

**Ibrahim Ibrahim, Robert Winterton
and James D. Bedford*** 

Department of Plastic and Reconstructive Surgery,
Wythenshawe Hospital, Manchester University NHS
Foundation Trust, Manchester, UK

*Corresponding author: james.bedford@nhs.net

Twitter: @james_bedford

© The Author(s) 2022

Article reuse guidelines:

sagepub.co.uk/journals-permissions

DOI: 10.1177/17531934221116228 available online at <http://jhs.sagepub.com>

Results of surgical treatment in neglected dorsal dislocations of the proximal interphalangeal joint without fracture

Dear Editor,

An acute proximal interphalangeal (PIP) joint dislocation without fracture is a common injury that can usually be easily reduced with closed reduction. The volar plate, collateral ligaments and extensor

mechanism may be injured in this type of dislocation (Saitta and Wolf, 2018) We present our experience in patients with neglected isolated PIP joint dorsal dislocations that were treated using open reduction and volar plate repair or reconstruction.

Seven patients aged between 18 and 65 years, with neglected (>4 weeks from injury) PIP joint dorsal dislocations without fracture treated between 2019 and 2021 were included. There were six men and one woman with a mean age of 36 years (range 25–48). The mean time from injury to operation was 37 days (range 28–47). The fingers involved were two little ring, two ring, two middle and one index finger. The surgical technique is shown in Figure 1. Buddy taping was applied after the procedure. Passive PIP flexion is started as tolerated after the early postoperative period. The buddy taping is removed at the third week and the K-wire at the fourth, and passive and active PIP and DIP joint movements are started under the supervision of the hand physiotherapist. Strengthening exercises are added 6 weeks after operation and progressively increased until week 12.

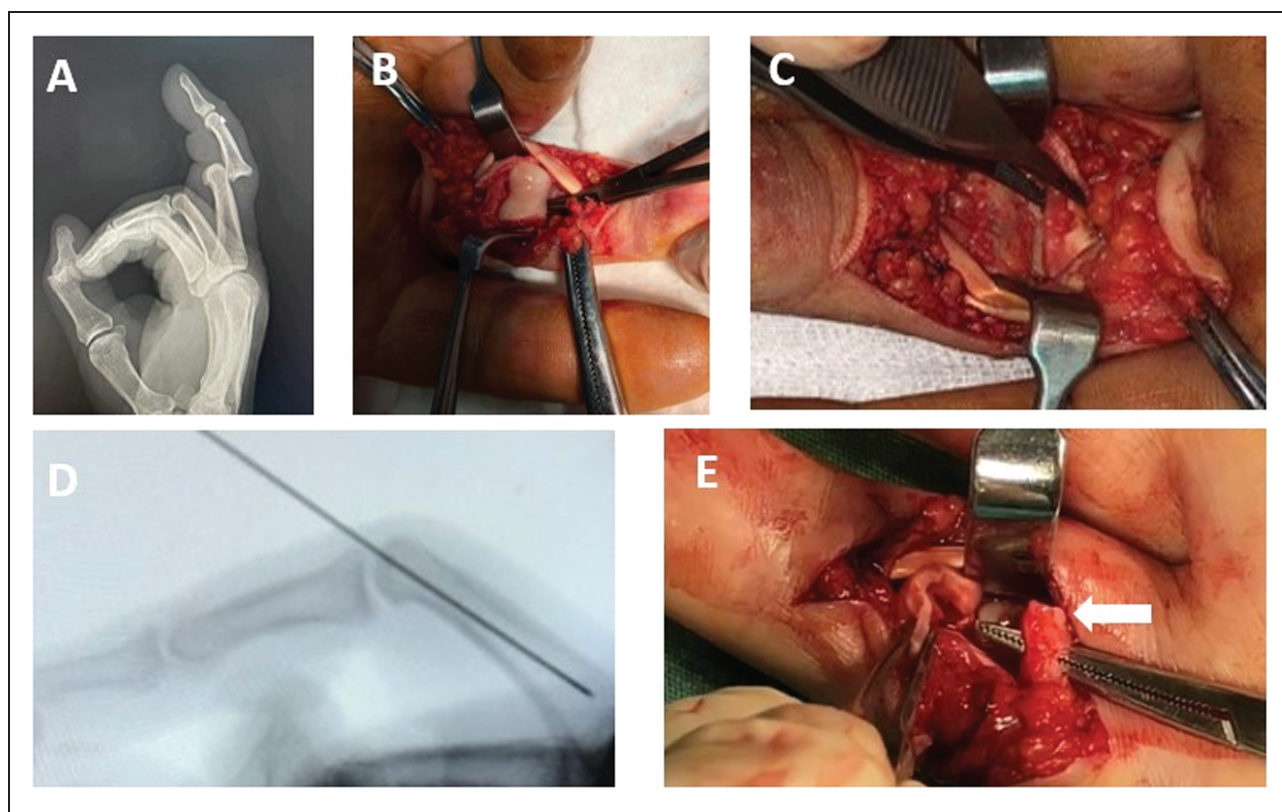


Figure 1. (a) Lateral radiograph of a dorsal proximal interphalangeal (PIP) joint dislocation without fracture. (b) An anterior Bruner skin incision is used. The flexor tendon sheath is opened and the flexor tendons retracted, revealing the dislocated PIP joint. The dislocated joint is approached between the ulnar and radial slips of the flexor digitorum superficialis (FDS), and fibrotic tissues that prevent reduction are released. (c) Controlling the volar plate tension with forceps after PIP reduction. (d) Extension block with a K-wire after PIP reduction. (e, f) If it is possible to fix the volar plate to the base of the middle phalanx base (white arrow), where it is detached, it is fixed with an anchor. If this is not possible, a volar plate reconstruction is done using an intact slip of the FDS tendon through the volar plate and (g) Concentric reduction seen in a radiograph at the final visit.

