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ORIGINAL STUDY

A high prevalence of Dupuytren's disease in Flanders

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Dupuytren's disease has been the subject of numerous epidemiological surveys attempting to expand our knowledge on its origin and spread. In Flanders, although numerous studies on surgical outcome have been reported, information on prevalence of Dupuytren's disease is lacking. Therefore, Flanders' population in a non-hospital environment was studied by a clinical evaluation performed by a single hand specialist. Five different market places spread geographically in the 5 Flemish provinces of Belgium were visited to examine the hands of randomly chosen individuals over 50 years old visiting the market. In all, 500 people were examined ; Dupuytren's disease was found to be present in 32% of the population. Nodules without finger contractures (stage 1) were seen in 24% of the population, in comparable proportions in males (28%) and females (20%). However, finger contractures (stage 2) were seen in 8%, significantly more often in males (11%) than in females (4%). The prevalence of stage 1 is somewhat lower in individuals over 80 years old. In men, the incidence of stage 2 was found to increase with age. These findings were compared with literature data on the prevalence of Dupuytren's disease in other countries and populations. It appears that, similar to northern Europe, Dupuytren's disease is also a common disease in Flanders.

Keywords : Dupuytren's disease ; prevalence ; Flanders.

INTRODUCTION

Dupuytren's disease has been the subject of numerous epidemiological surveys attempting to expand our knowledge on its origin and spread. In these reports on disease occurrence, the term 'prevalence' is frequently misused : "prevalence" refers to the proportion of individuals who are affected by the disease in a given population, while the information given in some reports in fact relates to incidence , i.e. the annual number of people diagnosed with the condition (*7*). Due to a variable geographical prevalence and a high familial occurrence, a genetic background is suspected, possibly by means of an autosomal dominant inheritance pattern with incomplete penetrance (*8*).

In Flanders, although numerous publications on surgical outcome have been reported, information on prevalence of Dupuytren's disease is lacking. Seeing as surgery for Dupuytren's disease is very common in daily practice, the authors shared the strong impression that the disease is widespread in Flanders. Moreover, it is often coincidentally noticed in patients presenting with other non-Dupuytren related complaints. After hand surgery,

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nodules also regularly occur in the patients' palms, at times transitory and often related with a chronic reactive pain syndrome, which in addition is itself often seen after surgery for Dupuytren's disease (*13*). These findings may suggest that, next to inheritance, some biochemical disturbances may be responsible for Dupuytren's disease (*12*).

These reflections have inspired the authors to investigate Flanders' population in a non-hospital environment with the clinical evaluation through the eye of a hand specialist.

MATERIAL AND METHODS

The first author examined the local population at local markets spread in Flanders. In each of the 5 Flemish provinces of Belgium, a market place was visited to examine the hands of randomly chosen individuals visiting the market. The only criterion was that these individuals looked Caucasian and older than 50 years, with a parallel male to female ratio. On every market place, 100 people were examined and digital photographs of their hands were taken. Nodules and contractures were noted. The presence of nodules without contractures was categorized as stage 1 Dupuytren's disease. If contractures were present, these individuals were categorized stage 2 Dupuytren's disease.

The prevalence of both stages was compared between the male and female population. Different age groups were compared. The data were then compared with the literature on prevalence of Dupuytren's disease.

RESULTS

A comparable high prevalence of Dupuytren's disease was seen in all five of Flanders' provinces.

In the group of 500 individuals that were examined, a diagnosis of Dupuytren's disease in any one of its forms (nodules or finger contractures) was made in 32%. Nodules without finger contractures (stage 1) were seen in 24% of the population, comparable in male (28%) and female (20%). However, finger contractures (stage 2) were seen in 8%, but significantly more often in males (11%) than in females (4%). The prevalence of stage 1 is somewhat lower in people over 80 years old. In contrast to women with a constant prevalence of stage 2 DD, the incidence of stage 2 in men was found to significantly increase with age ($p = 0.03$).

