). Subjects were then referred to the area's only Child Abuse Pediatrics (CAP physician) group, located in a large metropolitan pediatrics center in the United States, for further evaluation. The diagnoses regarding abuse provided by CAP physicians working in concert with CPS were compared to those provided to CPS by other physicians.
Results: Two hundred consecutive patients were included in the study. In 85 (42.5%) cases, non-CAP physicians did not provide a diagnosis regarding abuse, despite initiating the abuse report to CPS or being asked by CPS to evaluate the child for physical abuse. Of the remaining 115 cases, the diagnosis regarding abuse differed between non-CAP physicians and CAP physicians working in concert with CPS in 49 cases (42.6%; $\kappa = .14$; 95% CI, −.02, .29). In 40 of the 49 cases (81.6%), CAP assessments indicated less concern for abuse when compared to non-CAP assessments. Differences in diagnosis were three times more likely in children from a nonurban location (OR 3.24; 95% CI, 1.01, 11.36).
Conclusions: In many cases of possible child physical abuse, non-CAP providers do not provide CPS with a diagnosis regarding abuse despite initiating the abuse investigation or being consulted by CPS for an abuse evaluation. CPS consultation with a CAP specialty group as a second opinion, along with continued information exchange and team collaboration, frequently results in a different diagnosis regarding abuse. Non-CAP providers may not have time, resources, or expertise to provide CPS with appropriate abuse evaluations in all cases.
Practice implications: Though non-CAP providers may appropriately evaluate many cases of physical abuse, the diagnosis regarding abuse provided to CPS may be changed in some cases when CAP physicians are consulted and actively collaborate with CPS investigators. Availability of Child Abuse Pediatrics subspecialty services to investigators is warranted.

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Introduction

Child abuse is a common condition, occurring in approximately 11/1000 children in the United States annually (Department of Health and Human Services, Administration on Children, Youth and Families, 2008). Primary care providers and other physicians without special expertise in child abuse may appropriately evaluate many cases; however, other cases may be more challenging, time consuming, or complex. In these instances, special expertise in and dedication to child abuse may be beneficial. In these cases, a Child Abuse Pediatrician may provide the needed expertise and availability to ensure the best possible outcome for both the child and the family involved in the investigation.

Child Abuse Pediatrics (CAP) is an emerging subspecialty. The American Board of Medical Specialties approved the CAP application for subspecialty status in 2006, and the first subspecialty certification exam will occur in 2009 (American Board of Medical Subspecialties, 2008). Evaluating complicated cases of possible abuse frequently requires an understanding of important and emerging scientific knowledge base of Child Abuse Pediatrics. Studies have addressed the importance of the history provided by caregivers (Hettler & Greenes, 2003), biomechanical analysis of fracture morphology (Pierce, Bertucci, Vogeley, & Moreland, 2004), mechanical and physiological analysis of head injury (Duhaime et al., 1987; Prange, Coats, Duhaime, & Margulies, 2003; Raghupathi, Mehr, Helfaer, & Margulies, 2004) and scientific evidence regarding bruises and burns (Allasio & Fischer, 2005; Committee on Child Abuse and Neglect, American Academy of Pediatrics, 2002; Daria et al., 2004; Drago, 2005; Dunstan, Guildea, Kontos, Kemp, & Sibert, 2002; Feldman, 1992; Maguire, Mann, Sibert, & Kemp, 2005a, 2005b; Maguire, Mann, Sibert, & Kemp, 2005b; Mathew, Ramamohan, & Bennet (1998); Moritz & Henriques, 1947; Spiller et al., 2003; Sugar, Taylor, & Feldman, 1999). These data have increased the ability of physicians to accurately determine the likelihood of abuse in a scientific manner. It is not yet known what, if any, effect Child Abuse Pediatricians with knowledge in these areas may have on investigations conducted by Child Protective Services (CPS).

