

# Neglected Metacarpophalangeal Dorsal Simultaneous Dislocation Of The Four Long Fingers. A Case Report

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## Abstract

The authors report the case of a 35-year-old right-handed patient who presented with a metacarpophalangeal dorsal dislocation of the four long fingers of the right hand three months after a work-related accident (fall on the back of the hand, metacarpophalangeal joints in hyper-extension). He was admitted at the hospital where we conducted a surgical reduction by the maneuver of tire removers and the axial racking of metacarpo-phalangeal 2nd to 5th ray. Then the limb was immobilized in a splint plastered with dorsal cuff fingers bent at 60 °. After intensive reeducation, to which the patient strongly adhered, the functional result was very satisfactory and the patient resumed his previous professional activities.

## INTRODUCTION

Dorsal dislocations of the metacarpophalangeal joints are infrequent. The simultaneous attacks of several rays are rare and most often affect the index finger and the little finger [1]. Six cases of simultaneous dislocations of the four metacarpophalangeal joints of the long fingers have been reported in the literature [2, 3]. Neglected concomitant repairing of all four long fingers is exceptional. The purpose of this work was to report an exceptional case of a neglected metacarpophalangeal dorsal simultaneous dislocation of the four long fingers taking into account our working context.

## OBSERVATION

A 35-year-old manual worker, right-hander, consulted after three (3) months for a closed trauma of his right hand following an accident at work. The mechanism was hyper-extension of the metacarpophalangeal joint from the 2nd to the 5th ray. The clinical examination found a shortening with hyper-extension of the fourth finger and pain on palpation of the metacarpophalangeal ray. The clinical examination found an irreducible "claw" deformity of the four long fingers of the right hand. The skin opposite of the joint was hyperpigmented following the repeated application of poultice. No vascular-nervous disorders of the digital extremities have could be found. The initial radiological assessment revealed a dorsal dislocation of the

metacarpophalangeal joints of the four long fingers of the right hand without associated fracture (Figure 1). The patient was admitted to the operating room under general anesthesia. We made two dorsal incisions in the 2nd and 4th interdigital space with metacarpophalangeal space. Then the reduction was obtained by the method of tire changer using a spatula. Then an axial racking was performed using Kirchner pins of 12/10 diameters (Figure 2). During this racking, an iatrogenic fracture was observed at the head of the 4th metacarpal which was stabilized by the axial pin. The limb was then immobilized in a plaster cast with 60 ° flexion finger cuff for 21 days postoperatively. Ablation of the pins was performed on the 45th day postoperative under local anesthesia. Rehabilitation began after removal of the plaster splint by active movements and then passive movements after removal of the pins. This rehabilitation was followed for a long time by extension flexion movements in which the patient actively participated. This allowed us to obtain a complete recovery with a flexion at 80 ° and a complete extension 0 ° within 2 years (figure 3).

**Figure 1**

Simultaneous posterior dislocation metacarpophalangeal



**Figure 3a**

Functional results of the hand in flexion and extension



**Figure 2**

Immediate postoperative image showing axial pinning of metacarpophalangeal joints



**Figure 3b**

Functional results of the hand in flexion and extension



## DISCUSSION

Dislocation of the metacarpophalangeal joint of long fingers is a rare lesion. This dislocation is almost always dorsal. The neglected form of this affection is still exceptional. The first case was described in 1957 by Kaplan [4]. The lesion mechanism and lesion seat at the level of the long fingers vary from one author to others as follows: Adler et al [5] and Fraser [1] reported dorsal luxation of two rays (index and middle finger) while Hall et al [6] and Araki et al [7] reported a dorsal dislocation of three rays (index, middle finger, and ring finger). In all the cases the patients were the male subjects. They were victims of a hyper-extension trauma of the metacarpophalangeal joints without predominance of any side. Our patient was a male manual

worker who corroborates with most cases reported in the literature [8, 9,10]. He presented a closed dislocation whereas in the six cases reported in the literature, they were dislocations open opposite to one or more heads of the metacarpals [1, 2,3]. The mechanism in general is a violent extension of the finger, most often breaking the palmar plate proximally [1]. This same type of traumatic mechanism has been reported by our patient. The rupture of the palmar plate was not found because it was an old lesion. It is for this reason that we did not have to repair the palmar plate. We proceeded to reduce these dislocations by maneuvering tire levers with a spatula after two back incisions: one in the second inter-digital space that allowed us to reduce the metacarpophalangeal dislocation of second and third rays and the second incision was performed at the fourth inter-digital space which allowed us to reduce the fourth and fifth ray of the metacarpophalangeal dislocation. After reduction of dislocations we stabilized the dislocations by axial broaching using Kirchner pins of 12/10 diameter. The iatrogenic fracture observed at the head of the 4th metacarpal was stabilized by the axial pin until consolidation. After the removal of the pins on the 45th day, we began the rehabilitation of the metacarpophalangeal joints. The total functional recovery obtained by our patient was the prerogative of this intensive rehabilitation started early but also supported by the total adherence of the patient and his obsession to resume the use of the fingers.

## **CONCLUSION**

Metacarpophalangeal dislocation is a rare lesion and the

concomitant lesion of (4) four long fingers is exceptional. The early management of this lesion makes it possible to obtain an excellent result. However, late management pushes the surgeon to take circumstantial measures and increases the efforts by the patient in order to achieve satisfactory results.

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