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(CASE REPORT)

Dual manifestation of Dupuytren's contracture: A bilateral case analysis with clinical implications

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Abstract

Dupuytren's disease is a chronic fibroproliferative disorder of the hand, characterised by progressive contracture of the fingers, which can significantly impair functionality. This article presents a unique case of post-surgical recurrence treated by [name of surgical technique used], analysing the impact of this approach on limiting recurrence and functional recovery.

The patient, aged 63, presented with a significant contractile recurrence after a conventional aponeurectomy [February 2024]. Immediate and medium-term post-operative results showed satisfactory restoration of mobility, an absence of major complications and a significant reduction in factors favouring recurrence.

This case illustrates the potential of the partial fasciectomy surgical technique in minimising the risk of recurrence, and also highlights the surgical challenges associated with scar fibrosis and vascular risk. An in-depth discussion is conducted to compare these results with the data in the literature, in order to better define the indications and limitations of this technique in the management of recurrences.

Keywords: Dupuytren's disease; Bilateral case; Recidivism; Surgical treatment

1. Introduction

Dupuytren's disease, a benign connective tissue disorder affecting the palmar aponeurosis, was first described by the Swiss physician Felix Plater in 1614. The disease causes progressive contractures of the hand and was later attributed to Baron Guillaume Dupuytren, a French doctor who gave numerous lectures on the subject in 1831.

It is a disease characterised by thickening and shortening of the fibrous tissue of the palm, leading to progressive flexural deformity of the fingers. Known today as Dupuytren's disease (MD), it generally presents unilaterally, meaning that it usually affects only one hand at a time.

The cause of Dupuytren's disease is complex and multifactorial. The genetic association with the disease is well known, and recent studies have proposed an association between Dupuytren's disease and non-genetic factors, including diabetes mellitus, alcohol, smoking, liver disease and repetitive hand use. [1, 2]

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2. Case presentation

A 63-year-old woman presented to the clinic with a deformity of both palms that had been evolving for 12 years. There was no history of trauma. The patient was a non-smoker and non-alcoholic. She had no history of epilepsy. She had already undergone a partial fasciectomy on the right hand 7 years ago, which recurred 4 months ago on the 3e , 4e and 5e fingers, for which a 2e partial fasciectomy was performed.

She also had a palmar flange on her left hand. Examination revealed a small palpable cord on the palm of her left hand, with a firm consistency. Contractures of the ring finger of the hand were observed, with the ring finger entering flexion at the metacarpophalangeal and proximal interphalangeal joints, stage 2 according to Tubiana's classification, and limited opening of the 1e commissure with an angle of less than 30% (stage II of Tubiana and Michon's classification for the thumb and 1st commissure). The table test was positive, revealing the possibility of Dupuytren's contracture (figure 1).

The patient underwent surgery on both hands with an interval of 4 months between February and June 2024.

Figure 1 photo showing the table test

A standard X-ray was taken as part of the paraclinical examination, showing no joint involvement (Figure 2).

