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Original article

Outcomes at 7 and 21 years after surgical treatment of Dupuytren's disease by fasciectomy and open-palm technique

Traitement de la maladie de Dupuytren par aponévrectomie et technique de la paume ouverte : résultats à 7 et 21 ans

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ABSTRACT

The goal of this study was to assess the recurrence of Dupuytren's disease and the stability of the functional result after fasciectomy combined with the McCash open-palm technique. From 1989 to 1999, 56 consecutive patients were surgically treated for Dupuytren's disease. In 2003, 40 of these operated patients were reviewed by an independent evaluator; 12 patients were Tubiana stage 1, 16 stage 2, 9 stage 3 and 3 stage 4. Twenty-one of them were reviewed again in 2016 by a second evaluator who was unaware of the clinical results in 2003. The mean follow-up was 7.32 years (range, 4.26 to 12.5 years) at the first review. Recurrence occurred in 7 patients (17.5%) and extension of the disease in 15 (37.5%). Three patients had developed complex regional pain syndrome (CRPS). Mean residual contracture was 19.3°. Average improvement in finger extension was 53°. At the second review, 21 patients were assessed with a mean follow-up of 21.5 years (range, 18.7 to 26.3 years). None of them were re-operated and no extension of the disease was observed. There was no recurrence in patients who had no recurrence in 2003. However, the contracture had worsened in five patients (23.8%), three of whom had a recurrence of the disease in 2003. Mean residual contracture was 31.8°. Recurrence occurs most often in the first few years after surgery. The functional result is stable over time. CRPS and the number of rays operated are the main factors negatively affecting overall improvement of mobility.

RÉSUMÉ

Le but de cette étude était d'évaluer la survenue de la récidive de la maladie de Dupuytren et la stabilité du résultat fonctionnel après traitement par aponévrectomie étendue et technique de la paume ouverte selon McCash. De 1989 à 1999, 56 patients ont été opérés d'une maladie de Dupuytren. En 2003, 40 patients ont été examinés par un évaluateur indépendant ; ils présentaient 12 stades 1, 16 stades 2, 9 stades 3 et de 3 stades 4 selon la classification de Tubiana. Vingt et un d'entre eux ont été réévalués en 2016 par un second examinateur. À la première révision, le recul moyen était de 7,32 ans (de 4,26 à 12,5 ans). Une récidive était présente chez 7 patients (17,5 %), une extension de la maladie chez 15 malades (37,5 %). Trois patients avaient développé un syndrome douloureux régional complexe de type 1 (SDRC). Le gain global moyen était de 53°. La deuxième évaluation a porté sur 21 patients, le recul moyen était de 21,5 ans (de 18,7 à 26,3 ans). Il n'y avait pas de récidive chez les patients n'en ayant pas présenté en 2003. Cependant, il existait une aggravation pour cinq patients (23,8 %) dont 3 avaient déjà présenté une récidive de la maladie en 2003. Le déficit d'extension moyen était de 31,8°. La récidive survient le plus souvent au cours des premières années suivant la chirurgie. Le résultat fonctionnel obtenu est stable dans le temps. Un SDRC et le nombre de rayons opérés sont les principaux facteurs de mauvais résultats sur le gain global de mobilité.

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1. Introduction

Dupuytren's disease is a fibroproliferative disorder whose cause is still unknown [1]. Although needle fasciotomy is commonly used now [2], surgery is still the gold-standard treatment for severe disease [3,4]. Numerous surgical techniques [5–10] have been developed that combine a variety of procedures on the skin and fascia. Nevertheless, fasciectomy is currently the most frequently used technique [4,11,12]. The outcome after surgery is marked by the risk of recurrence, whose prevalence is said to increase with length of follow-up [13–15]. The long-term outcome and evolution of established recurrences are not well documented.

The objective of this study was to assess the recurrence Dupuytren's disease and the stability of the functional results. The medium- and long-term results after extensive excision of involved tissues associated with the McCash open-palm technique [16] were analyzed.

2. Patients and methods

From 1989 to 1999, 56 consecutive patients were surgically treated for Dupuytren's disease by the same senior surgeon. All surgical records were reviewed to ensure the surgical technique used was fasciectomy combined with the McCash open-palm technique [6].

The procedure was carried out under regional anesthesia with a tourniquet and magnifying glasses [17]. A transverse incision was made in the distal palmar crease, combined with a Bruner digital incision [18] and a proximal zigzag incision up to the distal margin of the retinaculum (Fig. 1a, b). Involved tissues were excised as completely as possible, including those on the lateral aspects of the proximal interphalangeal (PIP) joint and behind the palmar proper digital pedicles. The transverse palmar incision was left open for secondary healing with a paraffin gauze dressing. Patients were routinely assessed the first time between 3 and 5 weeks postoperatively and were seen regularly until their condition stabilized.

