MEDICAL PRACTICE

*Occasional Survey***Scabies in Sheffield: a family infestation**

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British Medical Journal, 1978, 1, 761-763**Summary and conclusions**

From June 1972 to May 1973 the medical officer of health and general practitioners in Sheffield referred all suspected cases of scabies to the Hallamshire Hospital skin department. Contact tracing, similar to that in VD departments, was carried out by a specially trained state registered nurse. In all, 1482 cases were found in 609 households. This was ten times the number referred to the skin department in 1971. Infestation was introduced to households mainly by schoolchildren and teenagers, especially by girls. The commonest sources were friends and relatives outside the home. Schools did not play an appreciable part in spread. The secondary attack rate in households was 38%. Notification of cases, adequate treatment within the home, and contact tracing are recommended to halt the present epidemic of scabies.

Introduction

During the present century there have been three epidemics of scabies in Britain. The first occurred during the 1914-18 war and the second a few years before the second world war, reaching a peak about 1943. The third began about 1957 and ten years later the number of patients with scabies had increased

sevenfold in Sheffield and threefold in London.¹ Fluctuations of the disease appear in cycles: about 15 years of widespread infestation is followed by a similar period in which the disease becomes rare. There have been numerous explanations for this, the most popular being the development of herd resistance. Itching in scabies is due to the development of sensitivity and in the first attack this takes about a month, when there is a symptomless carrier state. In any subsequent infestations itching develops very early, possibly at the site of entry of the acarus, which is scratched out before infestation can spread.²⁻³ The time lag between one epidemic and the next would be consistent with a resistant generation that is succeeded by one that has not been sensitised. Lack of awareness by general practitioners trained during periods when the disease was uncommon,²⁻³ poverty and poor hygiene, sexual promiscuity, and increased mobility of populations may all play a part in delaying adequate control, and there may also be fluctuations in the virulence of the infestation.

To establish the most important routes of spread and the reservoirs of infection, we asked the medical officer of health of Sheffield and general practitioners to refer all patients with suspected scabies to the Hallamshire Hospital skin department for 12 months from June 1972.

Methods

If the diagnosis was confirmed the patient was interviewed by a state registered nurse who had been trained in contact-tracing methods similar to those used in VD departments. She completed a questionnaire giving personal details of the patient, age, sex, occupation, and the dates of onset of symptoms and of first seeking medical aid. She attempted to discover the source of the infestation by inquiring about other members of the household, visitors to the home, or any acquaintances—at school or work or elsewhere—who might have had similar symptoms. If a possible source was discovered she visited that person to confirm whether he or she had symptoms, had sought medical advice, or could provide information on possible contacts. Although most visits originated from patients seen at the hospital, some were made to people who declined to attend hospital, even though they had been notified as infested to the medical officer of health.

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The data were assembled by household, and if more than one case occurred the first patient to develop symptoms was identified; this was not necessarily the patient who brought the household to our attention.

Results

We obtained reports of 1482 cases occurring in 609 households. Over half of the first traceable cases in each outbreak were diagnosed by demonstrating the acarus and a further quarter were diagnosed "clinically" in the skin department. In the remaining 112 cases we had to rely on the history as they were traced in the community. A confirmed diagnosis was obtained in a high proportion of the first traceable cases because of the special reporting facilities. Thus 482 were reported from general practice, and of these over a third were seen less than one week and three-quarters less than four weeks from the onset of symptoms. For the 873 contacts diagnosis had to be based on history in the majority, and was confirmed in only 150.

The disease was introduced into the household mainly by school-children and teenagers, the greater number by girls (table I). At other ages there was little difference in the numbers of males and females. Secondary cases in households were not so heavily concentrated in the school ages, but within this group also there were more girls than boys. Schools would be expected to play a major part in the spread of infection, but among the primary cases analysis of the schools attended by patients did not support this. Very few schools had more than one case and there was no evidence of appreciable clustering, even in areas of the city from which several cases were reported. Furthermore, school was mentioned by only five of the 90 boys and by 13 of the 151 girls who could provide such a history (table II). The commonest reported sources, mentioned by over half of both sexes, were friends, followed by relatives living outside the household; together these accounted for 90% of reported contacts. Relatives were the commonest reported source when the first case in the household was a young child. Among children of school age and teenagers the pattern was different for boys and girls; girls reported girl friends as a likely source of infestation several times more often than boy friends, whereas boys reported friends of both sexes with equal frequency. Among the primary cases 169 (65%) of the males and 199 (57%) of the females could give no information about possible contacts.

Once established in the family, by whatever route, infestation became widespread. Thirty-eight per cent of family contacts became infested (table III). The secondary attack rate was highest for pre-school children (49%) and lowest for men (30%). It varied little among families of different size, although there was a high proportion of large families in the study. Just over half had five or more members, whereas in the city as a whole there were only 12.2%.