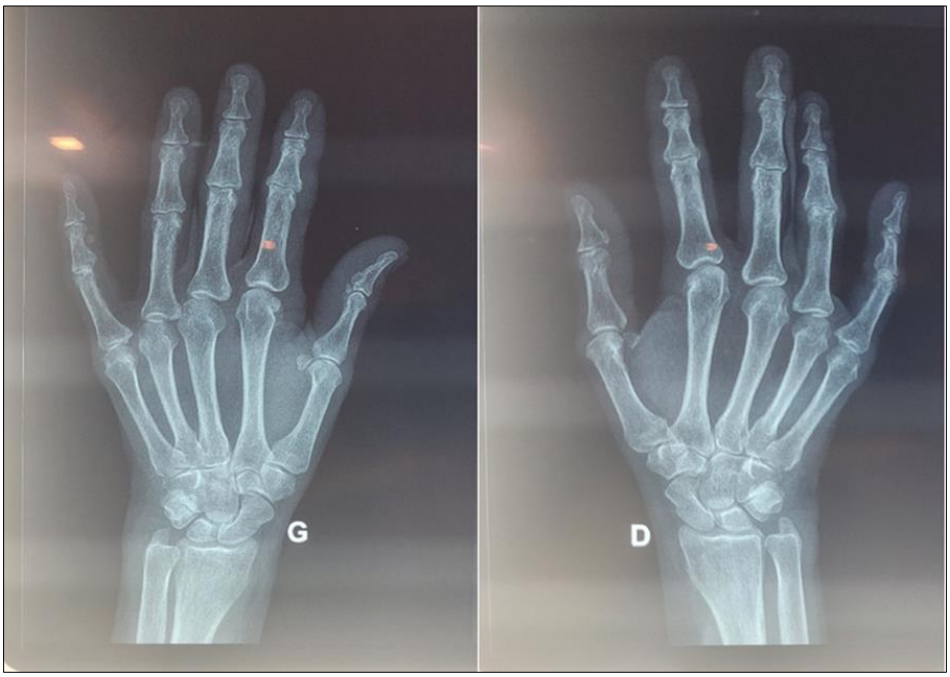

Figure 2 Standard X-ray of the left hand

Under local anaesthetic, we performed a fasciectomy on the cord-like scar band measuring approximately 7.0 x 0.5 cm and a 5 cm pretensioned cord was revealed over the flexor tendon sheath. En bloc resection of the cord was performed. Following en bloc resection of the scar band and the pretense cord, full mobility of the fourth finger was confirmed. An additional multiple Z-plasty was performed from the palmar area to the middle phalangeal area to minimise tension (Figure 3). The skin incision was closed with a simple suture interrupted with 5-0 nylon sutures.

Figure 3 Intraoperative photo

The patient had no postoperative complications and the sutures were removed on day 15 (figure 4).

Figure 4 Photo D 15 postoperative

3. Discussion

Dupuytren's disease is a fibroproliferative disorder of the palmar fascia, characterised by the formation of a nodule that develops into a cord. It is hereditary and mainly affects Caucasian individuals of Northern European origin [3]. However, the mode of genetic transmission remains poorly understood. In addition to this genetic predisposition, a number of environmental factors, including alcohol consumption, exposure to tobacco and certain conditions such as diabetes and epilepsy, are known to be associated with the onset of this disease [4,5]. It mainly affects men aged between 40 and 80, and very rarely occurs in younger people [4,5].

The classic description of disease progression is the initial appearance of nodules, followed by cord formation. This is followed by a final stage in which the cords mature and irreversible digital contractures develop, leading to significant impairment of hand function [6]. However, progression of the disease is not inevitable; only 30-50% of people develop progressive flexion deformities [7,8] and the course of MD can fluctuate over time [9].

The Tubiana classification provides an objective assessment of indications and results

- Stage 0: no lesion.
    - Stage N: nodule without retraction.
    - Stage I: total MP+IPP+IPD retractions between 0 and 45°.
    - Stage II: total MP+IPP+IPD retractions between 46 and 90°.
    - Stage III: total MP+IPP+IPD retractions between 91 and 135°.
    - Stage IV: total MP+IPP+IPD retractions >135°.

3.1. Non-surgical treatment

Observation is feasible in benign cases, non-progressive and non-restrictive. The use of radiotherapy has been reported, mainly in European countries, with good response, delaying and slowing disease progression and delaying the need for surgical treatment [10].

Historically, injections of corticosteroids, dimethyl sulphoxide, vitamins A and E and gamma interferon have been used, with no consistent results [11-14].

3.2. Surgical treatment

Surgery is the gold standard for treating progressive forms of the disease. This occurs in cases of contraction of the metacarpophalangeal joint (MTCF) of 30º or more (which is considered evidence of positive Hueston) or contraction of the proximal interphalangeal joint associated with functional impairment, usually present with major contractures at 20º. Surgery consists mainly of some of the following options: percutaneous fasciotomy, partial open fasciectomy, total open fasciectomy, dermofasciectomy and amputation.

