

Sports-Related Hand Injuries in Cricket: Management and Functional Recovery of PIP Joint Fracture-Dislocations

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Abstract:

Background: Cricket is associated with a substantial burden of hand and finger injuries, particularly during fielding, where high-velocity ball impact can produce significant digital trauma. Previous literature has identified joint injuries as a predominant pattern among cricket-related hand injuries, with PIP joint fracture-dislocations representing some of the more severe injuries encountered in cricketers. The PIP joint is particularly vulnerable in sports because of its exposed position and importance in grip and finger function. Unstable fracture-dislocations may result in stiffness, pain, instability and impaired athletic performance if not appropriately managed.

Purpose: To evaluate the management and functional outcomes of unstable PIP joint fracture-dislocations sustained during sports, with particular emphasis on cricket-related injuries treated using dynamic Suzuki-frame fixation followed by early mobilization and structured hand rehabilitation.

Methods: A retrospective case series of 26 patients with unstable PIP joint fracture-dislocations was evaluated. The cohort consisted of 24 males and 2 females, with a mean age of 31 years (range, 24–46 years). Twenty patients had dorsal fracture-dislocations and six had pilon fractures. Cricket was the predominant sports-related mechanism, accounting for 18 cases (69.2%). The right hand was involved in 19 patients and the left hand in 7. The little finger was most frequently affected (10 cases), followed by the ring (6), middle (6), and index (4) fingers. Management consisted of dynamic Suzuki-frame fixation based on ligamentotaxis, followed by early joint mobilization, serial radiographic assessment, physiotherapy and Capener splinting.

Results: All 26 patients achieved fracture union, giving a 100% union rate. The mean active PIP joint range of motion was 78° (range, 10–90°), while mean grip strength reached 84% (range, 50–92%). Stiffness was observed in only 1 patient (3.8%). No infections, implant failures or neurovascular complications were reported. Early joint mobilization and structured rehabilitation were incorporated into postoperative management to preserve joint motion and optimize functional recovery.

Conclusion: Cricket-related hand injuries can involve significant PIP joint trauma and may result in substantial functional impairment when fracture-dislocations are unstable. In this series, cricket accounted for 69.2% of the evaluated cases. Dynamic Suzuki-frame fixation provided stable fracture management while allowing early joint mobilization and structured rehabilitation, resulting in reliable union, satisfactory PIP motion and grip strength with a low complication rate. An integrated treatment pathway combining stable fixation, early mobilization and focused hand rehabilitation may facilitate functional recovery following unstable PIP joint fracture-dislocations in cricket and other ball sports.

Keywords:

Cricket injuries, sports-related hand injuries, PIP joint, fracture-dislocation, Suzuki frame, dynamic external fixation, hand rehabilitation, functional recovery, grip strength.