The Prevalence of Dupuytren's Disease Among 2 Different Ethnic Groups in Northern Norway

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Dupuytren's disease is common in Norway and northern Europe but rare in individuals who are not of European descent. The aboriginal Sami of the northernmost parts of Scandinavia are ethnically distinct from most Norwegians. The occurrence of Dupuytren's contracture is unknown among the Sami. Data were collected on 456 individuals older than 50 years who were living in an area 750 km north of the arctic circle. Dupuytren's disease was found in 31 men and 3 women. The prevalence was lower among Sami than Norwegian men of all ages. The prevalence of having a grandson with Dupuytren's disease was also lower among Sami than Norwegian grandparents. Although none of the differences reached statistical significance, the results show that the prevalence is not very low among Sami men but probably lower than among ethnic Norwegians living in the same area, confirming the importance of a genetic disposition to the disease. (J Hand Surg 2002;27A:115-117. Copyright © 2002 by the American Society for Surgery of the Hand.)

Key words: Dupuytren's contracture, Sami, Lapps, aboriginal, prevalence.

The cause of Dupuytren's contracture is still unknown. There are indications that a genetic disposition is important. The condition is common in white populations but rare in other races with only few cases reported among Asians[1–3] and blacks.[4,5] Dupuytren's contracture seems to be more common in northern Europe and areas where northern Europeans have emigrated to than among southern Europeans and their former colonies.[6] Work-related and environmental factors may also have a role.[7,8] The disease is practically unknown in India; however, Srivastava et al[9] reported Dupuytren's contracture among Indians and Pakistani living in England.

Dupuytren's disease is seen frequently in southern Norway. Mikkelsen[10] reported that 17.5% of men and 6.3% of women older than 50 years were affected. The aboriginal Sami (Lapp) people live in the far north of Norway. We were informed by physicians of Sami and Norwegian background working in northern Norway that they were unable to remember a single Sami patient with Dupuytren's contracture. The presence of 2 ethnically distinct populations living together under the same conditions makes it possible to shed further light on the importance of a genetic disposition for this disease.

The purpose of this survey was to study the prevalence of Dupuytren's disease among 2 different ethnic groups, the Sami and ethnic Norwegians, living in the same area of northern Norway.

Materials and Methods

Members of 4 rural municipalities, Alta (total population, 16,537), Porsanger (4,422), Kautokeino

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Table 1. Prevalence of Dupuytren's Disease Among Individuals With 4 Sami or 4 Norwegian Grandparents

	Sami			*Norwegian*		
Age (y)	−	+	*%*	−	+	*%*
Men						
50–59	30	1	3.2	28	1	3.4
60–69	14	3	18	32	8	20
70–79	10	1	9.1	9	5	36
80+	2	0	—	5	0	—
Women						
50–59	25	0	—	20	0	—
60–69	24	0	—	25	0	—
70–79	15	2	12	13	0	—
80+	10	0	—	7	0	—

+, Dupuytren's disease; −, no Dupyutren's disease.

(3,140), and Karasjok (2,857) in Finnmark, the northernmost county in Norway, were approached at random and asked to participate in the study. These municipalities were chosen because they have a mixed population of Norwegian, Sami, and Finnish descent. The proportion of ethnic Norwegians is high in the first 2 municipalities and that of Sami in the last 2. After giving informed verbal consent, respondents were asked their age, whether they had surgery for Dupuytren's disease, and the first language of each of the 4 grandparents. The grandparents' language was considered to indicate their ethnic background. The subjects' hands were then examined for signs of Dupuytren's disease. The data were collected by 2 of the authors who traveled in this area, located approximately 750 km north of the arctic circle, for 4 weeks for this purpose.

The results were evaluated statistically with the chi-square and Mantel-Haenszel summary chi-square tests (EpiInfo 6; Centers for Disease Control and Prevention, Atlanta, GA). p values of $<.05$ were considered statistically significant.

The study was approved by the region's medical ethics committee.

Results

Information was gathered on 504 individuals. We excluded 47 subjects who were younger than 50 years and 1 subject whose grandparents were not Norwegian, Sami, or Finnish. None of these subjects had Dupuytren's contracture. Of the remaining 261 men and 195 women older than 50 years, 137 had 4 Sami grandparents, 153 had 4 Norwegian grandparents, 41 had 4 Finnish grandparents, and 125 were of mixed ancestry or did not know the first language of all their grandparents.

