

ORIGINAL ARTICLE

Effect of severity of Dupuytren contracture on disability

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Abstract

The aim of this study was to investigate the correlation between the severity of Dupuytren contracture and disability. The American Medical Association (AMA) guidelines were used to assess the impairment for each involved hand. The disability of the arm, shoulder and hand (DASH) questionnaire was used for evaluating the disability. Eighty patients with 102 involved hands were enrolled. The mean total flexion contracture was 119°/hand or 65°/ray. The mean DASH score was 15 (range 0–69). There was no significant correlation between the DASH score on one hand and the total flexion contracture, the mean flexion contraction/finger, the mean flexion contracture of the proximal interphalangeal (PIP), the mean flexion contracture of the metacarpophalangeal (MCP), the number of involved hands, fingers or joints, and the AMA impairment rating on the other hand.

Introduction

Dupuytren contracture causes flexion of the ulnar fingers and it seems obvious that deformity should lead to increase of disability.

However, there is no hard evidence to prove this. Previous studies have addressed the effect of operation for Dupuytren disease on function of the hand and disability. Skoff [1] and Zyluk and Jagielski [2] found that a reduction in total flexion contracture postoperatively resulted in a reduced disability of the arm, shoulder and hand (DASH) score.

Sinha et al. [3] and Draviraj and Chakrabati [4] found a significant correlation between severity of Dupuytren contracture and the Sollerman score preoperatively. The score improved significantly after a successful operation.

The aim of this study was to investigate the correlation between the severity of Dupuytren contracture and disability, using different methods to quantify the severity.

Patients and methods

The DASH questionnaire [5] was used for all patients. All involved joints were measured with a standard goniometer. The extension lag was noted for each joint, and the totals for all joints were added

and a mean flexion contracture/ray was calculated. The American Medical Association (AMA) guidelines were used to assess the impairment for each hand.

We enrolled 80 patients (11 women and 69 men, mean age 60 years, range 21–78). Twenty-two had both hands involved, 21 the right hand alone, and 37 the left hand alone involved.

Spearman's correlation coefficient was used to assess the relation between the DASH score and the various quantifications of objective hand functioning. Probabilities of less than 0.05 were accepted as significant.

Results

There was a mean of 2 rays (range 1–7) with 3 joints (range 1–11) involved. The mean total flexion contracture was 119° (range 5–460), or 65°/ray (range 10–160). The mean (SD) proximal interphalangeal (PIP) contracture was 60° (55); the mean (SD) flexion contracture of the metacarpophalangeal (MCP) joint was 53° (60). The mean DASH score was 15 (range 0–69). In 32 the DASH score was less than 15, in 60 less than 20. The mean (SD) impairment was 8 (8) in total, 4 (3) for a single finger, and 12 (8) for more than one finger.

There was no significant correlation between the DASH score on one hand and the total flexion contracture ($p=0.7$), the mean flexion contraction/finger ($p=0.7$), the mean flexion contracture of the PIP ($p=0.9$), the mean flexion contracture of the MCP ($p=0.08$), the number of involved fingers ($p=0.7$), and the number of involved joints ($p=0.5$), on the other hand (all Spearman correlation coefficient). There was no significant difference for unilateral compared with bilateral involvement ($p=0.97$) (Mann-Whitney U test).

We found no correlation between the DASH score and the degree of impairment (AMA guidelines) ($p=0.99$) (Spearman's correlation coefficient).

Discussion

These results indicate that the degree of disability of patients with Dupuytren contracture is small and not related to the severity of the contracture. The disorder is not a painful condition and the ulnar fingers are usually involved. The ulnar fingers are not so commonly involved in activities of daily life in the patients studied, with a mean age of 60 years. In other clinical series of Dupuytren contracture, the DASH score was higher: 24 for Atroshi et al. [6]; 37 for Skoff [1]; and 54 in the recent series by Zyluk and Jagielski [2]. The mean total flexion contracture in the last was only 80° . In that particular series there was also no correlation between the severity of the contracture and the DASH score.

There is, however, a significant correlation between the severity of the contracture and a functional test such as the Sollerman test [3,4].

It is important to bear these data in mind before operating on these hands. The operation is not simple and recurrences are common after all types of fasciectomy. There is a direct relation between the extent of the procedure and postoperative

morbidity [7–9]. Complications are numerous, up to 10% of wound problems [10]. The complications often result in compromised flexion [11], which interferes directly with grasping. The functional losses can exceed the impairment and disability induced by the extension deficit itself.

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