Skeletal Surveys in Young, Injured Children: A Systematic Review

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ABSTRACT: Skeletal surveys (SSs) have been identified as a key component of the evaluation for suspected abuse in young children, but variability in SS utilization has been reported. Thus, we aimed to describe the utilization patterns, yield, and risks of obtaining SS in young children through a systematic literature review. We searched PubMed/MEDLINE and CINAHL databases for articles published between 1990 and 2016 on SS. We calculated study-specific percentages of SS utilization and detection of occult fractures and examined the likelihoods that patient characteristics predict SS utilization and detection of occult fractures. Data from 32 articles represents 64,983 children <60 months old. SS utilization was high (85%-100%) in studies of infants evaluated by a child protection team for suspected abuse and/or diagnosed with abuse except in one study of primarily non-pediatric hospitals. Greater variability in SS utilization was observed across studies that included all infants with specific injuries, such as femur fractures (0%–77%), significant head injury (51%–82%), and skull fractures (41%–86%). Minority children and children without private insurance were evaluated with SS more often than white children and children with private insurance despite lack of evidence to support this practice. Among children undergoing SS, occult fractures were frequently detected among infants with significant head injury (23%–34%) and long bone fractures (30%) but were less common in infants with skull fractures (1%–6%). These findings underscore the need for interventions to decrease disparities in SS utilization and standardize SS utilization in infants at high risk of having occult fractures.

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