

# Dupuytren's Contracture in Women

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Dupuytren's contracture, a fibroproliferative disorder of unknown cause, occurs predominantly in white men of northern European ancestry.<sup>2, 5, 14</sup> Reports in the literature indicate that the male to female ratio varies from 7:1 to 15:1,<sup>1, 24, 18-20, 29, 30</sup> and after the age of 40, the incidence of Dupuytren's contracture may increase with each succeeding decade.<sup>7</sup> Hueston noted that, after age 40, the condition is as prevalent in women as in men, but may present itself later and less severely in women.<sup>7, 15</sup> It has been suggested that women tolerate the contractures better than men and are less likely to seek medical treatment.

There is general agreement that Dupuytren's contracture is a genetic disorder with a single autosomal gene, having variable penetrance.<sup>10, 12, 31</sup> This theory accounts for the different symptoms noted in patients of similar age, and the varying rate of progression in these same patients. The disease is even more poorly expressed in women.<sup>31</sup>

A subset of patients with a more aggressive form of the disease exists, the "Dupuytren's diathesis." These individuals develop the disease early in life, often have a positive family history, and can manifest it in both hands, on the plantar fascia, and in the penis. They also show a strong tendency for contracture to recur after surgery.

## ANATOMY AND PATHOPHYSIOLOGY

The location, type of contracture, and involvement of joints in the hand are similar in

men and women. Although women may express a less severe contracture, it may be that because fewer women have the disease, there are fewer cases of severe deformity. Women, being more conscious of the appearance of their hands, may seek treatment sooner than men.

Although the anatomy of the diseased tissue has been described, the reason that the normal fascia converts to diseased fascia (nodules and cords) remains an enigma.

## TREATMENT

The result of the disease process is a flexion contracture that can impair the function of the hand. Shortly after this develops, the woman may seek medical consultation. The deformity usually results in some degree of inconvenience, such as trouble getting her hand into a purse or glove.

In the author's opinion, an operative release should be considered when there is a 30° contracture of the metacarpophalangeal joint (MPJ) or a 20° to 30° contracture of the proximal interphalangeal joint.

It is after surgery that the difference between men and women seems to be most important. In the first paper to address this subject, Wallace<sup>29</sup> states that, "In women, the results of surgery may be most disappointing. Postoperative function is . . . variable and the tragedy of the 'frozen hand' sometimes occurs."

The author's procedure of choice in women with Dupuytren's contracture is a limited fas-

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ciectomy. In selected cases, where there is more extensive involvement (more than two fingers), the operation may be done in two stages.

When only one digit is involved, a Bruner incision has been effective, extending from the distal joint of the finger to the proximal digit or palm. Skin flaps are elevated, and the neurovascular bundles are carefully identified and gently protected. It is important to protect both the digital artery and the digital nerve. Although a nerve injury is more immediately apparent to the patient, injury to even one digital vessel, especially in an elderly patient, may significantly alter the circulation to the digit. When more than one finger is involved, each digit is approached through a Bruner incision, and the palm is opened through a separate transverse incision just proximal to the distal palmar crease. Dividing the palmar cord at the onset of the procedure allows improved passive extension of the digit and facilitates the distal dissection. This technique, especially the gentle retraction of the nerves and arteries, is designed to nullify the increased risk of the flare reaction in female patients.

Although full-thickness skin grafts may be employed, their routine use after a dermofasciectomy is not necessary. Skin grafts are more commonly used in those with recurrent disease because skin of poor quality is often found in the area of the recurrence. After diseased tissue is removed, the tourniquet is released and hemostasis is obtained. If there is a persistent bleeding from small punctate areas, the tourniquet is re-inflated and the skin is closed. Drains are not routinely used.

Postoperatively, the hand is immobilized and elevated in a comfortable, bulky, compressive dressing with a dorsal plaster splint. The treated fingers are splinted in moderate extension for 5 to 7 days. Digital motion within the confines of the dressing is allowed after 1 week. All dressings are discontinued after 3 weeks, unless there is some delay in wound healing.

On occasion, the open technique<sup>16</sup> is used in the distal palm. This is performed when the palmar skin defect cannot be easily closed either primarily or with local flaps, and a skin graft is not indicated. Although eventual healing is satisfactory,<sup>3</sup> patients are sometimes disappointed with the time required for such healing.