Table I. — The prevalence of Dupuytren's disease (DD) in the different age groups, showing both absolute (n = number) and relative (%) numbers in all age groups of the male (m) and female (w) population (pop). Stage 1 with only nodules and stage 2 with finger contractures were separated

Age (y)	n pop	n DD	%	n stage 1	%	n stage 2	%
Men							
50-55	10	2	20	2	20	0	0
56-60	18	4	22	3	17	1	6
61-65	47	20	43	15	32	5	11
66-70	48	13	27	10	21	3	6
71-75	69	28	41	18	26	10	15
76-80	45	23	51	19	42	4	9
80-100	28	12	43	6	21	6	21
Total men	265	102	39	73	28	29	11
Women							
50-55	20	4	20	3	15	1	5
56-60	18	5	28	4	22	1	6
61-65	39	12	31	11	28	1	3
66-70	41	8	20	7	17	1	2
71-75	65	13	20	10	15	3	5
76-80	34	12	35	10	29	2	6
80-100	18	2	11	1	6	1	6
Total women	235	56	24	46	20	10	4
Total all	500	158	32	119	24	39	8

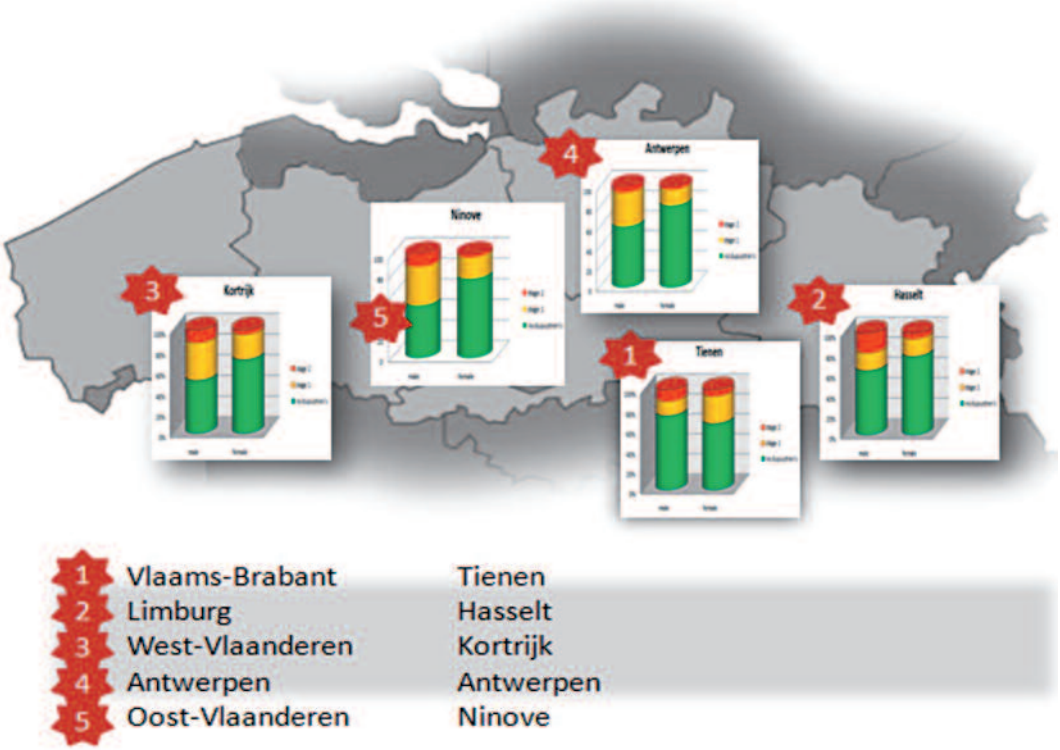

Fig. 1. — Illustration of the geographical spread of the investigated market places in the 5 Flemish provinces in Belgium. Prevalence of DD in men and women over 50 illustrated in percentages of the examined population. The results per province show the high prevalence of Dupuytren's disease both in men and women with a lower but still noteworthy occurrence of contractures (green = no signs of DD, yellow = stage 1 DD, only nodules, red = stage 2 DD with finger contractures).

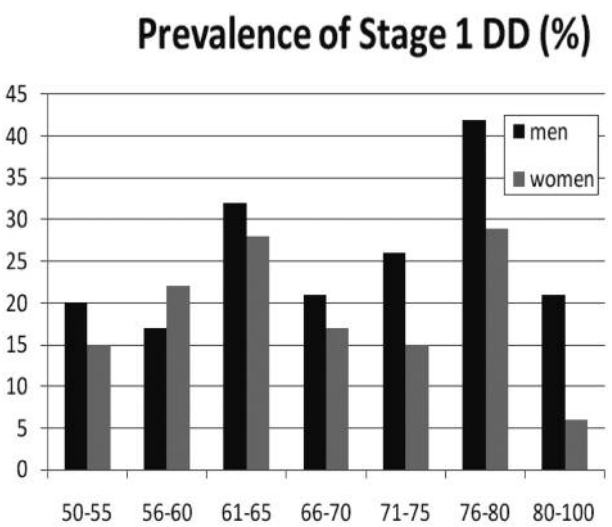

Fig. 2. — Diagram of the prevalence of stage 1 Dupuytren's disease in the population over 50 years. The incidence is higher in men than women, but remains mostly constant around 24% in all age groups, with a decrease in individuals over 80.

