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CHIRURGIE DE LA main
Chirurgie de la main 34 (2015) 210–214

Clinical case

Avulsion of flexor digitorum profundus secondary to enchondroma of the distal phalanx. Case report and literature review

Avulsion du tendon flexor digitorum profundus et chondrome de la phalange distale : à propos d'un cas clinique et revue de la littérature

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Received 29 January 2015; received in revised form 16 March 2015; accepted 28 March 2015
Available online 20 July 2015

Abstract

We report an unusual case of avulsion of the flexor digitorum profundus tendon of the ring finger at its insertion, in combination with a pathological fracture of the distal phalanx due to enchondroma. The bone lesion was curetted and grafted using autogenous bone. The FDP tendon was reattached to the distal phalanx using the pullout technique. We describe this case in detail and discuss the surgical management through a review of literature.

Keywords: Chondroma; Jersey finger; Pathological fracture; Imaging

Résumé

Nous rapportons un cas rare d'avulsion du fléchisseur profond du quatrième doigt de la main sur fracture pathologique de la base de la phalange distale secondaire à un chondrome. Le chondrome a été cureté et greffé avec de l'os spongieux. Le tendon fléchisseur profond a été réinséré sur *pullout*. Nous comparons notre prise en charge aux dix autres cas cliniques similaires publiés dans la littérature.

Mots clés : Chondrome ; Avulsion du fléchisseur profond ; Fracture pathologique ; Imagerie

1. Introduction

Avulsion of the flexor digitorum profundus (FDP) from its insertion at the base of the distal phalanx (P3) is a common injury in hand trauma. Surgical treatment is relatively standardized, and various curative and palliative surgical solutions are available. The majority of bone tumors are benign, with the most common being enchondroma, mainly in the metacarpals and first phalanx. They are rarer in the distal phalanx, where they can cause significant tissue destruction. The combination of these two pathologies is very rare; we report a case of FDP avulsion in the ring finger secondary to P3 enchondroma.

2. Case report

This was a 45-year-old, right-handed female patient with no particular medical history, who experienced spontaneous pain

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http://dx.doi.org/10.1016/j.main.2015.03.004
1297-3203/

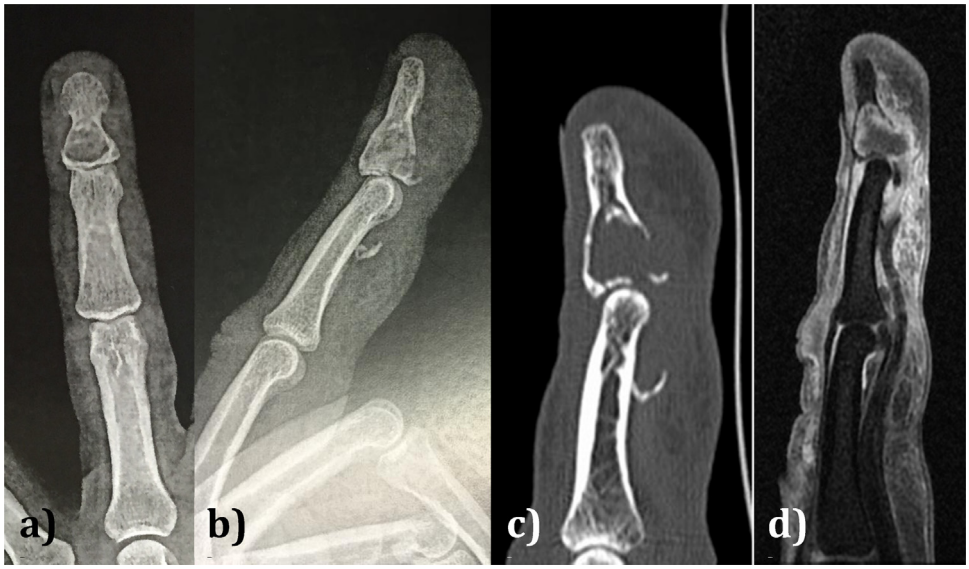

Fig. 1. A/P radiograph (a). Lateral radiograph (b). Sagittal CT slice (c). Sagittal T1-weighted, fat-saturated MRI with gadolinium injection (d): well-defined osteolytic lesion centered in P3, discrete destruction with a few fine areas of calcification within it. Fracture on the volar side with retraction of a bone splinter over P2.