Fasciotomy can be a useful adjunct in the older woman with significant medical problems, who has a contracture of the MPJ due to a pretendinous cord. Under local anesthesia, a small incision is made in the palm, the cord is divided, and the contracture is released. There is, however, a high rate of recurrence with this procedure.<sup>22</sup> Contractures of the MPJ of all the digits readily improve after their release. In our series, 93% of women improved after such releases.<sup>32</sup> Improvement in extension of the proximal interphalangeal (PIP) joint also occurred but to a lesser degree. In the PIP joint of the small finger, extension improved only 34%, with an average residual contracture of 33°. Amputation of the small finger was rarely necessary, and the residual contracture of the PIP joint of the ring finger was 15°.

Overall digital function is not significantly improved with release of the ligaments about the PIP joint of the small finger, although position of the finger can sometimes be improved by arthrodesis. Silastic replacement arthroplasty of the PIP joint of the small finger has not been beneficial in Dupuytren's disease. In women, the shortening of digital length necessary for this procedure is also cosmetically unappealing.

Strickland noted a 33% improvement of PIP joint contractures with concomitant release of the checkrein ligaments.<sup>23</sup> If there was only an isolated Dupuytren's cord on the ulnar side of the small finger, extension at the PIP joint improved 53% after release of the cord. The primary and secondary changes that occur about this joint may explain the great difficulty in improving a flexion contracture of the small finger.<sup>27</sup>

## DISCUSSION

The results of operative treatment in women can be considered in terms of recurrence, extension of disease, and complications resulting from the operation itself.

## RECURRENCE

In our series of 66 women, there was a recurrence of the disease in 14 of 83 hands

(17%).<sup>32</sup> A recurrence is defined as nodules and contractures reappearing in the area of the previous operation. The patient's age, severity of the disease, and the presence of Dupuytren's diathesis seem to be the most critical factors.

In a recent long-term study, a subgroup of women had a recurrence rate of only 25%, as compared with the overall (men and women) combined rate of 47%.<sup>26</sup>

No study of Dupuytren's disease in women has been able to correlate a recurrence rate with a particular operation. The disease process within a particular patient seems to be the single most important factor.

### EXTENSION

Extension of Dupuytren's disease is defined as the presence of lesions outside the operated area where previously there had been no disease. In our study of women, an extension of the disease was found in 25% of cases.<sup>32</sup> The genetic factors and age of the patient seem to play even more of a role than with recurrence. In the previously cited study, the extension rate in the women's subgroup was 25%.<sup>26</sup>

### COMPLICATIONS

A flare reaction is a major complication, is unpredictable, and portends a long-term decrease in hand function. An operation on a single digit can trigger this reaction and result in stiffness of the entire hand (Fig. 1).

Lot Howard popularized the term "flare reaction."<sup>6</sup> It denotes redness, edema, pain, and stiffness that characteristically occurs during the 3rd or 4th week after surgery. Usually, the patient has had good progress during the first 2 or 3 weeks.

This serious reaction has been reported to occur in 5% to 10% of patients following operative treatment for Dupuytren's contracture.<sup>5, 13, 17, 19, 22, 25</sup> The study groups in these reviews were composed of both men and women, although most cohorts have a greater number of men. Some have reported that women do less well after surgery than men, but specific data were not included.<sup>4</sup>

Wallace noted that 59% of women between

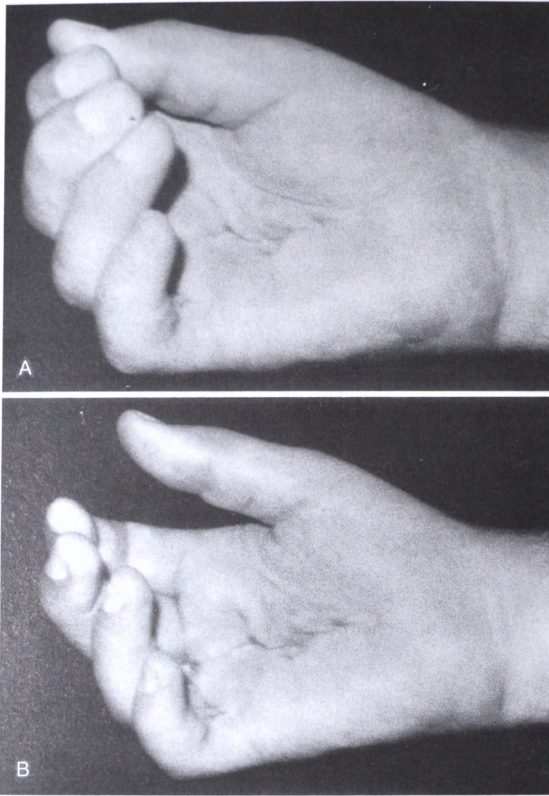
the ages of 39 and 59 years had a "bad result," whereas all patients younger than 39 or older than 59 years had a "good result."<sup>29</sup> Those patients undergoing palmar *and* digital fasciectomy were particularly at risk to do poorly.