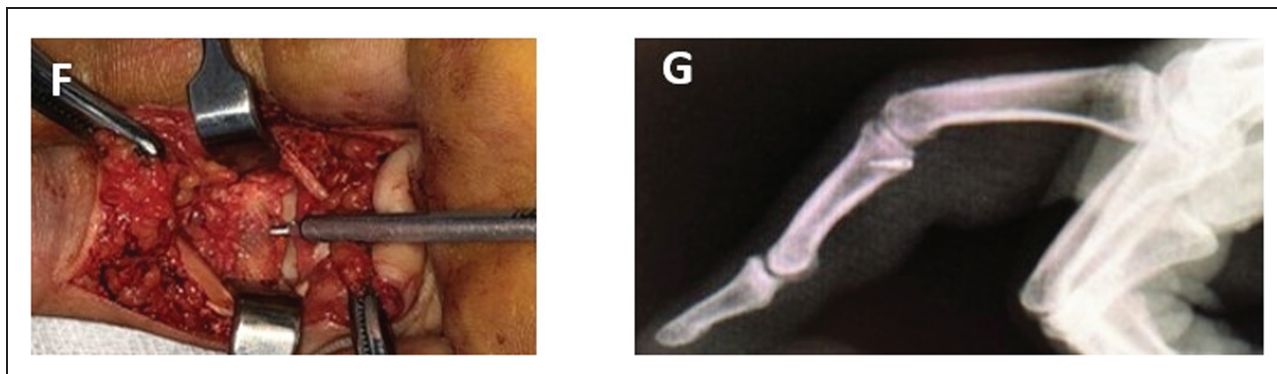


Figure 1. Continued

The mean follow-up time was 17 months (range 12–22). PIP joint concentric reduction was present, and no patient had arthritis. The mean postoperative VAS score was 0.1 (range 0–1). The mean range of flexion of the PIP joint was from 18° to 76°. Minor complications were seen in two patients, one of whom had a pin site infection that resolved when the K-wire was removed. The other had a painful scar that resolved after 6 months.

Neglected chronic isolated dislocations without accompanying fractures are rare, and treatment options are unclear because the outcomes of treatment have not been studied. Many surgical procedures have been described, including distraction with external fixator, osteotomy, arthroplasty and fusion of the PIP joint. Different approaches, such as volar, dorsal and dorsolateral, have been described (Bamal and Bindra, 2020; Frueh et al., 2018). One of the main stabilizers against dorsal dislocation is the volar plate (Caviglia et al., 2021). This structure is usually damaged in dorsal dislocation. In chronic injuries the volar plate is usually retracted or thinned, and the healing potential will decrease; and its stabilizing function will be adversely affected (Frueh et al., 2018). Therefore, we preferred to repair or reconstruct it after open reduction by an anterior approach. In the dorsal approach, the joint is easier to reach, the surrounding tissues can be mobilized more easily, and any central slip lesion can be repaired, but access to the volar plate is not possible (Bamal and Bindra, 2020).

The limitations of this study were its retrospective nature, small sample size, lack of assessment of the extensor mechanism and short-to-medium follow-up time. However, our results indicate that favourable results can be obtained in neglected PIP joint dislocations without fractures by open reduction via an anterior approach and repair or reconstruction of the volar plate.

Declaration of conflicting interests The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding The authors received no financial support for the research, authorship, and/or publication of this article.

Ethical approval Approval number 2021/22-283.

ORCID iD Ömer Ayik  <https://orcid.org/0000-0002-3437-6394>

References

- Bamal R, Bindra R. Open reduction of neglected dislocations of the proximal interphalangeal joint. *J Hand Surg Am.* 2020, 45: 991–7
- Caviglia D, Ciolli G, Fulchignoni C, Rocchi L. Chronic post-traumatic volar plate avulsions of the finger proximal interphalangeal joint: a literature review of different surgical techniques. *Orthop Rev (Pavia).* 2021, 13: 9058.
- Frueh FS, Vogel P, Honigmann P. Irreducible dislocations of the proximal interphalangeal joint: algorithm for open reduction and soft-tissue repair. *Plast Reconstr Surg Glob Open.* 2018, 6: 1729.
- Saitta BH, Wolf JM. Treating proximal interphalangeal joint dislocations. *Hand Clin.* 2018, 34: 139–48.

Tunca Cingöz¹, Serkan Bayram² and Ömer Ayik^{3,*} 

¹Department of Orthopaedics and Traumatology, Maresal Cakmak State Hospital, Erzurum, Turkey

²Department of Orthopaedics and Traumatology, Istanbul University, Istanbul Faculty of Medicine, Istanbul, Turkey

³Department of Hand Surgery, Atatürk University, Faculty of Medicine, Erzurum, Turkey

*Corresponding author: omerayik_85@hotmail.com

© The Author(s) 2022
Article reuse guidelines:



sagepub.co.uk/journals-permissions

DOI: 10.1177/17531934221116280 available online at <http://jhs.sagepub.com>