Percutaneous fasciotomy is the least invasive of all, it is used in the case of patients who are not good candidates for major surgery, especially elderly adults with multiple comorbidities, as immediate results can be obtained in finger extension with minimal risk using only a local anaesthetic. This is usually done with a needle with which the fibrous cord is cut percutaneously. A recent study compares this technique with open fasciectomy

After 6 weeks, there was a 63% improvement in passive extension deficit, compared with a 79% improvement in the open fasciectomy group. In terms of complications, there were a greater number of minor complications (skin lesions and paresthesias) in the percutaneous group compared with the fasciectomy group, but the percutaneous group had no major complications, which was not the case in the surgical group (digital nerve injury, infection and haematoma) [15,16].

Partial fasciectomy is the most widely used and accepted surgical method in the world, and involves surgical excision of only macroscopically compromised tissue, achieving a low rate of complications and postoperative morbidity. The recurrence rate can vary from 27% to 63% [17-20].

Total or radical fascectomy, which consists of complete excision of all the palmar fascia, is a procedure with a high rate of post-operative complications, with 20-30% of major complications such as haematomas, delayed healing and joint stiffness among others. Better results have not been demonstrated with clinical features or recurrences when compared with partial fasciectomy. However, if there are studies that support it40, where they publish 18% of complications (4% of which are nerve damage) and 11% of recurrences. This clearly influences each centre's experience of the results.

Dermofasciectomy is a procedure to be used in patients with a high risk of recurrence and progression, in which an excision is made of the skin and underlying tissues with a later graft. It has a low probability of recurrence, but if major complications such as anaesthesia at the level of the total skin graft, haematomas, infection, among others36.

Lastly, amputation is an exceptional indication, in cases of multiple recurrences, with nonfunctional fingers that cannot be corrected by surgery, and with no significant functional requirements; it is more frequent in cases of severe flexion contracture of the little finger.

Does the type of treatment used influence the occurrence of recurrences?

Studies have compared aponeurectomy and "open palm", and dermo fasciectomy with total skin grafting [21-23]. There was no significant difference between the first two techniques, but recurrence proved to be exceptional with total skin grafts, as HUESTON had already predicted [24] and as confirmed by several more recent studies [25].

Recent publications also suggest that needle fasciotomy techniques are associated with a very high rate of recurrence.

The treatment of recurrences differs from that of primary lesions due to the increased complexity associated with the presence of scar tissue. The aponeurectomy often becomes more complicated to perform, and dissection of the vasculonervous pedicles presents significant risks. Nerve damage, even if repaired, mainly affects the sensitivity of the hemi-pulp concerned, while vascular damage, even if isolated, may compromise the viability of the finger if the other artery has been damaged during a previous operation. This risk is greater in the fingers, where the pedicles may be fully integrated into the recurrence or fibrosis, than in the palmar area, where they are generally located deeper than the scar tissue.

The aponeurectomy is not systematically complete, contrary to what is recommended for primary damage. Because of the difficulties of dissection, there is a tendency to limit excision to the tissues actually responsible for the retraction. For example, in the case of retraction predominating in the MP, no attempt is made to extend dissection beyond P1, once extension of the MP has been obtained.

The aim is not always to restore full extension of the finger. Depending on the complexity of the dissection, it may be preferable to accept a slight residual extension deficit rather than compromise the safety of the vasculo-nervous pedicles by taking unnecessary risks.

In so-called "at-risk" subjects, i.e. those with a high potential for recurrence, it is logical to propose the only technique that has a preventive effect on the occurrence of recurrence, namely dermofasciectomy with total skin grafting. Recent studies have clearly demonstrated the protective effect of the graft against recurrence.

4. Conclusion

Although recurrence is common after surgery for Dupuytren's disease, this does not call into question the appropriateness of surgery. Although unable to permanently eliminate the disease, this approach restores optimal hand functionality for the patient. In at-risk individuals, techniques such as partial fasciectomy can reduce the extent of recurrence. When a recurrence occurs, repeat surgery is only indicated if it causes significant functional discomfort. However, this type of complex operation involves risks, particularly vascular risks, which must be carefully assessed to avoid compromising the viability of the finger.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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