TABLE I—Age and sex distribution of first and other cases

Age (years)	First cases in household			Other cases (home contacts)		
	No of boys	No of girls	No (%) of both sexes	No of boys	No of girls	No (%) of both sexes
<4	31	23	54 (8.9)	73	64	137 (15.7)
5-9	38	54	92 (15.1)	70	86	156 (17.9)
10-14	50	63	113 (18.6)	50	59	109 (12.5)
15-19	49	102	151 (24.8)	38	69	107 (12.3)
20-24	36	34	70 (11.5)	31	34	65 (7.4)
25-34	21	27	48 (7.9)	47	51	98 (11.2)
35-44	12	19	31 (5.1)	46	54	100 (11.5)
45	22	26	48 (7.9)	44	43	87 (10.0)
Not known		2	2 (0.3)	9	5	14 (1.6)
Total	259	350	609 (100.0)	408	465	873 (100.0)

TABLE II—Type of contact—first cases in household only

Contact	No (%) of boys	No (%) of girls
Not known	169	199
Reported	90	151
Relative outside home	32 (35.6)	43 (28.5)
Friends	49 (54.4)	89 (58.9)
School	5 (5.6)	13 (8.6)
Work or social	4 (4.4)	6 (4.0)
Total	259	350

TABLE III—Secondary attack rate within families, by age

Age (years)	No at risk	Secondary attack rate percentage
<4	263	48.7
5-14	642	41.7
15 males	701	30.4
15 females	671	38.2
	2277*	38.0

* Age not known in three cases.

When the source of infestation could be traced there was usually only one link in the chain—that is, a primary case with one or more secondary cases. Sometimes, however, quite considerable epidemics could be followed through several stages within and between households (figs 1 and 2). Only cases within the city boundary were included, and when their locations were mapped the disease was seen to be disseminated throughout the city but with a concentration in the areas of lower socioeconomic status.

FIG 1—Epidemic 1 in Sheffield showing age, sex, and relationship of affected persons. Vertical lines—transmission within the same household; sloping lines—transmission between households.

FIG 2—Epidemic 2 in Sheffield showing age, sex, and relationship of affected person. Lines as for fig 1.

Discussion

The discrepancy between the number of patients seen in the skin department before the survey began (150 new cases in 1971), the number referred during the survey (609 cases), and the number of infected contacts discovered by the visiting nurse (873 cases) makes it clear that we had been observing only a small proportion of the epidemic. Scabies is a disease of house-

holds and families and predominantly affects children and teenagers.⁷⁻⁹ Spread by contact at school or by venereal contact probably plays an insignificant part. The high incidence among teenage girls could be due to greater contact with younger children in large families and the habit of holding hands.

Inadequate control in the family is the main cause of spread and treatment is often unsatisfactory for several reasons. There is commonly a delay during which the ubiquitous steroid creams are applied. Instructions for using antiscabietic lotion may be erroneous, misunderstood, or even ignored. This is often prescribed to be dabbed on to spots for an indefinite period. Even the most careful, however, forget to paint their soles, a common site for burrows; symptom-free members of the household refuse treatment; and benzyl benzoate stings young children so severely that its application is abandoned.

The best way to control a scabies epidemic is to ensure adequate treatment in affected households and to follow up contacts. The Sheffield Area Health Authority agreed in June 1975 to make scabies once more a notifiable disease.² Health visitors were briefed to check contacts as well as primary cases to ensure that they were cured, and since then there has been a

steady decline in cases referred to the skin department: 103 patients in 1975 and 69 in 1976. On the other hand, the number of notified cases remains remarkably constant (table IV), and age groups and the predominance of females are similar to our survey figures. This is disappointing, but at least in theory the present epidemic should be ending and a decline in numbers is to be expected in the 1980s.

We are grateful to Mrs A Day who carried out the contact tracing, Dr I B Sneddon, Dr S Bleehen, and medical staff of the skin department, Mrs Janet Gyte for the data processing, Dr C H Shaw, Medical Officer of Health for Sheffield at the time, and Dr S Wright, Management Information Unit, Sheffield Area Health Authority (Teaching). We also thank the Endowment Fund of the United Sheffield Board of Governors for its assistance.

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(Accepted 9 January 1978)

TABLE IV—*Scabies notifications: City of Sheffield Metropolitan District*

July-September 1975	..	..	..	..	..	..	..	..	157
October-December 1975	..	..	..	..	..	..	..	..	191
January-March 1976	..	..	..	..	..	..	..	..	188
April-June 1976	..	..	..	..	..	..	..	..	104
July-September 1976	..	..	..	..	..	..	..	..	101
October-December 1976	..	..	..	..	..	..	..	..	184
January-March 1977	..	..	..	..	..	..	..	..	158

For Debate . . .

Intended place of delivery and perinatal outcome

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British Medical Journal, 1978, **1**, 763-765

Summary and conclusions

Data from the "1958 Perinatal Mortality Survey" have been analysed to assess differences in stillbirth and neonatal death rates according to the arrangements made for delivery. Only women aged 20-34 delivering at term, with no pregnancy abnormalities, were selected from three groups of women (normotensive primiparae, hypertensive primiparae, and normotensive women of parity 1, 2, or 3).

Despite the fact that within each group the women booked for NHS consultant units were heavily weighted

with adverse factors, the death rate of their infants was no more than 70% of that found among the women booked for either domiciliary, general practitioner unit, or private consultant delivery. Care and delivery in a NHS consultant unit carries least risk of death for the infant.

Introduction

As women have become more independent they have started to question the concept of hospital delivery for all. The comfort, both physical and psychological, of delivery in the familiar surroundings of one's home cannot be compared with the harsh lights and sterilised bustle of most hospital deliveries.

It became obvious during a recent debate at the Royal Society of Medicine that there were few valid statistics to support the belief, firmly held by many obstetricians, that hospital delivery was much safer for the infant. The only recent attempt to look at the subject¹ had shown that the stillbirth rate in hospital deliveries was some three times that in domiciliary deliveries.

This type of analysis, however, is too crude and naive for valid interpretation. Not only are data on place of delivery

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