In the United States, CPS conducts investigations involving alleged child physical abuse. Many of these cases involve medical evaluations and resulting diagnoses regarding abuse. This information may be critical in determining the outcome of CPS abuse investigations. A major function of the CAP subspecialty is to provide Child Protective Services (CPS) with information regarding the diagnosis of physical abuse in children with suspicious injuries; however, this service may not be available in all locations. In these instances, CPS must rely on physicians without specialized training in child abuse to assess the likelihood of abuse in an injured child, even when cases are difficult, complex or time-intensive. Previous studies have documented physicians' mistrust of CPS and lack of willingness to report some cases of child abuse (Flaherty, Jones, & Sege, 2004; Jones et al., 2008). Some physicians may withhold a specific diagnosis regarding abuse in an effort to decrease involvement in an abuse investigation and/or decrease likelihood of receiving a subpoena to testify regarding the diagnosis of abuse. Additionally, some physicians may feel uncomfortable making a diagnosis regarding abuse based solely on information available at the time of the medical evaluation or due to a lack of expertise. As such, physicians may not provide CPS with a diagnosis regarding abuse in some cases. Additionally, the added expertise of CAP physicians, coupled with continual availability to CPS that allows CAP physicians and CPS to work in concert over time on cases of possible physical abuse, may result in changed diagnoses regarding abuse in some cases.

Previous studies have documented challenges in accurately diagnosing physical abuse in younger children. Jenny found that cases of missed abusive head trauma were more common in younger children (Jenny, Hymel, Ritzen, Reinert, & Hay, 1999). In addition, many clinicians fail to consider developmental status of the child, which changes most rapidly and significantly during the first year of life, when assessing for abuse (Anderst, 2008).

Children in rural locations present a unique challenge when the possibility of child abuse arises. Previous research has shown that the diagnosis of abuse differs between dedicated children's hospitals, which are typically located in more populated areas, and general hospitals (Trokel, Waddimba, Griffith, & Sege, 2006). Clinicians providing care to children in rural locations may have less training in pediatrics (Goodman & the Committee on Pediatric Workforce, 2005) and potentially different relationships with families and communities than urban physicians (Shapiro & Longenecker, 2005). Additionally, CPS offices located in rural areas may cover a larger geographic region, have access to fewer physicians trained in pediatrics, and may conduct fewer physical abuse investigations. Obtaining medical assessments regarding abuse may be more difficult for CPS workers in these locations. It is unknown how these factors unique to the physicians in rural locations may affect the diagnoses regarding abuse provided to CPS.

We hypothesized that the diagnoses regarding abuse provided to CPS by non-CAP physicians would differ significantly from those provided by CAP physicians working in concert with CPS, and that, in many instances, non-CAP physicians would offer no information to CPS regarding the diagnosis of abuse. Additionally, we hypothesized that different diagnosis would be more common in children less than 1 year of age than in older children. Lastly, we hypothesized that different diagnoses would be more common in children from rural locations than in children from urban locations.

Methods

The authors abstracted information from a local database involving all patients referred by CPS to a CAP subspecialty group from 11/06 to 6/07. This time period was selected as the CAP clinic opened in mid-2006, and by late 2006, data collection processes were standardized to allow for appropriate information collection. From its inception, the CAP clinic was made available to and advertised to local and regional CPS offices and investigators. In the months following the end of the study period, advertisement of the clinic to the local medical community commenced. Knowledge of the CAP clinic

by other medical providers could result in non-CAP physicians withholding diagnoses in the anticipation that the CAP team would eventually evaluate the case.

The CAP subspecialty group consisted of 3 full-time child abuse pediatricians employed by the Department of Pediatrics at a large metropolitan medical school in the United States. All members of the CAP subspecialty group will be eligible for board certification in the subspecialty when the first qualifying exam is administered in 2009. Through a formal contractual agreement, the Forensic Assessment Center Network (FACN), the CAP subspecialty group is available to CPS workers for medical consultations for cases arising from 26 counties extending more than 200 miles from the CAP clinic. During the study period, CPS conducted approximately 11,750 physical abuse investigations in the region assigned to the CAP subspecialty group. No other formal system exists to provide medical information to CPS in potential physical abuse cases in the area covered by the CAP group. CPS workers, at their discretion, may bring potentially physically abused children to any physician for assessment. The CAP group is available as a first evaluation option, or as a second opinion, based on the discretion of CPS. In the geographic area included in the study, there is no contractual obligation for a physician to provide CPS with a diagnosis regarding abuse, with the only exception being the CAP group.

