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Original article

Modified percutaneous trigger finger release

Technique modifiée de traitement percutané du doigt à ressaut

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Abstract

Stenosing tenosynovitis or trigger finger is one of the most common disorders that affect the flexor tendon apparatus of the hand. Percutaneous release has been previously reported to be easier, quicker, less invasive and less costly than open surgery. The purpose of this study was to report the outcome of an alternative percutaneous trigger finger release technique. From March 2008 to January 2014, 92 patients (128 fingers) who underwent the alternative percutaneous trigger finger release, with a minimum of 6 months follow-up were included. Outcomes included size of skin incision, pain, residual symptoms, satisfaction and complications. Percutaneous release was achieved in all fingers, except 1 for which an opening of the skin was necessary to complete the release of the pulley. Eight fingers (6%) required revision open surgery because of persistence of their symptoms. At 1 week after the procedure, no finger swelling was reported, however 4 fingers (3%) were painful and 45 (35%) were stiff and required physiotherapy. Percutaneous release was successful in 120 fingers (94%). At the final follow-up, all the patients were satisfied by the procedure (95 rated their result as much better and 32 as better). This study shows that our alternative percutaneous trigger finger release is a reliable and safe procedure with high patient satisfaction.
Level of evidence. – Level IV, clinical study, therapeutic study.

Keywords: Trigger finger; Percutaneous

Résumé

Le doigt à ressaut est une des pathologies les plus fréquentes de l'appareil fléchisseur des doigts. Des études précédentes ont montré que la ténolyse percutanée était plus simple, plus rapide, moins invasive et moins coûteuse qu'à ciel ouvert. Le but de cette étude était de rapporter les résultats d'une nouvelle technique de ténolyse percutanée dans le traitement du doigt à ressaut. Entre mars 2008 et janvier 2014, 92 patients (128 doigts) traités par cette nouvelle technique de ténolyse percutanée et avec un recul minimum de 6 mois furent inclus. Les critères d'évaluation comprenaient la taille de l'incision cutanée, la douleur, les symptômes résiduels, la satisfaction et les complications. La ténolyse percutanée était complète dans tous les doigts sauf 1 pour lequel une incision fut nécessaire afin de compléter le geste à ciel ouvert. Huit doigts (6 %) furent repris pour persistance des symptômes. À une semaine de l'intervention, aucun doigt n'avait d'œdème, cependant 4 doigts (3 %) étaient douloureux et 45 (35 %) étaient raides et furent traités par la rééducation. La ténolyse percutanée fut efficace dans 120 doigts (94 %). Au dernier recul, tous les patients étaient satisfaits de l'intervention (95 qualifiaient leur résultat de « bien meilleur » et 32 de « meilleur »). Cette étude montre que notre technique de ténolyse percutanée est fiable et sûre dans le traitement des doigts à ressaut et permet d'obtenir un taux de satisfaction élevé.
Niveau de preuve. – Niveau IV, étude clinique, étude thérapeutique.

Mots clés : Doigt à ressaut ; Percutané

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1. Introduction

Stenosing tenosynovitis or trigger finger is one of the most common disorders that affect the flexor tendon apparatus of the hand [1]. Most patients can be managed conservatively with medication, physical therapy and steroid injection especially early in the course of the disease [2]. However, when conservative management fails to improve the symptomatic trigger finger, then release of the A1 pulley is recommended and has been shown to lead to good outcome [3]. The A1 pulley release is performed through a standard open approach or percutaneous approach with good outcome reported in both [1,4–8]. Percutaneous release has been reported using needle [6,7,9–20], angiocatheter [21–23], scalpel blade [8,24–26] or other percutaneous custom made instruments [27–30] and it has been reported to be an easier, quicker, less invasive and less costly alternative, which could be performed in a clinic setting.

The authors of this manuscript have developed an alternative technique of percutaneous trigger finger release that to our knowledge has not been published previously in the literature. The purpose of this study was to report the surgical steps and outcome of this percutaneous trigger finger release technique.