At the time of first clinical review, 13 of the 56 patients had died and 3 were lost to follow-up. Forty patients (38 men and 2 women) were evaluated. Mean age at onset of the disease was 47.1 years (range, 23 to 70 years) and mean age at surgery was 58.6 years (range, 28 to 74 years). Twenty patients were manual workers and 20 were retired or inactive. Thirty-five patients were right-handed, two were left-handed and three were ambidextrous. Both hands were affected in 33 cases (82.5%). A family history was found in 15 patients (37.5%). Eleven patients (27.5%) had potential contributing medical and lifestyle factors: nine patients had diabetes (22.5%), one had epilepsy treated with barbiturates (2.5%) and one was a chronic alcohol abuser (2.5%). Features of Dupuytren's diathesis were found in 8 patients (22.5%): 3 had dorsal cutaneous pads, 5 had Ledderhose's disease and one had LaPeyronie's disease. Dupuytren's disease affected the palm and fingers in 39 cases (97.5%) and several fingers in 30 cases (75%). The ray most often involved was the fifth ray in 26 patients (65%), followed by the fourth ray in 13 (32.5%) and the third ray in one patient (2.5%). The mean flexion contracture was 72° (range, 30° to 150°), with a mean of 39° (range, 0° to 90°) for the MCP and 32° (range, 0° to 90°) for the PIP. The degree of involvement was classified in Tubiana stages, taking into account the most affected finger: 12 patients were stage 1 (30%), 16 stage 2 (40%), 9 stage 3 (22.5%) and 3 were stage 4 (7.5%). Four patients (10%) had hyperextension of the distal interphalangeal joint (DIP). The surgical procedure was performed on the dominant side in 27 cases (67.5%). This was a primary procedure in 35 cases (87.5%) and it was a secondary procedure for 5 patients (12.5%) operated in another center. One ray was operated in 12 cases (the fifth ray in 9 cases), 2 in 16 cases (the fourth and fifth rays in 12 cases), and 3 in 12 cases (the third, fourth and fifth rays in 9 cases). PIP arthrolysis was also performed in two cases (5%). No skin grafts or local flaps were needed. All patients wore a Levame dynamic steel blade splint for a mean of 3.7 weeks (range, 1 to 8 weeks) post-surgery combined with immediate rehabilitation.

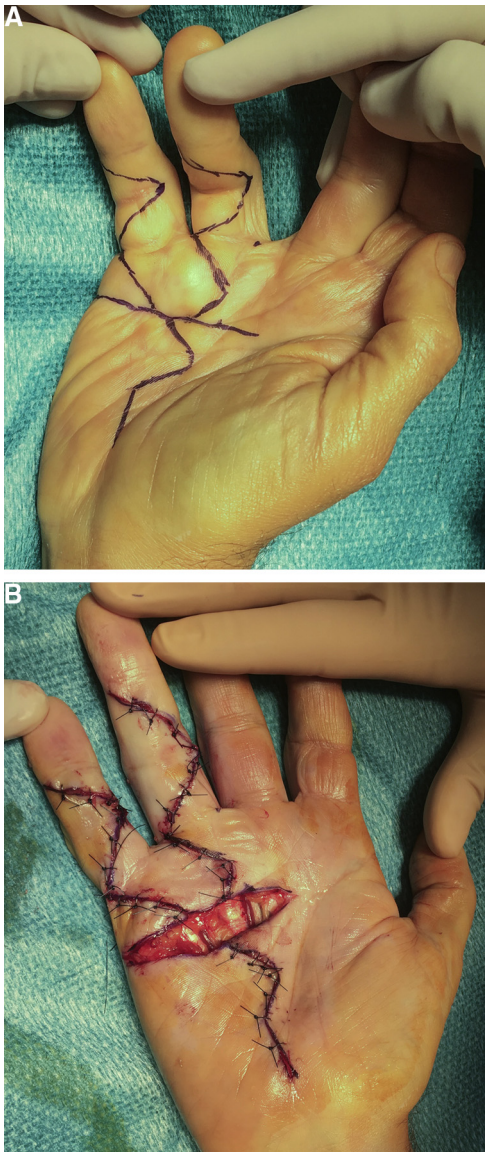

Fig. 1. A. Drawing of the skin incisions. B. Open palm at the end of surgery.

In 2003, the patients were reviewed for the first time by an independent evaluator. The clinical parameters of interest were gain in total motion, extension deficit, recurrence, functional disability, time to clinical stabilization, extension of the disease, overall patient satisfaction, and complications including type 1 complex regional pain syndrome (CRPS). Recurrence was defined as flexion contracture of the metacarpophalangeal joint (MCP) and/or PIP that was greater than the postoperative deficit documented at clinical stabilization. Extension of the disease was defined as the occurrence of a new contracture on a previously healthy finger or the appearance of nodules or pads. A surgical revision could be justified when the contracture was at least 40° [11]. CRPS was evaluated with a semi-quantitative clinical score and classified in three types: active, transient and borderline [19]. The same

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