

Pediatric Proximal Phalanx Base Fractures in Fingers: Identifying the Need for Surgical Management

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Fractures of the base of the proximal phalanx are among the most common fractures in children. Immobilization with or without a closed reduction can lead to good results. This retrospective study aims to evaluate change in angular deformity of proximal phalanx base fractures at final follow up.

A multi-institutional retrospective review of pediatric patients treated for a proximal phalanx base fracture from 2002-2019 was conducted. Variables collected included: demographics, initial and final angulation and displacement, treatment, malunions, Salter Harris classification, and time to union. Patients with <3-week follow up, inadequate details, or missing radiographs were excluded.

644 subjects met inclusion criteria and were categorized into non-operative, closed reduction, and operative groups. Average age was 10.8 years. Salter Harris II fractures were the most common (85.2%, $P=0.082$). There were 6 malrotations for a 0.93% malrotation rate. Non-operative, closed reduction, and operative groups initial and final median coronal deformity (2° vs 16° vs 15.1° , $P=0.0001$) and (2° vs 4° vs 1.5° , $P=0.0001$) differed significantly between and within groups. Initial and final median sagittal angular deformity (2° vs 8° vs 11° , $P=0.0001$) and (2° vs 3° vs 3° , $P=0.0022$) differed significantly between and within groups. Initial median AP displacement (0 vs 0.85 vs 1.6, $P=0.0001$) was significantly different between and within groups.

A few proximal phalanx base fractures require surgical management. The vast majority can be treated with closed reduction in the clinical setting without sedation, resulting in equivalent outcomes of minimal angular deformity. Current treatment methods have led to good results with correction of angular deformity in both the sagittal and coronal planes.