Herpes zoster in general practice

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SUMMARY. Eighty-seven patients with the clinical diagnosis of herpes zoster were seen during a one-year period in eight general practices in Glasgow, the rate per 1,000 practice population being approximately 2·4. Of these, 78 (90 per cent) had serological evidence of active infection with herpes zoster. The anatomical location of the skin eruption was most common in the areas of the fifth cranial nerve, middle and lower trunk and thigh. A possible reactivating agent (trauma four, steroids two, irradiation one) was found in only seven patients. The illness as assessed by systemic upset and dissemination of lesions was generally not severe. Post-herpetic neuralgia was the most troublesome complication, found in 44 per cent of 64 patients revisisted 3–18 months after the acute illness.

Introduction

This report describes clinical findings in a series of patients with herpes zoster in general practice in whom the clinical diagnosis was confirmed by serological findings. The study is compared with that of Hope-Simpson (1965) whose classical epidemiological study of herpes zoster was based on clinical diagnosis alone.

Method

Ten general practitioners from eight practices in different areas of Glasgow took part in the study. In each of these eight practices all patients presenting as clinical zoster during a one-year period (1 June 1972 to 31 May 1973) were included in the study. A proforma was completed by the general practitioner for each patient to supply the clinical and epidemiological information required for the analysis.

To assess the incidence and severity of post herpetic neuralgia most of the patients were revisited between June 1973 and September 1973—several months after the acute attack. Severity of post-herpetic neuralgia was graded as mild (not requiring drugs), moderate (requiring drugs), and severe (requiring drugs and incapacitating). Since duration of neuralgia has also been used as an index of severity (De Moragas and Kierland, 1957) an attempt was made to assess the duration of post-herpetic neuralgia.

For laboratory diagnosis paired sera were collected from each patient, the first specimen as early in the illness as possible and the second specimen 10–14 days later. Sera were tested for antibodies to varicella-zoster virus by complement fixation (CF) technique (Ross *et al.*, 1965). Evidence of active infection comprised a fourfold or greater rise or fall in antibody titre, or high stable antibody titres (>32).

RESULTS

In all, 87 patients with a clinical diagnosis of herpes zoster were seen during the year, the number in each of the eight practices ranging from eight to 16. Since the total population of the eight practices was about 36,000 and was representative of various areas of Glasgow, the rate of clinically-diagnosed cases of herpes zoster during this year was approximately 2·4 per 1,000 people. The corresponding rate in the series reported by Hope-Simpson (1965) was 3·4. Our cases showed no apparent seasonal effect, in keeping with the findings of Hope-Simpson.

Seventy-eight (90 per cent) of the 87 patients with clinical herpes zoster gave serological evidence of active infection with varicella-zoster: 58 with fourfold or greater rises in CF titre, three with a fourfold or greater fall in titre, and 17 with high stable titres. Seven patients gave negative serological results for varicella-zoster (titres <8). However, four of these seven had atypical lesions: one a male aged 29 years gave a rise in titre to herpes simplex and not to varicella-zoster; two females aged 39 and 52 years respectively had facial lesions atypical for herpes zoster; and a male aged 19 years was described as probably pityriasis rosea.

Thus, only three patients with typical varicella-zoster lesions showed no detectable CF antibody to varicella-zoster. A more detailed analysis of the serological findings is being published elsewhere (Ross *et al.*, 1974). The present analysis is limited to the 78 patients in whom the clinical diagnosis of herpes zoster was supported by serological findings, the number of patients in individual practices ranging from seven to 13 (average 9·7).

Clinical findings

Age and sex

The 78 patients with confirmed herpes zoster comprised 30 males and 48 females. Since the age and sex distribution of the total population for all the eight practices was unknown, the incidence (rate per 1,000 a year) of zoster infections by age and sex could not be assessed. However, the excess of females occurred only in the age groups over 60 years (table 1), probably due to the larger number of females than males in these age-groups in the general population. Fifty per cent of the patients were in the age groups from 50–70 years; this is in keeping with the age incidence reported by Hope-Simpson (1965).

TABLE 1

AGE AND SEX OF LABORATORY-CONFIRMED PATIENTS

	Number of patients	*Age in years*							
		10–19	*20–29*	*30–39*	*40–49*	*50–59*	*60–69*	*70–79*	*80–89*
Male	30	2	3	1	3	8	8	5	0
Female	48	3	2	0	5	10	13	9	6
Totals	78	5	5	1	8	18	21	14	6

Anatomical location

Since zoster generally affects the area supplied by a single sensory ganglion an attempt was made by each general practitioner to follow the example of Hope-Simpson (1965) and allocate the zoster rash to a specific ganglion by means of the body chart of Head and Campbell (1900). In only one case were multiple areas (lumbar 2 and sacral 1) involved; this was a male aged 46 years who had received a chest x-ray within the previous three weeks. In two other patients with severe infections there was apparent overlapping of lesions in contiguous segments but, since anastomotic nerve fibrils linking

adjacent areas are abundant, we have allocated the rash only to the main ganglion involved (table 2). Lesions were most frequently found in the areas of the fifth cranial nerve, middle of trunk (dorsal 5), and lower trunk and thigh (dorsal 10–lumbar 1); the limbs were more rarely affected. These findings are similar to those obtained by Hope-Simpson.