2. Materials and methods

2.1. Patients

From March 2008 to January 2014, 171 consecutive patients (213 fingers) who had failed to respond to non-operative treatment for trigger finger involving any finger except for the thumb were included. They all underwent an alternative percutaneous trigger finger release by the same surgeon (MC). Ninety-two patients (128 fingers) had a minimum 6 months follow-up and were included in the analysis. There were 67 females and 25 males with an average age at the time of surgery of 64 years old (range: 38–85). Triggering of the middle finger was the most common (58), followed by the ring finger (42), the index (20) and the little finger (8). The modified Green classification [1] was used to grade triggering (Table 1): 3 fingers were grade 0; 90 graded 1; 29 graded 2; and 6 were graded 3. Concomitant hand disorders were found in 2 patients (2 carpal tunnel syndromes which were treated simultaneously).

2.2. Surgical technique

After appropriate preparation of the hand with antiseptic solution, the proximal aspect of the A1 pulley of the involved finger is identified according to the landmarks described by Wilhelmi et al. [31] (Fig. 1). Three cc of lidocaine 1% without epinephrine are injected at this level in the flexor tendon sheath. The patient is then asked to flex the involved finger beyond the triggering or locking position. The tip of an n° 11 blade is inserted percutaneously through the skin and the flexor tendon just proximal to the A1 pulley and the appropriate position of the knife is confirmed by asking the patient to attempt gently wiggle his finger that results in motion of the knife (Fig. 2).

Table 1
Classification of triggering finger severity [1].

Grade	Clinical finding
0	Pretriggering: pain, tenderness over A1, no locking of the finger
1	Locking of the finger, but active extension is possible
2	Locking of the finger, passive extension is possible
3	Flexion contracture

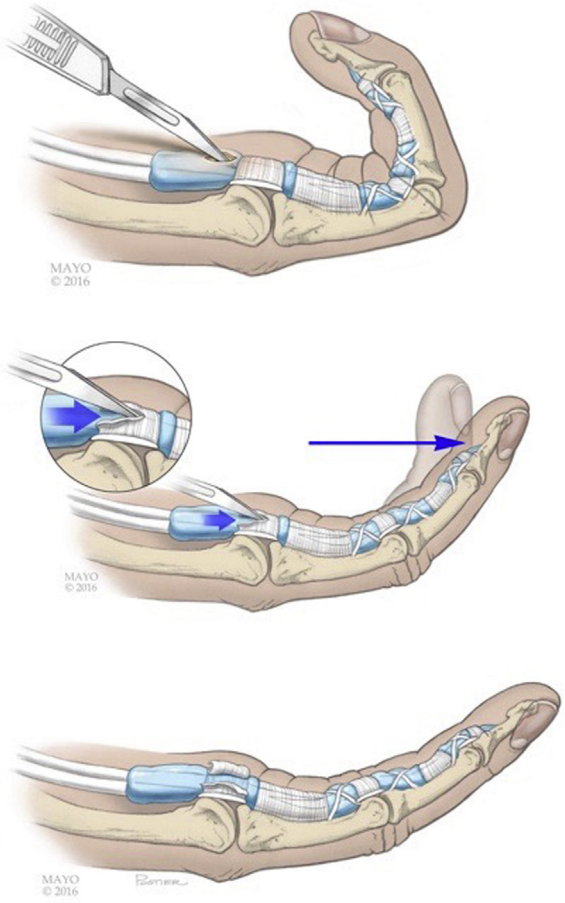

Fig. 1. Surgical steps of the percutaneous trigger finger release. The tip of the blade of the knife needs to be aimed towards the center of the finger to prevent neurovascular injuries.

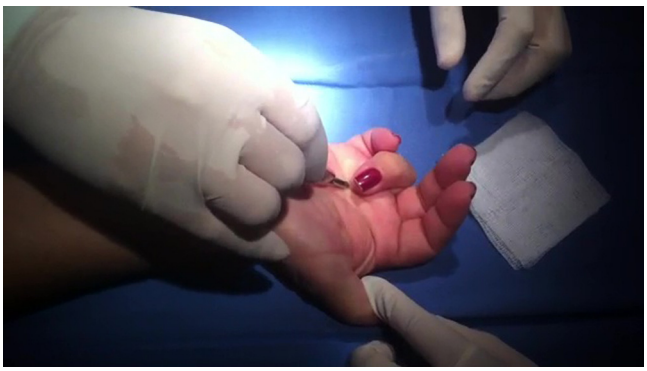

Fig. 2. The tip of an n° 11 blade is inserted percutaneously through the skin and the flexor tendon just proximal to the A1 pulley.