



A survey of clinical manifestations and risk factors in women with Dupuytren's disease

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Dupuytren's disease is very common, with a prevalence of up to 40% in the Scandinavian population. Although many epidemiological surveys have been conducted, little is known about its aetiology. Multiple risk factors in Dupuytren's disease have been identified. About 80% of the affected patients are male. Even though recent data suggest similar outcome after surgical treatment in the female patient, recurrence after surgery is more frequent. To assess Dupuytren's disease in women, a record analysis and a survey of risk factors was conducted in 130 female patients surgically treated at our institution between 1988 and 2005. With a response rate of 52%, 65 women were included (6 patients were confirmed dead). The mean age of onset of the disease was 50 years and 6 months. After a mean follow-up of 7 years and 7 months (2y1m to 21y9m), recurrent disease after surgery was reported in 42%. Bilateral disease was present in 54%, unilateral in 26% right and 20% left hands. The fifth finger was involved in 77%, the 4th finger in 48% and the 1st ray in 14%. Ectopic lesions were seen in 19%, with a positive family history in 55%. Only one patient had a confirmed alcohol abuse; 22% were smokers. There were 32% manual workers. Shoulder pain was present in 54% of the patients, with confirmed diagnosis of frozen shoulder syndrome in 45%. High cholesterol was diagnosed in 39% and only 6% had diabetes. Epilepsy was seen in 5%. High disease recur-

rence and factors related to an aggressive course of the disease are present in female patients with Dupuytren's contracture, with a high family history occurrence, bilateral disease and associated Ledderhose disease. Several known risk factors were present: high cholesterol, smoking and manual work. Frozen shoulder showed a very high prevalence in women with Dupuytren's disease.

Keywords : Dupuytren's disease ; women ; frozen shoulder ; epidemiology ; risk factors.

INTRODUCTION

Dupuytren's disease is very common, affecting up to 70% of mainly the northern European population (1,4,8). A geographic variation in prevalence and frequent occurrence in some families strongly

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suggest a genetic background (9). The course of the disease is variable and unpredictable (1). Recurrence after surgery is very frequent, up to 70% (7). Aggressive forms may require multiple surgical corrections with flap reconstructions. In some cases even partial hand amputations are inevitable. Several epidemiologic surveys on prevalence have been conducted in the past. A number of risk factors for recurrence and aggressive behaviour of Dupuytren's disease have been identified. These are family history, bilateral disease, first ray involvement, ectopic lesions and young age of onset (under 50 years) (1,9,10). Associated findings with Dupuytren's disease are smoking, alcohol abuse, high cholesterol, frozen shoulder syndrome and diabetes (3,4,6,8,14,15). Other factors such as epilepsy and manual work are more controversial (3,8,11).

Dupuytren's disease is more uncommon in women and in general, a male-to-female ratio of 5:1 is seen (4,8,12). Although surgical outcome appears to be comparable in men and women, the disease tends to flare up more frequently in women (2,16,17). To assess clinical manifestations and risk factors in the female population with a lower incidence and somewhat different clinical behavior, a retrospective study with prospective evaluation of risk factors was conducted.

PATIENTS AND METHODS

The records of 135 women operated on for Dupuytren's disease between 1988 and 2005 at the Orthopaedic Department of Leuven University Hospital were studied. Note was made of disease presentation with side and ray involvement, age, associated diseases and risk factors, surgery and recurrence. The patients were invited to fill in a form with specific questions on disease manifestation, surgery and outcome, risk factors and associated diseases. More specifically they were asked for current ray and side involvement of the hand, ectopic lesions (Garrod's knuckle pads or Ledderhose plantar fibrosis), recurrence after surgery, age of onset, alcohol consumption and smoking habits, manual work, known high blood cholesterol, epilepsy, diabetes and family members with Dupuytren's disease. Both the retrospective record data and the prospectively gathered data of the survey were put together and compared with literature data.

Table I. — Overview of the acquired data : clinical manifestations and recurrence (L = left, R = right, n = number of patients, y = years, m = months, % = percentage of the patients affected)

	data
1 st web	L:8 R:6 14%
2 nd ray	L:6 R:6 15%
3 rd ray	L:12 R:12 26%
4 th ray	L:23 R:22 48%
5 th ray	L:32 R:38 77%
Bilateral	n = 35 (54%)
Unilateral right	n = 16 (26%)
Unilateral left	n = 13 (20%)
Recurrence	n = 27 (42%)
Mean age of onset	50y6m (24y-85y)
Mean age 1 st surgery	58y4m(25y-86y)
Mean follow-up	7y7m (2j1m-21j9m)

RESULTS

There was a response rate of 52% and 65 women were included. The records confirmed the death of 6 patients at a mean age of 82 years. The mean age of the responding patients was 65 years with 8% being over 80 years. In the non-responding patients it was 71 years, with 29% over 80 years. The results with respect to disease manifestation are shown in table I. There was a mean follow-up of 7 years and 7 months (2y1m-21y9m). The mean age of onset of the disease was 50 years and 6 months (24y-85y). The mean age of the first surgical intervention was 58y4m (25y-86y). Bilateral disease was present in 54%, unilateral in 26% right and 20% left hands. Clinical manifestation of the disease showed involvement of the fifth ray in 77%, 4th ray in 48%, 3rd ray in 26%, 2nd ray in 15% and 1st ray in 14% (fig 1). Recurrent disease after surgery was reported in 42%. The risk factor distribution is shown in table II. An associated Ledderhose disease was seen in 12 patients (19%) and one patient also showed Garrod's knuckle pads (fig 2). There was a positive family history in 55%. Only one patient had a confirmed alcohol abuse, but 22% were smokers. The patient with known alcohol abuse mentioned an important amelioration of her finger contractures after having lowered the abuse because liver cirrhosis was diagnosed. There were 32% manual workers. Shoulder pain was present in 54% of the

