Osteotomy and extension block pinning for the malunited mallet finger with DIP joint subluxation: A case report

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[Introduction]
A 16 year-old female was introduced to our institution, who was suffering from the pain and contracture of the right ring finger.

[History]
She had been hit her right hand by a ball 1 month before while playing dodge ball game. Soon she visited another hospital where conservative treatment was conducted. A splint with DIP joint hyperextended had been applied.

[Initial visit]
At the first present to our institution, radiograph and CT revealed not only malunited mallet fracture but also volar DIP joint subluxation. It was seemed that the articular involvement of the initial fracture had been approximately 50%. ROM of the DIP joint was 10°/10°. After 3 weeks’ treatment of rehabilitation, ROM of the DIP joint was 10°/35° and total active motion(TAM) of the ring finger was 0/80, 0/85, 0/25. Then surgical procedure was conducted.

[Surgical treatment]
Osteotomy at the united portion using a chisel and two extension block pinning procedure with direct wire fixation were applied. After splint immobilization for 2 weeks, ROM exercise was restarted. 5 weeks later all wires were removed.

[Postoperative course]
At 8 months after initial surgery, TAM of the right ring finger was 0/85, 0/115, 0/45 and that of the left ring finger was 0/85, 0/110, 0/65. Grip strength was 27/25 Kg. Although radiograph and CT showed slight osteoarthritic change of the DIP joint, the subluxation was restored and she felt no pain.

[Conclusion]
Malunited mallet fracture with subluxated DIP joint is uncommon. We conducted osteotomy and extension block pinning procedure. Favorable clinical outcome was obtained.

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