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CLINICAL CASE

Free tendon grafts in elder patients, a case report of repair of flexor pollicis longus tendon with a free palmaris longus graft in an 89-year-old woman



Greffes tendineuses chez les personnes âgées, à propos d'un cas de réparation du flexor pollicis longus par une greffe de palmaris longus chez une femme de 89 ans

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Summary Flexor tendon rupture is a potential complication after volar plating of distal radius fracture. Palliative procedures such as tenodesis and arthrodesis are usually employed in elder patients with imperfect results. We report a case of delayed flexor pollicis longus rupture seven years after volar plating of a distal radius fracture occurring in an 89-year-old woman. The repair with a free tendon graft of palmaris longus was successful in terms of strength and range of motion. Free tendon grafts should not be limited to younger patients and could be used in elder patients after careful selection.

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Résumé La rupture des tendons fléchisseurs est une complication possible après le traitement des fractures de l'extrémité inférieure du radius par plaque palmaire. Des interventions palliatives telles que les ténodèses et les arthrodèses sont classiquement employées chez les patients âgés avec des résultats imparfaits. Nous rapportons le cas d'une rupture secondaire du flexor pollicis longus à 7 ans du traitement d'une fracture de l'extrémité inférieure du radius par plaque palmaire chez une femme de 89 ans. La réparation effectuée avec une greffe de long palmaire d'interposition a permise la récupération de la mobilité et de la force du pouce avec

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succès. Les greffes tendineuses devraient pouvoir ne pas être limitées aux patients jeunes et pourraient être utilisées chez les patients âgés après sélection soigneuse des indications.

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Introduction

Distal radius fractures are a common osteoporosis-related fracture in older people (8% of women above 80 years old). Open reduction and internal fixation with a volar plate is preferred in this age group [1], due to osteoporosis and the possibility of early mobilisation. Flexor tendon rupture is a rare but major complication associated of this technique of osteosynthesis.

We report a case of delayed rupture of the flexor pollicis longus (FPL) tendon, observed 7 years after volar plating of a distal radius fracture in an 89-year-old woman. The rupture seemed to have occurred 3 months prior to consultation. We decided to perform a one-stage palmaris longus graft followed by an early protected mobilisation rehabilitation program in order to recover quickly without further surgery.

Case report

An 89-year-old right-handed woman had sustained a left intra-articular distal radius fracture with anterior displacement 7 years earlier. Open reduction and internal fixation with a non-locking plate was performed in another hospital (Fig. 1). No immediate complications of the surgery were



Figure 1 Wrist radiography done at the consultation, 7 years after the trauma. The fracture was fixed by a non-locking plate.

noted. She came to our hospital for a consultation seven years later with a loss of flexion of the thumb that she was unable to date precisely, although she believed it had occurred 3 months earlier.

There were no relevant risk factors in her medical or pharmaceutical history that put her more at risk for tendon rupture. She was a nonsmoker. The patient consented to the publication of her case.

Physical examination revealed that she could not actively flex the interphalangeal joint of her thumb, although passive range of motion of the joint was normal as well as sensory findings.

X-ray examination showed no change of the wrist. Nevertheless, the plate was placed very laterally.

A magnetic resonance imaging, which was previously performed, found a rupture of the FPL located at the distal part of the plate, the proximal stump was found next to the distal edge of the plate, and the distal stump was found at the middle of the first metacarpal bone. We discussed with the patient of various treatment options before the surgery.

We performed a surgical exploration and found a fibrous scar tissue at the tendon rupture of the flexor pollicis longus between the proximal and distal stumps. Primary end-to-end repair was not possible due to retraction. As the patient was in good health and fully understood the aim of the treatment, we decided to repair the tendon in performing a free palmaris longus tendon graft. First, we removed the volar plate that was too distally and laterally placed. Then, we excised the scar tissue, revealing a 5 cm defect in tension. We harvested on the same side the palmaris longus tendon that was 15 cm long.

The graft was then sutured to the FPL stumps with the Pulvertaft technique [2] using 4 layers of the palmaris longus tendon, with non-absorbable suture (ethilon 3–0, Johnson-Johnson®) (Fig. 2).

Intraoperative testing of the suture was satisfactory, passive range of motion was complete.

Rehabilitation was performed by a physiotherapist and consisted of early active mobilization protected by a Durantype splint.

The Kapandji score [3] at 6 weeks was 9/10, the patient had no pain or wound healing complication.

At 24-month follow-up, the Kapandji score was 9/10 (Fig. 3), without any pain. Key pinch measurement of strength was 2.3 kg as opposed to 3.3 kg in the opposite side. Active and passive range of motion was normal. The Quick Dash score was 17/55 (converted at 13.64/100)

Discussion

Volar plate fixation of distal radius fracture is often preferred in older patients, because it provides a stable fixation, allows an early mobilization and does not require removal. Johnson et al. [4] reviewed 206 wrists and found that ruptures of the flexor pollicis longus tendon occurs in 0.5% of

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