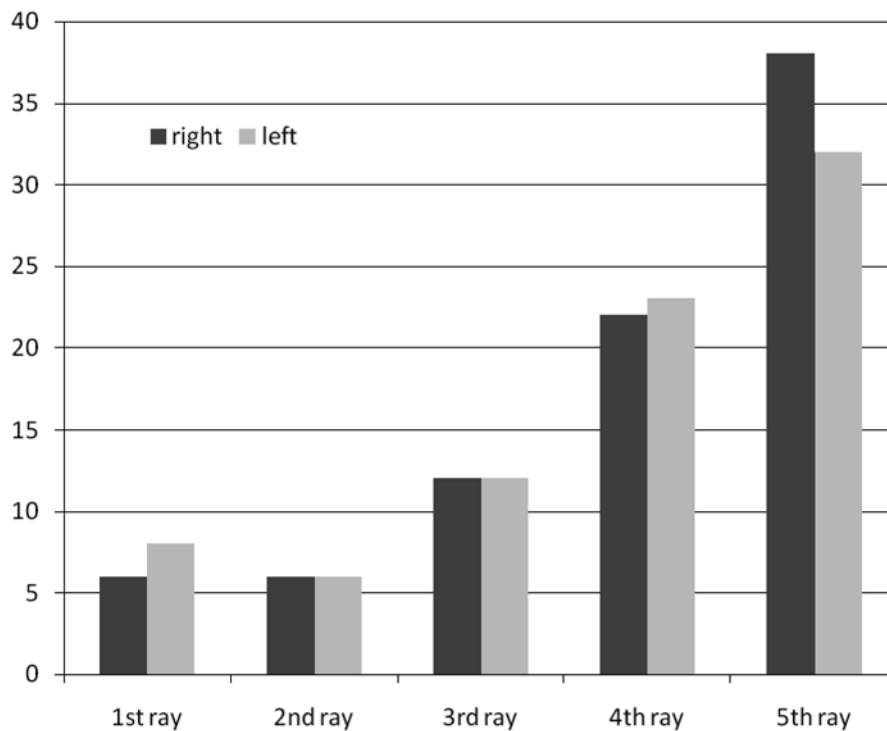


Fig. 1. — Overview of ray manifestation in Dupuytren's disease in women, showing a predominantly 4th and 5th ray involvement

Table II. — Risk factor distribution in the 65 included women operated on for Dupuytren's disease (n = number of patients)

	n/65	%
Ledderhose	12	19
Knuckle pads	1	2
High cholesterol	25	39
Diabetes	4	6
Epilepsy	3	5
Frozen shoulder	29	45
Family history	35	55
Alcohol abuse	1	2
Smoking	14	22
Manual work	21	32

patients, with confirmed diagnosis of frozen shoulder syndrome in 45%. High cholesterol was diagnosed in 39% and only 6% had diabetes. Medically treated epilepsy was seen in 3 patients (5%).

DISCUSSION

Little is known on clinical manifestations and epidemiology of Dupuytren's disease in women as



Fig. 2. — Female patient presenting with simultaneous Dupuytren's disease and Ledderhose plantar fibrosis, as was seen in 19% of the women.

a subgroup with a significantly lower prevalence (2). The hand involvement and ray distribution were very similar to the findings in epidemiologic studies on Dupuytren's disease, showing bilateral disease

in half of the patients with slightly higher prevalence in right hands and a decreasing presence of contractures from the ulnar to the radial side of the hands (5,13,15). Anwar *et al* have shown that women present with Dupuytren's disease at a later age (63 years) than men (2). In this study however, the mean age of onset of 50 years appears similar to known epidemiology, but surgery was apparently postponed to 8 years later, which may explain a higher age at presentation (1).

This study has demonstrated a high recurrence rate (42%) in women after a mean follow-up period of 7 years. Factors known to be associated with an aggressive course were present in female patients with Dupuytren's contracture, with a high family history occurrence, bilateral disease and associated Ledderhose disease (1,9,10). Several known associated factors were present in women: high cholesterol, smoking and manual work (3,4,6,8,14,15). Alcohol abuse as a risk factor could not be confirmed in this study. However anecdotically, the one patient with known abuse mentioned an important amelioration of the finger contractures after lowering her alcohol consumption. Only 4 patients had diabetes. However, this low number may be explained by the fact that diabetic patients are often not operated unless contractures are severe, due to reasons of general health status and high risk of recurrence.

Previous studies on patients with frozen shoulder syndrome have demonstrated an association with Dupuytren's contracture in about 52% and both diseases have been suggested to have similar underlying pathways (15). This study has shown that frozen shoulder has a similar high prevalence (45%) in women with Dupuytren's disease.

Limitations of the study are its retrospective nature although a prospective evaluation was done. There was a response rate to the questionnaire of only 52%, but this may be due to the important age difference between the responding and non-responding group, the latter being much older. Unreported deaths, incapacity to fill in answer sheets due to higher age, and relocations to elderly homes all make it difficult to obtain a higher response rate. In addition, this survey is based on patients operated for Dupuytren's disease and

consequently, a specific population with presumably more severe finger contractures has been studied, since patients with minor contractures will often not seek surgical advice.

CONCLUSION

This survey on Dupuytren's disease in women has shown a similar disease manifestation as previously shown in epidemiologic studies. High recurrence rates and presence of several known risk factors have been demonstrated. A very high association with frozen shoulder was seen and this may point to similar underlying pathways. Further multicenter prospective studies are needed to understand the significance of these findings in the course of Dupuytren's disease in women.

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