Dupuytren's contracture was found in the hands of 31 men and 3 women. Both hands were affected in 23 cases. Sixty-nine rays were involved: 1 second ray, 8 third, 38 fourth, and 22 fifth rays. Forty-eight rays had only palmar changes and no finger contractures, 19 rays had a total contracture of $<90°$, and 2 rays had a contracture of $>90°$. One man had previously had surgery for Dupuytren's contracture.

Four Dupuytren's contractures were found among individuals of pure Finnish descent. No contractures were detected among Norwegian women and only 2 among Sami women. Five (8.2%) contractures were found among men of pure Sami descent and 14 (15.9%) among those of Norwegian descent ($p = .17$, chi-square test). The age distribution is shown in Table 1. The prevalence of contracture among men was lower in the Sami in all age groups; this difference was not statistically significant ($p = .44$, summary chi-square).

To make use of the data from individuals of mixed descent, the prevalence of a Norwegian or Sami grandparent having a grandson with Dupuytren's contracture was calculated (Table 2). This prevalence was lower among Sami grandparents of grandsons in all age groups up to 79 years (summary chi-square, $p = .028$; Martel-Haenszel weighted odds ratio, 1.77; 95% confidence interval, 1.07–3.09). When patients older than 80 years were included, in cases in which contractures had only been detected in Sami, the difference was just below statistical significance (summary chi-square, $p = .064$; Martel-Haenszel weighted odds ratio, 1.60; 95% confidence interval, 0.98–2.76).

Discussion

The Norwegian word for patch is "lapp." The Sami used to be called Lapps. This is now considered a

Table 2. Number of Sami and Norwegian Grandparents of Men With and Without Dupuytren's Contracture

Age (y)	*Sami*			*Norwegian*		
	−	+	*%*	−	+	*%*
50–59	151	4	2.6	144	6	4.0
60–69	76	14	16	158	37	19
70–79	60	8	12	51	22	30
80+	10	2	17	24	0	—

+, Dupuytren's disease; −, no Dupuytren's disease.

derogatory term because it is said to refer to the mended and patched clothes that poor Sami used to wear. The Sami are descendants of nomadic people who first inhabited Scandinavia thousands of years ago as the last ice age receded. They were later gradually pushed into the very north as Scandinavia was colonized from the south by Indo-Europeans from continental Europe. It is unclear from where the Sami originated. The Sami languages belong to the Finno-Ugric branch of the Uralic family, and it seems likely that the Sami came from the Ural region in central Asia. There are 30,000 to 40,000 Sami in Norway and about 17,000 in Sweden, 5,700 in Finland, and 2,000 in Russia.[11] The criteria for calling oneself Sami are quite loose: it is enough that a single great-grandparent had Sami as his or her first language.[11] The number with 4 Sami-speaking grandparents is therefore probably much lower than the official estimate of the total Sami population.

The Sami economy used to be based mainly on reindeer herding and fishing; in modern Norway the Sami are largely integrated into general society and lead much the same lives as their neighbors of Norwegian ancestry. It is therefore unlikely that environmental or work-related factors influenced our findings.

The number of Dupuytren's cases we found among women was too low to allow any conclusions. Despite our small sample, the prevalence we found among Norwegian men is almost the same as that found for men in southern Norway.[10] There was a lower incidence of Dupuytren's disease in Sami men of all age groups; however, this difference was not statistically significant, probably because of the small sample size. Also, the difference in prevalence of a Norwegian or Sami grandparent having a grandson with Dupuytren's contracture was not statistically significant when all grandsons were included. This difference, however, was statistically significant when only grandsons up to the age of 79 years were counted. It is difficult to ascribe this to any other cause than the small sample size, although Mikkelsen et al[12] found a lower prevalence among Norwegian men in their 80s than in their 70s because of increased mortality in those with Dupuytren's disease.

Whether the presence of Dupuytren's disease among Sami results from original inherent disposition or admixture with the general Norwegian population is not known. Unlike the aboriginal people in Australia or America who were isolated until relatively recently, the Sami have longer had interactive contact with Europeans.

Contrary to earlier notions, Dupuytren's disease is not uncommon among Sami men. Its prevalence appears lower than that in the ethnic Norwegians living in the same area, confirming the importance of a genetic disposition for the disease.

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