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Pattern of Skeletal Injuries in Physically Abused Children

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Objective: The aim of this study is to identify the frequency and patterns of skeletal injuries among victims of child abuse in Bahrain.

Design: Retrospective.

Setting: Child Protection Unit at Salmaniya Medical Complex.

Method: Child's characteristics, type of skeletal injuries, location, pattern, radiological findings, and associated other injuries of 36 children were reviewed. Data management and analysis was done using SPSS for Windows, version 18.

Result: Thirty-six children with skeletal injuries resulting from child physical abuse were seen from 1991 to 2009. Twenty-three (64%) were males and 13 (36%) were females; the mean age was 3.8 years. Twenty-three (64%) were ≤ 3 years old. Multiple fractures were documented in 19 (53%) children. Bone fracture types and frequency were as follow: 10 (28%) affecting the femur, 9 (25%) skull, 8 (22%) humerus, 6 (17%) rib, 4 (11%) radius, 4 (11%) ulna and 2 (6%) tibia. Other bones less frequently affected were mandible, nasal bone, vertebral, metatarsals, and calcaneus fractures. In addition, other injuries included slipped femoral epiphysis, large bilateral hematoma in vastus lateralis, and full thickness tendon Achilles tear.

Hundred percent of rib, ulnar, radial and tibial fractures were in children under one year old. In addition, 7 (78%) of skull fractures, 5 (62%) of humerus fractures, and 5 (50) of femur fractures were under one year old. Six (67%) skull fractures involved the parietal bones, 4 (44%) were linear, 3 (33%) crossed sutures line, and 4 (44%) were associated with suture diastases. Five (83%) rib fractures involved posterior ribs.

Conclusion: Most of the abusive fractures occurred in infants and toddlers and the commonest were femur, skull, humerus and rib fractures. The predominant findings supportive of child abuse were younger age, multiple fractures, and posterior rib fracture. Further research is needed to compare the pattern of childhood abusive fractures with fractures caused by accidental trauma, metabolic and chronic bone disorders.

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