Dupuytren's contracture in pensioners at the Royal Hospital Chelsea

ABSTRACT—Dupuytren's disease of the hands was present in 55 (13.75%) of the 400 elderly ex-servicemen living at the Royal Hospital Chelsea. Five men (9.1%) reported the condition in either a parent or sibling, but none was aware of an affected child. The prevalence of heavy drinking, non-insulin dependent diabetes or manual occupation was statistically the same in those with or without the condition.

Overall, both hands were equally affected, but they differed in severity in 29 men. In milder cases the left hand was the more severely affected (grades 1 and 2); the reverse was true when the difference in severity was greater (grade 3).

Since the original description of Dupuytren's disease [1] attempts have been made to link it with a variety of other conditions. These have included trauma, alcoholism and cirrhosis, [2] epilepsy [3] and diabetes mellitus [4]. A genetic link is accepted [5]. The condition is more common in men than women and becomes increasingly common with advancing age [6]. The prevalence in elderly men has been reported as high as 28.9%, rising to 64.3% in surveys of affected families [7].

There are still many physicians who, with a knowing wink when they spot that one of their patients has a Dupuytren's contracture, mentally register that he is an alcoholic. This paper is an attempt to disprove this fairy story. It describes a survey of Dupuytren's disease in a population of elderly men drawn from all parts of the United Kingdom and Ireland.

Subjects and methods

There are just over 400 ex-military service pensioners in the Royal Hospital Chelsea. The opportunity was taken to inspect their hands for evidence of Dupuytren's disease during routine medical attendance.

The diagnosis was made in the presence of palmar fascial thickening with or without contracture but with evidence of skin tethering.

Severity was assessed as follows.

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Table 1. Severity of Dupuytren's contracture in affected hands

Severity grade	Left hand	Right hand
1	24	22
2	7	8
3	11	11
Operated	5	6

Table 2. Difference in severity of Dupuytren's contracture between pairs of hands

Number of grades difference	Left hand worse	Right hand worse
1	12	6
2	5	1
3	1	4

Grade 1: thickening with skin tethering but no contracture. Palm and fingers able to be placed flat on surface.
Grade 2: as above but with flexion not sufficient to bring finger tip beyond a vertical line from the carpo-phalangeal skin fold.
Grade 3: flexion greater than the above. 'Operated': previous surgery, irrespective of present state.

Men with the condition were asked to state when they first became aware of it and if any family member was affected.

Alcohol consumption, occupational history and blood levels of gamma-glutamyl transferase (GGT) were assessed from the individual's record on admission to the hospital. The presence of diabetes mellitus was noted from the current case history.

A case control group was found by taking the next pensioner without the condition on the nominal roll and checking his documents as above.

Results

We examined 400 pairs of hands and identified 55 cases of Dupuytren's disease, a prevalence of 13.75%. The men's ages ranged from 65 to 97 years (mean 76.2), those of the control group ranged between 65 and 99 years (mean 75.5). The decade of onset was given with reasonable accuracy in 39 cases (Table 3). The remainder were too vague or uncertain to be reliable.

Table 3. Decade of onset of Dupuytren's disease

Decade	3	4	5	6	7	8	9
Number of cases	2	0	9	8	11	8	1

The severity of the condition in either hand was similar overall for all grades (Table 1). A difference in the degree of severity between pairs of hands was present in 29 men: a difference of one grade in 18 men and two grades in six men. In these, the left hand was the more affected one (17 cases versus 7, $p < 0.05$). In five men with a three grade difference, the right hand was worse in four (NS).

Two subjects knew that their fathers had had the condition, and three each had a sister with it. None was aware of affected offspring.

Alcohol consumption was recorded on first admission to the Royal Hospital and expressed as units per week (Table 4). In grades 1 and 2 contracture was noted in 35 moderate (up to 24 units weekly) and non-drinkers, compared with 40 unaffected men of similar drinking habit. In heavier drinkers, 20 cases of Dupuytren's disease were found compared with 15 men of similar habit who were not affected. These differences are not statistically significant.