Our study showed that 20% of women developed a flare reaction.<sup>32</sup> In addition, the flare reaction occurred in 58% of 12 hands who had a carpal tunnel release as part of their operation, and in 11 of 24 hands (46%) who had a more "extensive fasciectomy." The flare reaction usually caused a *permanent* loss of digital function. During a 15-year interval, the same authors operated on 163 hands (of women with Dupuytren's contracture) and 24.5% of these hands exhibited a flare reaction. During the same time period, 383 hands of men with Dupuytren's disease were operated upon, and only 12.5% had a flare reaction.

It has been noted that "in some cases of the contracture, e.g., in a fat person, particularly in a woman, there exists a constitutional tendency to a dystrophic tissue reaction to the operative trauma. The presence of the tendency cannot be predicted."<sup>21</sup> The author recommended that a two-stage operation be performed in severe cases. A recent review of 103 hands operated upon for Dupuytren's contracture showed that the frequency of reflex sympathetic dystrophy after fasciectomy is sex-related. It was recommended that women be given a guanethidine block during the operation; however, no data regarding the effectiveness of guanethidine were presented.<sup>24</sup> No specific method exists to identify patients who may develop a flare reaction after an operation for Dupuytren's contracture. Authors<sup>13, 23</sup> who favor the open palm technique of McCash believe this operation may decrease the tendency towards a flare reaction.

### SUMMARY

Dupuytren's contracture in women is similar to that in men. A limited fasciectomy is the operative procedure of choice for women with Dupuytren's contracture. The most significant difference between men and women is the higher incidence of a flare reaction in women following the operation. This must be considered when contemplating such procedures be-



**Figure 1.** A. This patient is shown 3 months after surgery to release flexion contractures of the ring and little fingers. After a flare reaction, this shows maximum finger flexion. B. Maximum finger extension.

cause the flare is associated with a greater risk of residual joint stiffness.

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## Comment on "Dupuytren's Contracture in Women"

The flare reaction is rightly indicated in this article as the principal problem for female patients after fasciectomy.

Operative statistics usually show 5 to 10 times more male than female patients receive surgery for Dupuytren's contracture, but it was shown 30 years ago that in the general population men are only afflicted twice as often. I reported then that, for those older than 60 years, flexion deformity was present only half as often in women as in men.

It is the same pathologic process in both sexes, manifested slightly differently in women. Why is this so? Is there a hormonal factor yet to be discovered, dictating a lower diathesis in women? All childhood and adolescent patients that I have seen with a plantar lesion alone have been girls, but I am aware of no statistical study of this possibly important issue (see the Comment on "Diagnosis and Indications for Surgical Treatment"). At the other extreme, the "flare reaction" of Lot Howard is usually in women past the menopause. A field of clinical research is here just waiting to be discovered using laboratory and clinical facilities in combination.

The onset of the flare reaction 2 or 3 weeks after an apparently uncomplicated postoperative course is one of its most enigmatic features. It seems, therefore, a little premature to use intraoperative guanethidine block as a prophylactic. Likewise, the open palm technique offers

no greater relief. Schneider reports in this issue that a complication rate of 10% RSD is still seen after its use. RSD is an entity that seems to occur after the healing process but only in particular individuals, roughly twice as often in women as in men.

The psychologic state of the patient may be a factor. Is it mere coincidence that reports of the greatest numbers of RSD come from the largest hand clinics? Patients need to retain confidence through contact with the surgeon who performed the operation. In large clinics where the patient may see a different, often junior, doctor on each postoperative visit, such continuity of psychologic support is lacking in this important caring phase of recuperation. I believe this is the reason hand therapists were invented.

A 60-year-old, rational and psychologically well integrated woman developed a prolonged flare reaction after an uncomplicated limited fasciectomy of one ray only. All was well 6 months later and she requested me to operate on the other hand. Exactly the same sequence occurred: uncomplicated healing, then catastrophe. I suggest that a constitutional factor was influencing her tissue reaction. Such a major reaction after minor intervention makes me wonder if operating in two stages, as suggested in this article, may merely be doubling the risk of RSD. Could not a preoperative test be developed to predict this problem?

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*Guest Editor*