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# Fracture dislocations of the carpometacarpal joints of the fingers

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ABSTRACT

*Objective:* Fracture dislocations of the multiple carpometacarpal joints [CMCJ] of the fingers are uncommon injuries that can significantly compromise hand function and durability if managed sub-optimally. These injuries are at risk of being missed as they are commonly a part of major high energy trauma with associated more obvious and immediately threatening injuries getting all the attention. The clinical and radiological parameters which could help a surgeon to detect and analyse these injuries well are discussed. The management of these injuries with emphasis on the pattern of K-wire fixation is presented.

*Method:* A review of multiple CMCJ dislocations at our institution found 39 hands in 38 patients (one case with bilateral injury) over a seven-year period (January 2010 to January 2017). The pattern of injury noted in these cases was assessed and categorized. Our preferred management plan for these injuries is discussed.

*Results:* The patterns of dislocations noted in a total of 39 cases were-dorsal (25), dorsal radial (6), volar (1), volar radial (5) and divergent (2). The dorsal dislocations were the commonest (25/39) and additional 6/39 were radial-dorsal, only six displaced in a volar direction. Divergent dislocation was seen in only two cases.

*Conclusion:* The pattern of dislocations noted in 39 cases in our institute (Ganga Hospital- A tertiary level trauma center) is presented to provide an overview of the spectrum of the injuries which a surgeon could face. Early surgery is recommended and should be aimed to restore perfect anatomical alignment of the skeleton. Surgeon should have a low threshold for open reduction in case of gross swelling or inability to get an anatomical closed reduction. The method of K-wire fixation presented herein has resulted in good outcome in our practice; wherein we fix the dislocated CMCJ by inserting K-wires from the radial and ulnar borders of the hand and avoiding wires in the central part of the hand. This prevents extensor tendons tethering by the K-wires. The fixation achieved by multiple K-wires passed in this manner provides enough stability to allow for early active mobilisation of the fingers. The need for careful assessment to detect associated nerve injury and compartment syndrome; and post-operative strict hand elevation and prevention of stiffness of the MCP joints has been emphasized.

The CMCJ dislocations have innumerable patterns possible; however, the management principles remain the same. In spite of the gross distortion of the anatomy seen in these injuries, anatomical reduction and adequate stabilization to allow early mobilization generally results in satisfactory outcomes.

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## 1. Introduction

Fracture dislocations of the carpometacarpal joints [CMCJ] of the lesser digits are uncommon injuries that can significantly compromise hand function and durability if managed sub-

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