Study inclusion criteria were children between the ages of 0 and 18, referral to CPS for suspected physical abuse, an initial assessment for abuse by another physician without specialized training in Child Abuse Pediatrics (non-CAP physician), and a second assessment by the CAP team. Cases in which there was no diagnosis provided by the non-CAP physician, and the case was directly referred to the CAP group by other physicians at the same medical school, were excluded. These physicians may have withheld information regarding diagnosis of physical abuse in anticipation of the CAP group evaluation. Cases referred due to concern of neglect or other types of abuse were not considered in this study, and the diagnosis of neglect was not considered in this study.

For the cases in this study, reports of possible physical abuse of a child were made to CPS by either nonmedical personnel (schools, law enforcement, relatives) or non-CAP medical providers. If the report was made by a nonmedical professional, CPS then took the child to a non-CAP medical provider for an abuse evaluation. All non-CAP physicians either initiated a CPS investigation for suspected abuse or were consulted by CPS regarding the possibility of abuse. All non-CAP physician evaluations occurred in clinics, emergency departments, or inpatient settings, and included a physical exam and laboratory and/or radiographic tests as deemed necessary by the non-CAP physician. Documentation of the non-CAP evaluation was then obtained by CPS, including the diagnosis regarding abuse if the non-CAP physician made one. Following this evaluation, CPS consulted the CAP subspecialty group for a second assessment regarding the diagnosis of abuse.

In addition to verbally conferring with CPS, the CAP evaluation included review of the medical information from the previous non-CAP assessment, and at least one of the following: interview and evaluation of the child and interview of the caregivers, photograph review, radiograph review, and/or further testing such as additional radiographs or blood tests. CAP physicians were available for repeated case follow-up with CPS, if needed, and worked in concert with CPS during the investigation process, if further investigation, such as scene investigation and potential witness interview, were necessary. CAP physicians then provided CPS with an assessment that included a diagnosis regarding abuse. CAP physicians reviewed cases individually; however, in cases where the CAP physician felt the diagnosis was not straightforward, all CAP physicians reviewed the case, and the diagnosis of "abuse" was made only if all 3 CAP physicians agreed.

Consultation of the CAP group was at the discretion of CPS, and not all children with allegations of physical abuse in the community were referred to the CAP group. Common reasons for referral to CAP by CPS included: need for medical opinion regarding likelihood of abuse, mechanism(s) and timing of injury, and clarification of medical findings in the case.

At the time of initial CAP consultation, CPS workers provided a case data sheet with child demographics, case information, and specific questions that they wanted the CAP physician to address in the assessment. Data collected included the child's age, location of non-CAP evaluation (urban vs. rural), non-CAP diagnosis regarding abuse, type of injury, and CAP diagnosis regarding abuse. Previous non-CAP assessments from metropolitan areas with a population greater than 100,000 people were classified as urban. All others were classified as rural. There were no dedicated children's hospitals or facilities with significant dedicated pediatric care available in the rural locations that were included in this study.

Non-CAP diagnosis regarding abuse was classified into three categories: abuse, nonabuse, and no opinion. Cases were classified as "no opinion" when the non-CAP physician did not provide a diagnosis regarding abuse to CPS, despite initiating the CPS case or being consulted by CPS regarding possible physical abuse. CPS and CAP physicians jointly determined classification of cases by non-CAP physicians at the time of CAP consultation. CAP assistance in this matter was necessary only when CPS workers did not understand the medical documentation provided by non-CAP physicians. CAP diagnosis regarding abuse was classified as abuse or nonabuse. CAP physicians made the diagnosis of abuse when the preponderance of evidence supported the diagnosis of child abuse, based on the Texas Administrative Code definition (Texas Administrative Code, 2004). All other cases were classified as nonabuse, including those where it was not possible to determine if abuse had occurred. All data was collected at the time of CPS consultation on data collection sheets used locally for the statewide Forensic Assessment Center Network (FACN). This data was entered into a computerized database used for FACN statistics. Data for this study was abstracted from the local database by the authors.

Physical findings concerning for abuse were divided into five primary injury subtypes based on the main injury that resulted in referral: head injury, fracture, burn, bruising, and other. Injuries in the "other" subgroup were typically skin findings that could not be clearly classified as bruises or burns (for example, scars or blisters).

Cases for which the non-CAP physician provided a diagnosis regarding abuse were compared to CAP diagnoses in the same cases. Differences in diagnosis existed when CAP assessment of abuse differed from non-CAP assessment. When a difference