

Long bone fractures in children and adolescents treated surgically in West Pomeranian Voivodeship in 2005-2014

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ABSTRACT

Introduction: Methods of surgical treatment of long bone fractures in children is a problem that has been recently addressed with growing attention. The unique specifics of fractures in the developmental age compared with fractures in adult patients requires an appropriate approach. Disregarding the issue may lead to long-lasting complications, including severe skeletal deformities.

Methods: The analysis included 821 children (575 boys, 246 girls) admitted to the hospital with long bone fractures. Data were obtained from medical records from between 2005 and 2014.

Results: Long bone fractures were the cause of hospitalizations in 64.9% of cases during the spring-summer period. The average age was 12 years old. Fractures occurred more often in boys. The main cause of fractures in the test group was indirect trauma during sports activities (32%). Fractures of the distal meta and epiphysis of the radius bone were the most common result of trauma in children and adolescents (12.4 % of all fractures). A total of 32.1% of fractures of the upper limbs concerned the

radius bone and 12% concerned the supracondylar humeral bone fractures. In lower limb fractures, the most common site was the distal part of the tibia bone (8.9% of all fractures). In surgical treatment, 399 (43.3%) K-wires were used. Plate stabilization was performed 225 times (24.5%), screw fixations 119 times (12.9%), FIN/ESIN fixations 141 times (15.3%), tension bands 11 times (1.2%), intramedullary nailing 19 times (2.1%), and external stabilizations 4 times (0.5%). Fracture healing complications were observed in 3 cases in patients with polytrauma.

Conclusions: Risk of a long bone fracture grows with a child's age. Fractures are more frequent in boys. We observed triple the number of fractures that needed surgery yearly from 2005 to 2014. The increase was linear. The choice of surgical treatment method depends on the fracture type, dislocation size, and the patient's age.

Keywords: Epidemiology, children's fractures, long bones, surgical treatment, case report Level of evidence: IV, case series