

Closed tear of both flexor tendons of the middle finger following oriental hornet (*Vespa Orientalis*) sting.

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Abstract

This article is meant to raise awareness to the possibility of suffering a flexor tendon rupture after being stung by a hornet, as prevention is always better than dealing with the consequences of an injury. A tear of both flexors, described scarcely in the literature always poses an intriguing conundrum. We will describe a case we have dealt with and to our knowledge is the first of its kind.

Keywords: Flexor tendon tears, Oriental Hornet, Sting, Tendon reconstruction.

Introduction

Each digit, except the thumb, has two flexor tendons - one superficial, attaching to the base of the middle phalanx, and one deep, attaching to the base of the distal phalanx [1].

Avulsion of the Flexor Digitorum Profundus (FDP) is commonly referred to as Jersey Finger, an entity although quite uncommon but described extensively, usually affects the ring finger and involves a mechanism of hyperextension [2,3]. Isolated Flexor Digitorum Superficialis (FDS) tears are considered an even more rare entity [4].

The combined avulsion or tear of both tendons has been described even less, as mentioned in a recent article by Cuggy et al. - 14 cases of rupture of both tendons from their insertion were described since the first series in 1960 and 6 cases were reported of rupture in the mid substance of both tendons. All cases presented involved hyperextension injury or some sort of a blast injury causing these ruptures [5].

The case encountered by us involves tears in the middle finger of FDP (Zone 2) and FDS (Zone 3) which we postulate to have occurred after the patient was stung by a hornet in the hand, leading to a local inflammatory response [6-10], which combined with very mild trauma to the finger led to the complete rupture of both tendons.

Case report

A 61 year old, right hand dominant male presented to our outpatient clinics with complaints of inability to actively flex the middle finger of his right hand for about two weeks. He claimed to have sustained a mild trauma to finger and described it was squeezed between a cart and a wall. He did not pursue medical attention prior to the first visit in our clinic.

Clinical examination revealed an extended middle finger with no active flexion but with full passive flexion. There were no visible bruises but the finger was mildly swollen and tender to palpation on the volar aspect of the middle phalanx. Sensation and vascular tests were normal.

He went on to operation 3 days later. We used a standard Bruner incision, beginning most distally but having to extend it as much as the distal edge of the carpal tunnel due to the following intraoperative findings (Figure 1):

- Complete tear of FDP (ZONE 2) with distal stump found inside the A3P.
- Complete tear of FDS (ZONE 3) with distal stump found distal to the superficial vascular arch
- Proximal stumps found to be extremely friable and the lumbrical almost completely detached from the FDP.
- Extensive tenosynovitis along the course of both tendons with a lump of uncertain nature on top of the median nerve proximal to its exits from the carpal tunnel which was sent to pathology along with the distal stumps of both tendons.

As primary repair was not possible, we have decided to perform a 2-stage tendon reconstruction. We sutured a silicon rod to the shortened FDP distal stump and the skin was closed with interrupted nylon 4-0 sutures.

Postoperatively, upon further questioning and after describing the intraoperative findings, the patient recalled being stung by a hornet a few days before the above-mentioned trauma to the hand. This finding may explain the pathological results of the tissue sent which indicated extensive inflammatory reaction seen in the tissue sample sent.

The patient was referred to occupational therapy to begin treatment 3 days postoperatively.

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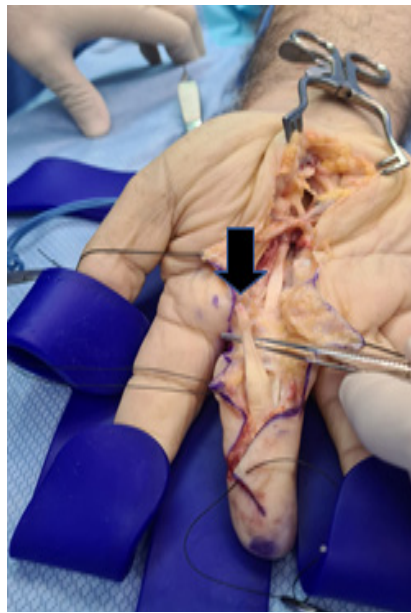


Figure 1: First operation: intraoperative finding showing tear FDP (black arrow).



Figure 2: Second operation: Palmaris graft connected to FDP distal stump with visible flexion of the finger when pulling on it.

Following an uneventful period of around 3 months of intensive therapy the patient was examined in our clinic and was found to have good range of passive motion. He was then admitted and underwent the second stage of tendon reconstruction (Figure 2) using a Palmaris longus tendon graft which he now uses to flex his finger quite nicely.

Clinical Message

Tear of both flexor tendons resulting from extensive tenosynovitis that is secondary to acute inflammatory response may well have been prevented by splinting and/or means of reducing inflammation (Naiads, hand elevation, cooling). As it was not, we were still able to reconstruct one flexor tendon using the commonly described technique of 2 stage tendon repair.

Conclusion

This is a rare case of both flexor avulsions. The very low energy and unusual mechanism of injury described by the patient rose suspicion when first examined in our clinic and it is our belief that the main culprit in this matter are the toxins released by the hornet sting causing extensive tenosynovitis

and weakening of the tendons to the point they rupture by very mild trauma. This in turn should be kept in mind when dealing with such injuries as it is possible that a few days of splinting in a safe position along with a course of anti-inflammatory medications may have prevented this awful tendon injury from the beginning.

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