



D1 Medico-Legal Implications for Osteogenesis Imperfecta in Cases Involving Possible Child Abuse

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The goal of this poster presentation is to present to the forensic science community a review of the available literature concerning the identification of child physical abuse and the medico-legal implications concerning the brittle bone syndrome known as osteogenesis imperfecta.

An intricate aspect of forensic osteological investigations is the ability to differentiate skeletal trauma resulting from accidental and nonaccidental injuries. This ability becomes more important when confronted with cases involving potential child physical abuse. The failure to recognize skeletal trauma caused by child abuse and skeletal trauma resulting from accidents or congenital conditions can result in the compromise or obstruction of child protection. Erroneous interpretations as to the manner in which skeletal trauma occur could inhibit full assessment by non-medical advisers while reinforcing parental denial, thereby putting a child at risk of physical harm or even death (Lynch 1995). Conversely, skeletal trauma resulting from congenital conditions such as osteogenesis imperfecta, a brittle bone condition that primarily affects infants and young children, can and has been confused with nonaccidental injuries. Due to inaccurate diagnoses, the lives of both parent and child have been severely affected when confronting such situations (Paterson 1997).

The present poster presentation seeks to provide a comprehensive review of the available literature concerning past and current research involving the medico-legal implications of osteogenesis imperfecta when diagnosing children exhibiting unexplained fractures. In doing so, this poster presentation provides a brief historical account of the recognition and diagnosis of osteogenesis imperfecta and child physical abuse. Following is a description of the etiology of the disease and an account of the various fractures prevalent in young children and infants. Specifically, an overview of fracture patterns resulting from abuse, accidents, and osteogenesis imperfecta is presented. Four child abuse related cases (Interest of J.V., Lamberton v. State, Awkerman v. TriCounty Orthopedic Group, and Matter of Mathew D.) are also discussed in this poster presentation to examine the validity of arguments that suggest osteogenesis imperfecta can be confused with physical abuse.

The medico-legal implications of osteogenesis imperfecta, as argued in this presentation, relate to the attempt by abusers to avoid prosecution by using the osteogenesis imperfecta defense. It also relates to inadequate medical examination by physicians leading to misdiagnosis. A proper medical examination will always differentiate osteogenesis imperfecta from physical abuse. This researcher contends that there is no excuse for misdiagnosis of osteogenesis imperfecta in favor of child physical abuse. Moreover, this presentation serves as a starting point for future investigations providing research guidelines whereby better and more accurate diagnostic techniques for the osteological identification of osteogenesis imperfecta within a medico-legal context are possible.

In addition, this poster presentation seeks to make forensic anthropologists aware of the need for more involvement in cases where child physical abuse is suspected. According to Walker et al. (1997), this is an area that has received little attention from anthropologists. Yet, a forensic anthropologist can make a tremendous contribution. For specialists with little or no experience in human skeletal remains analysis, cases involving potential child physical abuse can prove to be challenging. The diagnosis of the battered child syndrome is very different when looking at radiographs or directly at bone. Radiographically invisible lesions are in many cases apparent when carefully conducting gross examination of bone (Walker et al. 1997). Furthermore, to the inexperienced eye, congenital conditions such as osteogenesis imperfecta can provide a source of confusion in determining whether skeletal lesions resulted from non-accidental injuries or from some other reason (Ojima et al. 1994; Gahagan and Rimsza 1991). In general, the goals of this poster presentation are to encourage continuous research and interest in this subject.

Osteogenesis Imperfecta, Brittle Bone, Child Abuse