SURVEY 2

The prevalence of intermittent digital ischaemia (Raynaud's phenomenon) in a general practice

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SUMMARY. The prevalence of intermittent digital ischaemia (IDI) has been determined in a sample of 520 patients aged 20–59 selected from the list of a Hampshire general practice. Sixty-three cases were identified using a postal questionnaire (response rate 87 per cent) and, where possible (69 per cent), histories were confirmed by interview. The estimated prevalence of IDI was 8.3 per cent in men and 17.6 per cent in women. A minimum estimate based only on histories confirmed at interview was 5.0 per cent in men and 10.4 per cent in women. Of the 63 cases identified, 12 had consulted their general practitioner because of the problem but only two had been referred to hospital. We conclude that the course of IDI is generally benign.

Introduction

CURRENT knowledge of intermittent digital ischaemia (IDI, Raynaud's phenomenon) has been derived principally from patients referred to hospital. Because these may not provide a representative picture of the disorder as it occurs in the general population, we have carried out a study to estimate the prevalence of IDI and to define its common characteristics in a population registered with a group practice in Hampshire.

Method

A stratified random sample was selected from the list of a Hampshire general practice to include 150 men and 150 women aged 20–39, and 100 men and 100 women aged 40–59. Twenty of these patients were found to have moved from the area and were replaced by a similar selection process. Each patient was sent a short postal questionnaire about symptoms of IDI. Reminders were sent to non-respondents after six weeks.

Probable cases of IDI were identified by the question: "Have you ever had attacks in which any or all of your fingers suddenly became cold and numb, and at the same time turned white?" One of us (J.H.) then attempted to interview all subjects who had answered positively to this question, with a view to verifying the symptoms.

Results

The final response rate (including those who had left the area and could not be contacted) was 87 per cent. Of the 450 subjects who returned questionnaires, 73 reported attacks in which one or more fingers became cold, numb and white. Fifty of these 73 agreed to be interviewed and in 40 the history was confirmed. On detailed enquiry the other 10 said that they had numbness of the digits but no definite colour change, and the diagnosis of IDI was therefore rejected. The analysis which follows is restricted to the 40 confirmed cases together with 23 probable cases, who responded positively to the initial questionnaire but who could not subsequently be interviewed.

Table 1 shows the distribution of cases by age and sex. Thirty-two subjects had developed symptoms before the age of 25, while in seven the onset had occurred at 45 or older. Symptoms had been present for at least one year in all but one case.

Patients varied considerably in the number of fingers affected (Table 2). In general the fingers were involved symmetrically, but in 16 cases the symptoms were confined to one hand only. The middle finger was affected most frequently (Table 3) and the thumb least often. Twenty-one subjects claimed that their toes were also involved on occasions, while the ears and nose were affected in six and two subjects respectively.

Attacks were most often provoked by cold (90 per cent of cases), and only occasionally by worry (6 per cent). Other precipitating factors included washing up

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Table 1. Distribution of cases by age and sex.

Age	Cases (number of questionnaires returned)	
	Males	Females
20–39	8 (130)	22 (135)
40–59	13 (91)	20 (94)

Table 2. Number of fingers affected per patient.

Number of fingers affected	Number of patients	
	Male	Female*
1	4	4
2	4	4
3	1	3
4	2	11
5	2	2
6	0	9
7	1	1
8	4	3
9	1	1
10	2	3

*Information was unavailable for one female patient.

Table 3. Frequency with which different fingers were affected.

Finger	Number of fingers affected*	
	Males	Females
Little finger	16	20
Ring finger	27	51
Middle finger	27	67
Index finger	22	50
Thumb	9	11

*Information was unavailable for one female patient.

(8 per cent) and other manual tasks (29 per cent). Twenty-nine of the 63 patients had experienced symptoms during the summer. In 21 subjects the symptoms had on occasions been of sufficient severity to interfere with their activities. Twelve had consulted their general practitioner because of the problem, but only two had been referred to hospital.

At interview one man reported that his symptoms had been attributed to scleroderma, and five subjects (four men and one woman) volunteered that their symptoms followed an injury to the affected fingers. None of the cases had worked with vibrating tools.

Discussion

There are no reliable, objective criteria to establish a diagnosis of IDI unless the patient is observed during an attack. The accuracy of any prevalence estimate depends therefore on obtaining precise histories, and for

this reason we chose to verify the symptoms reported in our initial postal questionnaire by interview. Unfortunately, despite a letter and repeated phone calls, we were unable to contact 19 positive respondents, and a further four did not wish to be visited. The 50 who agreed to an interview were representative of the whole group as regards age and sex, and in 40 the diagnosis of IDI was confirmed. Assuming that the accuracy of the response to the initial questionnaire was similar in those who could not be interviewed, we estimate the prevalence of IDI in our sample to be 8.3 per cent in men and 17.6 per cent in women. A minimum estimate, based only on confirmed cases and including in the denominator all subjects who were sent a questionnaire, is 5.0 per cent in males and 10.4 per cent in females. It seems unlikely that many true cases will have been missed by the questionnaire.

We are unaware of any previous attempt to measure the prevalence of IDI in the general population. Marshall and colleagues (1976) in their study of Raynaud's phenomenon as a side-effect of beta-blockers found symptoms in only one of their 21 control patients who were receiving methyldopa alone for hypertension. In a study of Raynaud's phenomenon in relation to atypical angina, Miller and colleagues (1981) used two control groups, each of 62 patients. In the first (patients with coronary artery disease) three cases of IDI were found, while in the second (no known heart disease) two cases were identified. These studies suggest a prevalence of less than 5 per cent. On the other hand, Lewis and Pickering (1933), when they questioned medical students and nurses, obtained positive histories in 25 per cent of men and 30 per cent of women. An estimate closer to ours was obtained by Taylor and Pelmear (1976), who in the course of an investigation into vibration white finger in 18 working populations found Raynaud's phenomenon unrelated to vibration in 5.3 per cent of men. Olsen and Nielsen (1978) considered 15 out of 67 Danish female physiotherapists to have primary Raynaud's phenomenon, a prevalence of 22 per cent. In our study the prevalence of IDI in women was two to three times that in men, a ratio similar to that reported in recent hospital series (Porter *et al.*, 1976; Balas *et al.*, 1979).

More than half our cases had developed their symptoms before the age of 25. However, since we were measuring life-time prevalence in a sample of whom the majority were under 40, this should not be taken as a direct measure of age incidence.

Although we did not attempt a comprehensive search for underlying disease in the cases which we identified, it was interesting that five subjects volunteered that their symptoms directly followed trauma to the fingers. This phenomenon was described by Lewis and Pickering (1933) but is rarely reported in hospital series.

Only a small proportion of patients with IDI are referred to hospital (two out of 63 in our series), and few (12) of our patients had consulted their general practitioner. We therefore think that the course in most cases is benign. Porter and colleagues (1976) have suggested that all patients with Raynaud's syndrome should be regarded as at high risk of having auto-immune disease, and have recommended that when the symptoms of IDI are encountered a detailed search for auto-immune disease should be made. While this suggestion may be reasonable practice in patients presenting to hospital, it seems unlikely to be a profitable exercise when the disorder is encountered incidentally in general practice.

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Health centres

"Change continues to occur in individual practices, but we are sadly aware that the health centre as a whole has passed from a phase of growth and development to one of maintaining existing services. The management of the centre is mostly focused on solving problems of operating it, and there is little emphasis on innovation. We do not think that Woodside is greatly different in this respect from similar health centres."

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