PRISON HEALTH IN IMAGES
Carpometacarpal dislocations: Presentation of two clinical cases

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We hereby present the cases of two inmates who sought consultation in our medical service with a very similar clinical situation. They were two young males (aged 20 and 21) who after punching the wall with their right hand requested urgent assistance due to pain and deformity of their back hand. Upon examination severe deformity of the back of their hands was observed, more specifically in the carpometacarpal joint area. Anteroposterior and lateral radiological studies of the hand were performed, both showing dislocation of the 4th and 4th metacarpal bones. Under no circumstances, were fissure or fracture lines observed (see Figure 1). Prior appropriate analgesic treatment, the joints were manipulated and the corresponding control radiographs were performed to check correct anatomical repositioning. Then, patients were referred to the corresponding hospital to receive specialized care. The first case was treated by means of percutaneous needles (see Figure 2) and the second did not consent on surgical treatment so conservative therapy with a forearm plaster cast was chosen.

In our experience as correctional physicians, metacarpal fractures as a consequence of punching the wall are relatively frequent. The most common is the fracture of the fifth metacarpal bone, also known as the boxer's fracture or frustration fracture since it is common when punching a hard surface (see Figure 3). However, metacarpal dislocations are far more uncommon. Except for the dislocation of the first metacarpal bone, in fact they are considered extremely rare[1] and they account for less that 1% of all dislocations in the hand[2]. According to the rare publications on this issue, the metacarpal bones which are most commonly affected are the fourth and fifth bones, and dorsal displacement is the most common form of dislocation[3-4]. They are most frequently seen in the context of high energy trauma and they can be accompanied by fractures of the carpal bones and the metacarpal bases. Certain diagnosis requires of simple anteroposterior, lateral and oblique radiographies. Anteroposterior radiograph can identify the loss or joint congruence between the basis of metacarpal bones and carpal bones. Lateral and oblique projections evidence the direction of dislocation[2].

Figure 1.

Figure 2.

Figure 3.

Clinical manifestations of dislocation can include a swollen area and pain of the carpometacarpal joint, protrusion of the metacarpal head and deviation of the affected fingers. It is important to perform neurovascular examination due to the proximity of peripheral nerves[2].

Closed reduction should always be tried. The firs manipulation consists of longitudinal traction with metacarpal flexion thus increasing its deformity and then the basis should be volarly compressed as metacarpal bones are extended. Stable reductions may be managed by cast immobilization or percutaneous fixation with Kirschner needles for 6-8 weeks. There is no agreement on the issue but some support initial surgical stabilization[2].

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