Hand, foot and mouth disease in two Edinburgh practices, 1980

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SUMMARY The experience of two Edinburgh practices during an outbreak of hand, foot and mouth disease in 1980 is described. Twenty-five cases were diagnosed, nearly all of them under the age of 10 years.

Introduction

HAND, foot and mouth disease (HFMD) was first described by Robinson and colleagues (1958) from an outbreak in Toronto caused by Coxsackie virus A16. Subsequently Coxsackie viruses A5 (for example Flewett et al., 1963) and A10 (Clarke et al., 1964) have also been implicated. Single outbreaks associated with Coxsackie virus A9 (Hughes and Roberts, 1972) and Coxsackie virus Group B (Lindenbaum et al., 1975) have also been reported.

Epidemic outbreaks of HFMD occur approximately every three years, mainly in warm weather. Increased incidence of Coxsackie virus A16 was noticed in the United Kingdom in 1964, 1967-68, 1970-71 and 1973 (WHO, 1976). The 1970 epidemic was widespread throughout Scotland (Reid et al., 1972). The incubation period is three to seven days and children, especially pre-school children, are known to be most commonly affected. The importance of close association (for example in families) in the spread of the disease was shown by Higgins and colleagues (1965). Contact in communal inflatable swimming pools (Robinson, 1958) and in a school swimming pool (Pearson, 1976) have been suspected as contributing to the spread. Urquhart (1980), reporting experience in North Gloucestershire, mainly a rural area, found that in four of eight family outbreaks the fathers had occupational contact with animals and suggested further consideration of an animal reservoir of Coxsackie virus A16 to explain "the apparent limited capacity to spread from secondary human cases".

The characteristic clinical course starts with an acute ulcerative stomatitis, often with a mild pyrexia and perhaps preceded by a few days of malaise and an upper respiratory infection. Ulcers may be found on the tongue, gums, buccal mucous membrane, palate and pharynx. After 48 hours a maculopapular skin eruption appears which progresses to vesiculation on the palms, ulnar aspect of the hands and fingers, the soles and the lateral aspects of the feet and toes. Other parts of the body may be affected, especially the buttocks, by a maculopapular rash which is more common in young children (Meadow, 1965). The vesicles dry, the scabs fall off and the whole illness lasts up to 10 days. No specific treatment is indicated (Christie, 1980). The differential diagnosis involves aphthous ulceration, herpangina, herpetic simplex, Stevens-Johnson syndrome and drug reactions.

In the summer of 1980 HFMD occurred in Edinburgh as in other parts of the country. This paper describes the experience in two urban group practices, two miles apart, totalling 12,700 patients.

Table 1. Distribution of patients by age and practice.

<table>
<thead>
<tr>
<th>Age</th>
<th>Practice I</th>
<th>Practice II</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>10</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>5-9</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>10-14</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>10</td>
<td>25</td>
</tr>
</tbody>
</table>
The patients

Twenty-five patients were diagnosed, 11 boys and 14 girls. The children included four pairs of siblings. All were under 15 years of age and 72 per cent were under five (Table 1). The epidemic started in June and 72 per cent of cases diagnosed were in June and July, although some cases occurred in practice I in the autumn (Table 2).

The children presented with the typical clinical picture (see Figures 1-4). Most had been off colour for a few days. Small children were distressed by the mouth lesions, were salivating and refusing food. One five-year-old boy had widespread haemorrhagic blisters in his mouth. Depending on the time at presentation, a maculopapular or a vesicular rash could be found on the hands and/or feet. The blisters were painful. One half had a rash on the buttocks. Systemic upset was rarely a feature. There were no complications.

Viral studies were carried out by swabbing vesicular fluid from five patients. From three of these Coxsackie A16 virus was isolated.

A 30-year-old woman was seen in May with mouth ulcers and a vesicular eruption of her hands and feet. Serological investigation, however, did not confirm a Coxsackie infection. Two other problems of differential diagnosis arose. A teenage girl with vesicles on her hands was proved to have a herpes simplex infection, and a baby of five months, genetically at risk of developing epidermolysis bullosa, was seen with his first
blisters due to this condition on his hands and legs during the epidemic.

Practice I had had one specific case of HFMD in 1979—an adult male—and had evidence of a previous outbreak in 1971. Two members of staff of one practice may have been infected in the present epidemic but neither was fully investigated. The district nursing sister complained of mouth ulceration and painful foot lesions and one doctor had painful papules over both distal interphalangeal joints of the fifth fingers and of the lateral border of both feet. Clinically these may have been mild cases.

Discussion

Eighteen of 25 cases under five years of age equates with other reports. Adler and colleagues (1970) found three quarters of 20 confirmed cases under five. In 1970 in Scotland 71 per cent of patients from whom Coxsackie virus A16 was isolated were under 10 (Reid et al., 1972). It was perhaps surprising that more siblings were not involved, but mild and asymptomatic infection can occur (Adler et al., 1970) and Meadow estimated that only half those infected consulted. Other patients may have been infected but did not complain (or were not diagnosed). The clinical features were as expected; the distribution of lesions is compared in Table 3 with a series from Oxfordshire (Meadow 1965). In view of Urquhart’s (1980) observations, the occupations of all the children’s fathers were noted. Only one had contact with animals, a butcher.

The illness was mild and the general practitioners confidently reassured the parents of a benign, self-limiting condition. The report by Ogilvie and Tearne (1980), therefore, came as a shock. These authors described two cases of spontaneous abortion, at seven and 12 weeks’ gestation, in three pregnant women who had HFMD. Coxsackie virus A16 was isolated from the products of conception in the latter. The original paper by Robinson and colleagues (1958) noted four babies with “minor congenital defects” born in the housing estate after their outbreak of HFMD. The degree of immunity is unknown. The risk to the fetus of maternal infection with HFMD has still to be quantified and assessed: if there is a true risk of fetal abnormality, perhaps termination of pregnancy should be offered to those infected. HFMD is a general practice illness occurring about every three years. Prospective research should be done in general practice, with virological support, following up pregnant women in family contact with or suffering from HFMD. Perhaps this should be planned at a national level to obtain sufficient numbers in time for the next epidemic, due in 1983.

References


Edinburgh: Churchill Livingstone.


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