

Influence of age and fall type on head injuries in infants and toddlers

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Age-based differences in fall type and neuroanatomy in infants and toddlers may affect clinical presentations and injury patterns.

OBJECTIVE: Our goal is to understand the influence of fall type and age on injuries to help guide clinical evaluation.

DESIGN/SETTING/PARTICIPANTS: Retrospectively, 285 children 0-48 months with accidental head injury from a fall and brain imaging between 2000 and 2006 were categorized by age (infant ≤ 1 year and toddler=1-4 years) and fall type: low (≤ 3 ft), intermediate (>3 and <10 ft), high height falls (≥ 10 ft) and stair falls.

OUTCOME MEASURES: Clinical manifestations were noted and head injuries separated into primary (bleeding) and secondary (hypoxia, edema). The influence of age and fall type on head injuries sustained was evaluated.

RESULTS: Injury patterns in children <4 years varied with age. Despite similar injury severity scores, infants sustained more skull fractures than toddlers (71% vs. 39%). Of children with skull fractures, 11% had no evidence of scalp/facial soft tissue swelling. Of the patients with primary intracranial injury, 30% had no skull fracture and 8% had neither skull fracture nor cranial soft tissue injury. Low height falls resulted in primary intracranial injury without soft tissue or skull injury in infants (6%) and toddlers (16%).

CONCLUSIONS: Within a given fall type, age-related differences in injuries exist between infants and toddlers. When interpreting a fall history, clinicians must consider the fall type and influence of age on resulting injury. For young children, intracranial injury is not always accompanied by external manifestations of their injury.

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