

Reconstruction of the Radial Sagittal Band Using a Palmaris Longus Tendon Graft Reconstruction in the Rheumatoid Hand

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Introduction

Sagittal band injury can be caused by an acute traumatic event or can occur as a chronic process in patients with underlying inflammatory conditions, such as rheumatoid arthritis (RA). Although acute rupture in non-rheumatoid patients can be selectively treated with splinting, indolent attenuation and rupture requires surgical repair. Although medical management has become the mainstay of treatment for RA, radial sagittal band attenuation or rupture is an indication for surgical intervention in the rheumatoid patient as it leads to destabilization of the metacarpophalangeal joint (MCP) and ulnar drift. Previous techniques utilize part of the extensor tendon to repair the radial sagittal band, although can result in extensor lag.

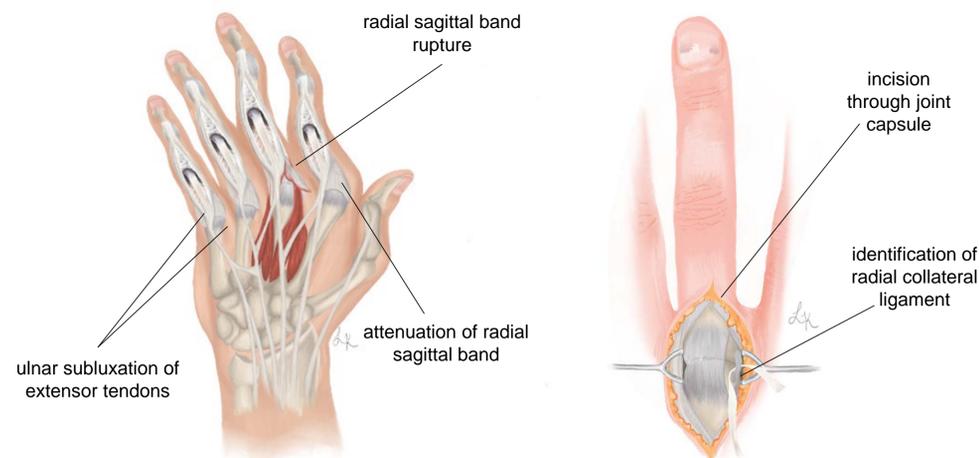


Figure 1

Figure 2

Objectives

To describe an alternative technique for reconstruction of the radial sagittal band in rheumatoid hand patients presenting with sagittal band rupture and extensor tendon subluxation without increasing risk of extensor lag

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Surgical Technique

1. A transverse lazy S incision is made over the metacarpal head dorsally. Dissection is carried down through the skin and subcutaneous fat where the extensor mechanism was found to be subluxed ulnarly and the radial sagittal band was completely disrupted (Figure 1).
2. On the ulnar side of the extensor mechanism the contracted ulnar sagittal band is completely released, allowing the extensor mechanism to be brought over the mid dorsum of the metacarpal head.
3. A longitudinal incision is made through the joint capsule, exposing the radial collateral ligament and encircling this with an umbilical tape (Figure 2).
4. Through three short transverse incisions the palmaris longus tendon is harvested from the volar forearm (Figure 3).
5. The right third MP joint is placed in full extension and pinned with an oblique Kirschner pin from the metacarpal head to the base of the proximal phalanx.
6. The free palmaris graft is woven through the radial collateral ligament of the MP joint, securing it in place with permanent suture. The extensor mechanism is then brought dorsally, and using a Pulvertaft-type weave, the free palmaris longus tendon graft is woven into the extensor mechanism and tacked in place with permanent suture (Figure 4).

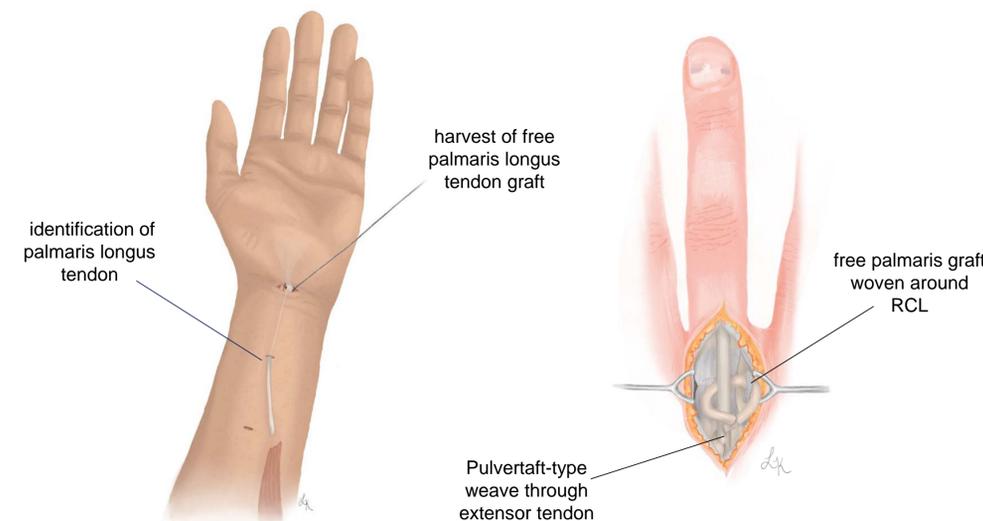


Figure 3

Figure 4

Methods

- RA patients presenting to the hand surgery clinic with ulnar deviation of their MCP joints and extensor lag were assessed clinically for radial sagittal band attenuation or rupture by their ability to hold their MCP in extension if passively extended.
- A retrospective chart review was performed using the electronic health record system to identify patients of the senior author underwent surgical repair of their radial sagittal band with the described technique

Results

- Seven patients met inclusion criteria and were treated with this technique
- Each had successful repair of their affected radial sagittal bands and went on to heal without major complications and without postoperative extensor lag

Conclusions

Herein, we present an alternative surgical technique for repair of the attenuated or ruptured radial sagittal band in the rheumatoid hand patient utilizing a PL tendon graft as a sling to restabilize the MCP joint