Nonaccidental Trauma in Children

Editorial Comment

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The childhood nonaccidental trauma syndrome describes a troubling family/social disorder with fascinating musculo-skeletal ramifications. The disorder was poorly recognized and understood until Kempe and colleagues at the University of Colorado published their landmark 1962 paper in the *Journal of the American Medical Association* entitled “The Battered Child Syndrome” [2]. Although perhaps less polite than current terminology, Kempe’s choice of title language brought worldwide recognition of the condition—a “tipping point” of sorts. Subsequent descriptions have included child abuse, nonaccidental trauma, as well as child and family maltreatment.

Historical review of childhood treatment in the preindustrial era includes circumstances where parents killed their children, sometimes for disciplinary reasons and also for cultural reasons (infanticide). The industrial revolution, with its need for cheap labor, brought a new form of child maltreatment which remains in much of the third world yet today. The Society for the Prevention of Cruelty to Children (U.K.) was not established until the mid-1880s to crusade against these abuses, almost a half century later than the establishment of the Society for the Prevention of Cruelty to Animals (1824).

The medical reporting of child abuse typifies the halting, irregular evolution of understanding enlightenment that characterizes many discoveries in medicine and science.

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Fig. 1 Harish S. Hosalkar, MD, is shown.

Fig. 2 Dennis R. Wenger, MD, is shown.

In 1860 Ambroise Tardieu reported 32 cases of children with physical signs of typical abuse including “thickening of the blood on the surface of the brain and death” [3]. Strongly suggesting the possibility of inflicted injury, this obscure French report never received widespread medical recognition.

Kempe’s paper “The Battered Child Syndrome” [2] gives reference to Caffey’s 1946 paper entitled “Multiple Fractures in the Long Bones of Infants Suffering from Chronic Subdural Hematoma” (and reproduced in this volume as the Classic) [1]. Reading this early paper—after assimilating Kempe’s contemporary description—sends a shiver down one’s spine. Caffey, an academic pediatrician from Columbia University, reported six children who suffered from chronic subdural hematoma and observed 23 fractures and four contusions of long bones in the six patients. His paper includes a clear description of the pattern of children with subdural hematomas who were admitted to the hospital and then found to have long bone fractures. After discharge, some patients later had additional fractures. Caffey suggested that some of the long bone fractures might have been caused by the same traumatic force which caused the subdural hematoma, yet noted that 17 of the long bone fractures appeared weeks and even months after the first manifestation of the subdural hematoma. He further speculated that the long bone fractures might have occurred during a convulsive seizure related to the subdural hematoma, but noted that none of the long bone fractures appeared immediately following the convulsive seizure, and that the more severe fractures occurred in patients who had only mild seizures. Inflicted injury was not proposed. Caffey concluded that the presence of unexplained fractures in the long bones in children warrants investigation for subdural hematoma but did not propose that they were inflicted [1]. Such was the innocence of the era.

And so what a long way we have come, following Caffey’s classic paper. Following Kempe’s landmark paper and the work by Silverman and others, the Child Abuse Prevention Act of 1974 (USA) and the subsequent development of state reporting laws have added data that allow us to better understand the complexity of this disorder. This understanding includes recognition that child abuse is part

of the spectrum of family violence, including spousal abuse and other violent patterns. Thus child abuse is no longer considered a specific illness or syndrome, but instead a symptom of sociologic and cultural stress related to families and the raising of children.

This symposium includes important information regarding the pattern for musculoskeletal injury in abused children provided by authors who are considered expert in the field. All orthopaedic physicians, their coworkers, and office personnel must be aware of presenting patterns. Radiologists (particularly pediatric radiologists) can help the orthopaedic surgeon evaluate puzzling radiographic patterns. Child abuse evaluation teams in all major children’s hospitals and many large general hospitals can help to confirm the diagnosis in a suspected case, allowing safe adjudication and resolution of the family problems.

Heightened awareness of this condition provides confounding patterns including an increasing group of parents who find themselves suspected of child abuse with subsequent careful analysis that provides a ready explanation for their child’s injury. Such circumstances produce extreme frustration, both to the conscientious reporting physician as well as to the distressed family. The possibility of conditions such as occult osteogenesis imperfecta, “temporary brittle bone disease” (as described by Patterson) as well as rare orthopaedic disorders such as congenital pseudarthrosis of the tibia add to this complexity. The orthopaedic surgeon should not underestimate the value of his experience and wisdom in providing wise interpretive counsel to the child abuse evaluation team. The wisdom of Solomon is required to make the right call in every patient. It is hoped that this symposium will help in these judgments.

References

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