Comparison of these results to literature on prevalence of Dupuytren's disease leads to the conclusion that these are high prevalence figures. Stage 2 Dupuytren's disease in Flanders has a prevalence similar to the Scandinavian reports.

DISCUSSION

In this study, we have seen Dupuytren's disease in about 32% of Flemish individuals over 50 years old, 39% in the male and 24% in the female population. The more severe forms with finger contractures were seen mostly in men, with a prevalence of 11% compared to 4% in women. Weighed against literature on Dupuytren's prevalence, these figures are very high. However, an important variance is seen in the prevalence figures of literature reports. This high variability could be explained by numerous reasons.

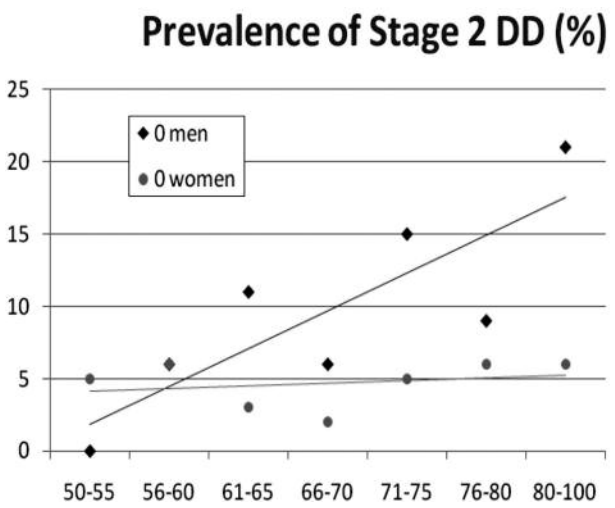

Fig. 3. — Graph of the prevalence of stage 2 Dupuytren's disease in the population over 50 years. The incidence is much higher in men with a mean of 11% compared to 4% in women. In women, this prevalence is constant in all age groups, but in men it significantly increases with age with a prevalence of 21% in men over 80.

First and most obvious is the possibility of true regional differences in the prevalence of Dupuytren's disease. Based on the earliest and most numerous studies done in somewhat limited geographical areas, i.e. the Scandinavian populations, the northern part of the UK and Scotland, the popular concept developed of the 'Viking' disease with a 'Nordic' origin (*5,6,8*). However, only few studies on the prevalence of Dupuytren's disease have been performed in non-Scandinavian areas. Nevertheless, in every study that has been conducted, the disease does appear to be present in the population that was examined and this is seen all over the world. Dupuytren's disease has been reported to be present in every one of the three races (Black, Caucasian and Mongol). However, no systematic population research in any form has been conducted in African, Indian, Chinese or South-American countries. There, the only reports are incidence reports with case series, some of them even including relatively high numbers of cases (*1-4,10,14-17*). Nevertheless, the existence of these reports does confirm the presence of Dupuytren's disease in all races all over the world. The only approach to assess a prevalence is to go and do the research methodically, which has not often been done up until now, as many of these countries have other (medical) priorities to attend.

Next to potential true regional differences, there are many other reasons that may possibly account for the assumed high variability in Dupuytren's prevalence. First, there are the diagnostic criteria (*7*). What is considered to be Dupuytren's disease ? If the diagnosis is restricted, the presence of nodules without contractures is often not included in prevalence reports. Second, there is an observer bias. Obviously, there is a huge difference between single or multiple observer studies, and between studies done by hand surgeons, general practitioners and instructed students or nurses (*12*). Third, there is a population bias with a high variability between the reports considering age, sex, comorbidity, clinical and community settings.

Dupuytren's disease has a high prevalence in Flanders. With age, increasing numbers of contractures of stage 2 are seen in men. This may be due to a traumatic component or a genetic predisposition, causing the increased occurrence of the disease over time with higher age (*9*). Also, stage 1 Dupuytren's disease may go to a stage 2 contracture with increasing age. In women, prevalence is lower and similar in all age groups. Stage 1 Dupuytren's disease appears to have a lower prevalence in people over 80. It has been suggested that this may be due to an increased (cancer) mortality in patients with Dupuytren's disease (*6,11*). However, contractures do appear to have a high prevalence in people over 80 and this may challenge the earlier suggestion.

In conclusion, analogous to northern Europe, Dupuytren's disease is also a common disease in Flanders.

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