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Simultaneous double of both interphalangeal joints dislocation of same finger in a volleyball player: A case report

Bir voleybol oyuncusun eş zamanlı aynı parmaktaki her iki ekleminin aynı anda dislokasyonu: Olgu sunumu

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Abstract

A case of simultaneous dislocation of both proximal and distal interphalangeal joints in a single finger without associated fracture in a volleyball player was presented.it was a twin dislocation in a same finger. Reduction was achieved easily with longitudinal traction. The finger immobilized in intrinsic plus position for 3 weeks followed by rehabilitation range of motion exercises. Our patient was treated by closed reduction and then intrinsic plus position splinting. The patient had full range of motion without pain joints six-weeks later. As a result, applying to closed reduction and intrinsic plus splinting in the treatment of method and early active range of motion movement preserve joint contracture.

Keywords: Intrinsic plus splinting, Joint, Dislocation, Interphalangeal, Finger, Simultaneous

Öz

Bir voleybol oyuncusunda kırık olmadan tek bir parmağın, proksimal ve distal interfalangeal eklem eş zamanlı çıkığı olgusu sunuldu. Longitudinal traksiyonla redüksiyon yapıldı. Parmak 3 hafta süreyle intrinsik plus pozisyonunda immobilize edildi, takiben eklem hareket açıklığı egzersizleri başlandı. İntrinsik plus splintleme ile hasta da 6 hafta sonra ağrısız tam eklem hareket açıklığı elde edildi. Sonuç olarak tedavi yönteminde kapalı redüksiyon uygulaması ile intrinsik plus pozisyonu ve erken aktif hareket eklem kontraktürünü engeller.

Anahtar Kelimler: İntrinsik plus splintleme, Eklem, Çıkık, İnterfalangeal, Parmak, Eş zamanlı

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Introduction

While the dislocation of proximal or distal interphalangeal joints (IPJ) of a finger, simultaneous dislocation of the proximal and distal interphalangeal joints of the same finger is rare. The fifth finger is most often affected, followed by fourth finger [1,2,3].

Case Presentation

A 26-year-old male injured his left fourth finger while fastly impact with ball on volar side of his finger. Examination revealed a stepladder deformity at finger. There was not any neurovascular damage. Radiological assessment showed dorsal dislocation of both the proximal and distal interphalangeal joints (Figure 1). There was no fracture. Double dislocation was reduced by longitudinal traction. Proximal and distal interphalangeal joint were stable after reduction (Figure 2). Splint was applied in the intrinsic plus position of the finger. After the splint was removed in finger, the patient was allowed to finger active and passive joint exercises. At the sixth week, there was full range of movement.

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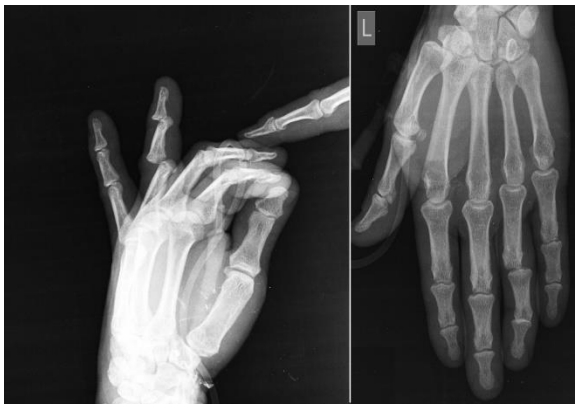

Figure 1: Joint dislocation fourth finger before reduction (a: lateral, b: anteroposterior)

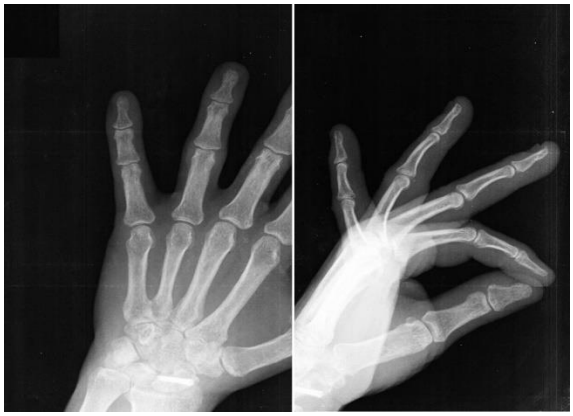

Figure 2: Joints after reduction (a: anteroposterior, b: lateral)

Discussion

Dislocation of proximal or distal interphalangeal joints are common but simultaneous dislocation both proximal or distal interphalangeal joints are rare. Most commonly etiologic reason is sport injuries in the literature. [1,4]

The probably reason is more vulnerable to trauma and owing to weakness adjacent to surrounding ligament structure in both fourth and fifth finger [1]. The other reason is that proximal anatomical morphology of finger with shallow articular surface itself leads to laxity on extension [5,6]. Firstly, dislocation distal interphalangeal joint, proximal interphalangeal joint is dislocated to following hyperextension force is affected to the middle phalanx. Thus, dislocation of both interphalangeal joints of one finger occurred consecutively [1,7].

In the literature reporting commonly injuries mechanism is dorsal dislocation in interphalangeal joint for hyperextension force of causing rupture of volar capsule. That injury mechanism is hyperextension forcefully movement direction on both joint in a finger. Once, impacting on the volar aspect of the distal phalanx, causing dislocating the distal inter phalangeal joint and then dislocating the proximal interphalangeal joint [7].

Swelling is mild in joint of finger; step ladder deformity was obvious. Swelling may obscure the clinical diagnosis in which case radiological evaluation will be needed to display the correct diagnosis [6]. İn our patient the stepladder deformity was evident and clearly diagnosis confirmed with radiograph.

Some authors support early motion for protected motion following dislocation of IPJ. Interphalangeal joint was very susceptible to post-traumatic pain, swelling and stiffness. A damaging of any joint structures will affect gliding joint motion and ligaments. Also range of motion of the joint will impair [8].

Most dislocation is reduced with closed reduction by axial traction. After the reduction, in order to avoid any instability of joint, hand and finger should not to be immobilization in the functional position. In the standing of finger position should choice intrinsic plus position leading at 80-90 degree of flexion in the metacarpophalangeal joint 0-15 degree of flexion interphalangeal joint [1,4,8]. Treatment options include immobilization, buddy-strapping, dorsal-blocking splints and figure-of-eight splints for 2-4 weeks [1,6] . In our patient, splint immobilization position was done finger of intrinsic plus position.

Surgical treatment is needed to only in case of neglected dislocation, open injuries, volar plate or ligament injuries, associated fracture and tendon injuries [1,7].

In the summary, this injury is to achieve a strong, stable and pain-free joint with appropriate range of motion (ROM). Our patient was allowed to early controlled active and passive movement. Preserving joint contracture should choice to early splinting of intrinsic plus position and early joint motion in the treatment.

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