TABLE 2
ANATOMICAL LOCATION OF LESIONS (78 PATIENTS)

Cranial		*Cervical*	*Dorsal*	*Lumbar*	*Sacral*
V	*VII*				
		1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5	1 2 3 4 5
9	1	0 0 6 2 0 0 0 2	0 2 1 5 1 1 4 3 4 1 5 5 7	5 3 1 0 0	1 0 0 0 0

Severity of illness

The numbers of patients with mild, moderate and severe illnesses as assessed by their general practitioner were 34, 34 and ten respectively. Nine of the ten patients with severe illnesses were aged between 53 and 75 years old; the remaining patient, a male aged 46 years was misdiagnosed as appendicitis and had an unnecessary appendicectomy before skin lesions appeared. Of these ten severely ill patients, five had lesions of the head or neck; none were associated with D5 lesions which was the commonest location for the mild and moderate illnesses. Only one patient (a female aged 63 years) was referred to hospital because of corneal ulceration, which healed completely.

Possible reactivating agent

Specific enquiry was made about possible reactivating agents within the four weeks before the appearance of skin lesions namely, irradiation, steroids, immunosuppressive drugs, or trauma. Possible reactivating agents were found in only seven (nine per cent) of the 78 patients as follows:—trauma four, steroids two, irradiation one.

Neuralgia

Information about neuralgia preceding skin lesions was obtained for 75 of the patients: 39 (52 per cent) had preceding neuralgia starting from one to 14 days before lesions appeared. One male aged 70 years, whose sera showed a rising antibody titre to varicella-zoster, had no skin lesions but had pain behind the left eye and temple and in the pre-auricular area.

TABLE 3
AGE AND POST-HERPETIC NEURALGIA

Duration (months)	*Age in years*				Totals
	<20	*20–39*	*40–59*	*60 or over*	
Nil	5	4	12	15	36
<1 month	0	0	0	5	5
>1 month	0	0	9	14	23
Totals	5	4	21	34	64

All the patients, except those who had left the district, were revisited between June to September 1973, three to 18 months after the acute attack; of the 64 patients questioned 55 were over 40 years old. A history of post-herpetic neuralgia was obtained in 28 (44 per cent) of the 64, all 28 being over 40 years old (table 3). The neuralgia was mild in 16, moderate in eight and severe in four. In 23 patients neuralgia had persisted for

longer than one month. Of eight patients who had been followed for over one year only one, a female aged 61 with dorsal 12 lesions, still had neuralgia comprising occasional pain, tingling and itching in that area.

Discussion

Our study in laboratory-confirmed cases of herpes zoster has in general supported the clinical and epidemiological findings in the series of cases reported by Hope-Simpson (1965) in which the diagnosis was made by means of the typical clinical eruption. Thus, it would seem that laboratory diagnosis is only necessary when the eruption is atypical, or when there is neuralgia without an eruption.

We found that herpes zoster as seen in city general practice throughout this year was not usually a severe illness as assessed by systemic upset and dissemination of lesions during the acute illness. The only patient with disseminated herpes zoster was a male of 46 years old whose lesions followed irradiation of his chest. The reported incidence of disseminated zoster varies from 2–90 per cent (Shanbrom *et al.*, 1960). Since it has been shown that dissemination of herpes zoster is related to the presence of other diseases and to therapeutic procedures depressing cell-mediated immunity (Stevens and Merigan, 1972), this wide variation in incidence may depend on the fact that some of these assessments were made in the general population and some in hospital populations with associated diseases.

Despite the apparent mildness of the acute illness in most of our patients, post-herpetic neuralgia of varying degrees of severity was found in 44 per cent of those questioned 3–18 months after the acute attack. De Moragas and Kierland (1957) reported that post-herpetic neuralgia increased in frequency and duration with the age of the patient. Thus, one explanation for the high proportion of post-herpetic neuralgia in the present series might be that most patients were over 60 years old.

Juel-Jensen *et al.* (1970) reported that the duration of pain in herpes zoster was significantly reduced by treatment with topical 35–40 per cent idoxuridine in dimethyl sulphoxide continuously applied for four days, and has suggested that this treatment could benefit the ordinary case of zoster. Our post-herpetic findings support the need for such treatment.

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Addendum

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