

BOOK REVIEW

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Review of: *The Juvenile Skeleton in Forensic Abuse Investigations*

REFERENCE: Ross AH, Abel SM, editors. **The juvenile skeleton in forensic abuse investigations.** New York, NY: Humana Press, 2011, 205 pp.

This volume consists of 12 chapters covering a range of topics that arise with the analysis of child abuse. While it is regretful that such a volume is needed, those working in the field are all too aware that this is often a critical question when investigating the death of a child. For the forensic scientist, there is the added burden that these cases attract significant media attention both at the time of the body recovery and at a subsequent trial. Scrutiny of the forensic work is intense and must fully meet current legal standards of performance. This volume provides background information on the effects of abuse, particularly physical abuse and neglect, on the juvenile skeleton.

The early chapters of the book set the context in terms of the societal and environmental factors that are associated with child abuse and child fatalities, growth and development of the juvenile skeleton, and bone healing processes. The multiple uses of statistical references that differ in scope are rather confusing, and it would have been preferable for all these statistics on child abuse be encapsulated in a single introductory chapter to which others referred. Two of these chapters, those on the societal/environmental factors and on bone growth, provide a relatively standard and, at times, superficial view of the topics. The third (Ubelaker and Montaperto) gives a thorough review of bone repair and the various factors that affect timing and appends some of the more recent research findings.

The following sections cover first the examination and analysis of trauma in juvenile skeletons and then the evidence of neglect and malnutrition. The trauma section begins with a lengthy discussion (Heldrich) of the types of injuries that may occur during the birth process and the complicating medical conditions that may predispose infants and children to fractures. The following chapter (Abel) gets to the heart of the issue by describing nonaccidental fractures. This bone-by-bone presentation is extremely useful and includes discussion of the biomechanics that produce the injury. Likewise, the O'Neal and Schindell chapter on scene investigation provides a detailed overview of processes and principles, with an

eye to balancing the needs of law enforcement with the delicacy of the situation for grieving family members and first responders committed to saving lives. The trauma section concludes with a case presentation on Battered Baby Syndrome (Kimmerle and Chrostowski) that highlights the difficulty in successfully prosecuting these cases.

Child neglect includes a number of different aspects but may involve inadequate feeding or emotional or physical abuse that impairs the body's ability to absorb nutrients. The lengthy chapter (Cardoso and Magalhaes) discusses the complexity of nutrition, growth failure, skeletal development, and dental maturation. Two basic methods of assessing failure to grow are described, and the chapter provides an excellent foundation for understanding not only the methods but the research projects upon which they are based and the limitations because of the sample selection. This paper is followed by a case report (Ross) that assesses chronic malnutrition in an infant from skeletonized material. It notes the impact not only on bone length but also on macroscopic features and bone density. The papers on malnutrition conclude with a study of Chilean stature estimation for juveniles (Sutphin and Ross). Unfortunately, while providing a solid review of the differential growth patterns seen in other studies, the report does little to integrate the Chilean material with the existing body of data.

Finally, the last chapter (Cunningham and others) deals with the taphonomic impacts on juvenile bone. While the study itself is specific to the North Carolina piedmont, the photographs provide an excellent guide for distinguishing normal juvenile bone from changes because of burial, root etching, and weathering.

This collection of papers falls in the intersection between forensic anthropology and forensic pathology—espousing a holistic approach to child abuse investigations. The difficulty is that it does not provide a comprehensive view of either aspect or a seamless view of the continuum. The central papers within the volume provide valuable guidance and strong references upon which to base analysis and testimony. However, several papers appear to be studies designed for journal publication, and their integration into a cohesive volume is lacking. Furthermore, the book is an expensive investment given the depth of the work and its length.

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