

Seymour Fractures

A Retrospective Review of Infection Rates, Treatment and Timing of Antibiotic Administration

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Background: Seymour fractures are important to recognize and treat promptly because injuries may result in growth disturbance, nail deformity, or infection. We hypothesize that the administration of antibiotics within 24 hours of injury will be associated with a decreased rate of infection.

Methods: Patients younger than 18 years were included if clinical examination and radiographs demonstrated a Seymour fracture. The timing of antibiotic administration and treatment details were reviewed. The presence of superficial infections or radiographic evidence of osteomyelitis was recorded.

Results: A total of 52 patients with 54 fracture that had greater than 30 days of follow-up and were included in data analysis. The average age at the time of injury was 10.2 years. Thirty-four (63%) of 54 patients were most commonly injured secondary to a crush type mechanism. The overall infection rate was 27.3% (15/54 fractures). Among the 29 fractures that received antibiotics within 24 hours of injury, 2 infections (6.9%) were noted at final follow-up. Delayed administration of antibiotics beyond 24 hours postinjury was observed in 17 fractures and was associated with an increased infection rate of 76.5% (13/17, $P = 0.000$).

Conclusions: Early administration of antibiotics within 24 hours of injury is associated with a reduction in the development of infections. Patients with delayed antibiotic administration may be at high risk for early superficial infection or osteomyelitis. This study highlights the importance of early identification and appropriate treatment of Seymour fractures including the prompt administration of antibiotics following injury.

Key Words: phalanx fracture, Seymour fracture, mallet finger injury, infection