The gamma glutamyl transferase (GGT), recorded on admission, was compared in patients and controls (Table 5). Raised levels were no more common in cases than in controls—nine in each group—although the fact that this information was not available for 13 cases made the percentage of cases with known enzyme levels higher in the case group (21.5% compared with 16.7%). The routine estimate of GGT on joining the hospital began about 10 years ago, hence the absence of information in 14 cases who had been there longer.

There was no difference in the occupational histories between affected and control subjects after leaving the services. 'Manual' occupations included working in heavy industry, quarrying, mining, building eral labouring, gardening and horse breaking man with Dupuytren's had been a brewer's draym

Non-insulin dependent diabetes mellitus (NI was present in six affected and six control su (10.9%).

Table 4. Alcohol consumption in male pensioners with Dupuytren's disease and in matched control subjects

Weekly consumption (units)	NIL	1–24	25–49	50–99	100+
Dupuytren's disease	7	28	11	7	2
Controls	8	32	8	5	2

Discussion

This survey was prompted by reports that the tion might be expected in as many as a quarter pensioners. Hueston [8] has found an inciden 25.3% in elderly men in Victoria, Australia and [5] found up to 28.9% in 250 men aged 75 to 84 in Edinburgh geriatric units. The prevalen 13.75% in the Royal Hospital pensioners is clo that of Early [7] who reported 14.2% in 65 to 7 olds and 18.2% in 75 to 84 year old men. In the sent series 27 men were between 65 to 74 years ol 28 were over 75.

The prevalency in our survey may be lower for possible reasons: first, underdiagnosis is possible at least as far as the palmar lesion is concern unlikely. Two men who had palmar thickening of degree but without skin tethering were exclude their inclusion would not bring the prevalence si cantly nearer to that in Victoria or Edinburgh.

A second possibility is that the findings in the two locations represent local pockets of high dence, possibly for genetic or social reasons. The dence in Bury and in our pensioners is very si and perhaps our population, taken from all ove UK and Ireland, is more representative of the co as a whole than the Edinburgh sample.

A final possibility is that people likely to dev Dupuytren's contracture were less likely to be a ted to this hospital. This is not, of course, delib policy but the Royal Hospital is primarily a retire home and although it provides continuing co hensive medical and nursing care to all the pensi living there, men known to have severe alcohol lems or uncontrolled epilepsy would not nor have been admitted. They might be more at ri developing Dupuytren's disease if one accepts the of Wolfe, Summerskill and Davidson [2] and Radivojeric and Williams [9] on the role of alcoh and epilepsy. However, we are aware of only one men being rejected on the grounds of drinking der and none on the grounds of epilepsy in the three years.

Table 5. Gamma glutamyl transferase levels in male pensioners with Dupuytren's disease and in matched control subjects

GGT level	< 49 units	49–100 units	>100 units	Unknown
Dupaytren's disease	33 (78.6)	7 (16.7)	2 (4.8)	13
Controls	45 (83.3)	3 (5.6)	6 (11.1)	1

We feel, therefore, that the prevalence found reported here is probably representative of the general elderly male population in this country.

The assessment of the severity of the condition in each hand produces an apparent tendency for the left to be worse than the right in milder cases, but in the five men with marked clawing of one hand only, the right was worse in four cases. This was not because more operations had been done on the right. The former difference is statistically just significant, the latter is not. We can offer no explanation for it.

Where the decade of onset could be given with reasonable certainty, the pattern follows that described by James [10], with the majority beginning or being first noticed in middle and early old age. As several men with minimal disease were not aware of any abnormality, the true time of onset may be earlier.

Five men (9.9% of cases) were aware of another case in the family, which accords with James's observations [10]. Higher frequencies are found when family members are examined.

There is a tendency for men with higher alcohol consumption to have more Dupuytren's disease, but the numbers in this review do not reach statistical significance. Most cases occurred in non- or modest drinkers. Alcohol consumption was recorded on entry to the hospital, often several years earlier, but this criticism applied both to cases and controls. It is likely that many in both groups consumed more than that recorded here.

The observations of the gamma-glutamyl transferase (GGT) levels do not provide any useful information.

Patients often attribute their condition to their occupation but such an association, thought possible by Dupuytren, was disproved by Early [7] and Herzog [11]. Our results are unlikely to refuel that debate.

More recently Noble and colleagues [12] have suggested that the condition is more common in those with diabetes mellitus. No such association is evident in this series.

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