Pathological Avulsion Fracture of the Flexor Digitorum Profundus after Enchondroma—Case Report

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A 48-year-old woman experienced acute spontaneous loss of active flexion of the distal interphalangeal joint of the fifth finger. Radiographic assessment showed a proximal migrated avulsion fracture of volar cortex of the distal phalanx and extensive bone loss. Magnetic resonance imaging suggested an enchondroma: a T1-hypointense and T2-hyperintense well-defined osteolytic lesion in the distal phalanx (►Fig. 1).

The patient underwent exploration. The flexor digitorum profundus (FDP) was still fixed on the volar cortical insertion fragment, which was retracted up to the distal boundary of the A4 pulley, type 3 according to the classification of Leddy and Packer.¹ Extensive weakening with dorsal cortical undisplaced fracture of the remaining distal phalanx was also seen. Typical

whitish, flaky tissue was curettaged, confirmed as an enchondroma after pathological examination. Autogenous cancellous bone was taken out of the distal radius and packed in the defect to reinforce the phalanx. The avulsion fragment was reduced and fixed with a transosseus pullout suture over the nail, which was removed after 6 weeks (►Fig. 2). Three months after surgery, successful bony union and normal articular congruity were obtained. Patient was able to restart all activities with full range of motion and absence of pain (►Fig. 3).

It is uncommon that an avulsion of the FDP and an enchondroma situated in a phalanx occur together.² Favorable outcome can be achieved by simultaneous treatment of the enchondroma and the reinsertion of the FDP avulsion. If

Fig. 1 Preoperative assessment. (A) Loss of passive tenodesis effect after FDP avulsion, bruising and swelling of digit. (B) Anteroposterior radiograph: diaphyseal fracture of the distal phalanx. (C) Lateral radiograph: retracted avulsion of the volar fragment, osteolytic lesion in the distal phalanx. (D) T2-weighted MRI view: retracted FDP, osteolytic lesion with edema of peripheral soft tissues, and intra-articular effusion.

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Fig. 2 Surgical technique. (A) Brunner-type incision over the distal interphalangeal joint. (B) Avulsed bony fragment with inserted FDP, whitish flaky tumoral tissue in the distal phalanx. (C) Large dead space in the distal phalanx after curettage. (D) Filling of the dead space with autogenous spongy bone. (E) Transosseous suturing of the avulsion fragment. (F) Well-fixed FDP after suture.

Fig. 3 Postoperative assessment. (A) Restoration of passive tenodesis effect after FDP refixation. (B) Active flexion of the digit 6 weeks after surgery. (C) Lateral radiograph 3 months after surgery: bony union of the avulsion fragment, incorporation of the bone graft, integrity of articular congruity.

dead space is induced after tumor curettage, subsequent bone reconstruction is required with bone grafting to achieve stable fixation.³ Possible complications are residual pain, infection, joint stiffening, joint arthritis, flexor tenofibrosis, and rerupture.

Conflict of Interest

None.

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