and complete functional disability of the ring finger of her left hand, which made flexion of the distal phalanx impossible. She consulted us 72 hours after her symptoms first appeared. The clinical examination revealed FDP tendon rupture in the ring finger. Questioning of the patient revealed no trauma, not even a minor one. Standard radiographic assessment showed a pathological fracture of the distal phalanx with extensive bone lysis suggestive of enchondroma. The bone fragment could be seen 1 cm proximal to the distal interphalangeal (DIP) joint, which corresponded to Leddy and Packer type III (Fig. 1a–b). CT scan without contrast found a centered Lodwick type 1B osteolytic lesion (well-defined, geographic lesion without peripheral sclerosis and with less than 1 cm separating pathological and healthy bone) disrupting the cortex with a few intralesional microcalcifications (Fig. 1c). This lesion appeared to be fractured on the proximal and volar side with a bone splinter over the middle third/distal third of the middle phalanx, where the retracted flexor digitorum stump was located. Magnetic resonance imaging (MRI) revealed an osteolytic tissue lesion with T1-hypointensity, clear T2-hyperintensity and higher peripheral uptake of injected gadolinium (Fig. 1d). In addition, there was significant edema of peripheral soft tissues and intra-articular effusion.

We decided to perform a single-stage curative treatment with curettage and filling of the enchondroma defect, in combination with FDP tendon reattachment using the pullout wire technique (Fig. 2). The surgical procedure was performed under regional anesthesia with an axillary block. A Brunner-type incision was made over the mid-line of the DIP joint to expose the base of the distal phalanx and the distal end of the flexor tendon. Curettage

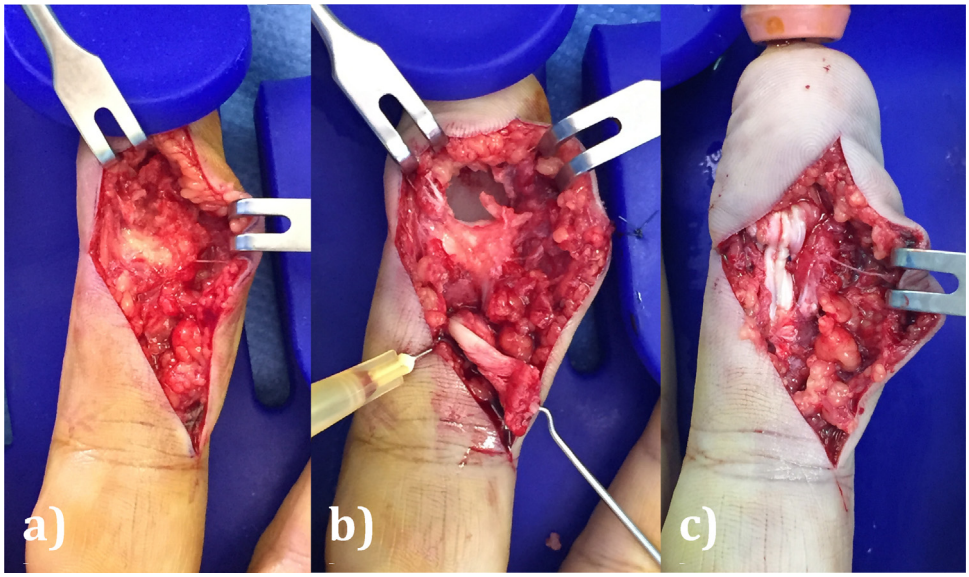

Fig. 2. Enchondroma (a). Appearance after curettage and FDP externalization (b). FDP reattachment using pullout wire technique (c).