THE NATURAL HISTORY OF HERPES ZOSTER

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Summary

The incidence of herpes zoster was 2.4 per thousand. Greater percentage of Muslims were affected. No seasonal variations were noted. Precipitating factors were possible to find only in very few patients. The majority of patients had the disease in 3rd and 4th decade; males predominating. The clinical features and course of the disease were classical and longer in older patients. The severity of the pain was directly proportional to the advancing age The frequent involvement of the thoracic segment followed by cervical was conspicuous. The complications like post-herpetic neuralgia, facial palsy and corneal opacity were seen in that sequence in a few cases.

Herpes zoster is an acute, self-limiting, viral infection characterised by appearance of grouped vesicles on an erythematous background, distributed along the nerve roots. It is usually associated with burning sensation and/or pain. The severity and the course of the disease is variable. A few reports of the natural history of herpes zoster are available in the literature from some countries[1,2,3] including a couple of them from India[4,5].

The objective of the present study was to find out the incidence, severity, course and complication of the disease to delineate the natural history of herpes zoster.

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Material and Methods

All the patients of herpes zoster attending the dermatology out-patients department during the past 5 years were included in the study. All data were recorded in proformae prepared for the purpose, emphasizing the sequence of appearance of the symptoms, signs and course of the disease. Smears were prepared from the floor of fresh vesicles/bullae for the demonstration of the balloon cells in all the cases. The histopathological examination was performed in 11 patients only, in order to confirm the diagnosis.

Observations

Incidence

Ninety patients of a total of 35,936 had herpes zoster, thus giving an incidence of 2.4 per thousand.

Seasonal Variations

There was no significant association of the disease with changing seasons (Table 1), in fact the reporting of the patients was continuous throughout the period of study.

TABLE 1
Seasonal Variations

Seasons	No. of patients	Percentage
Summer	32	35.5
Monsoon	32	35.5
Winter	26	28 8

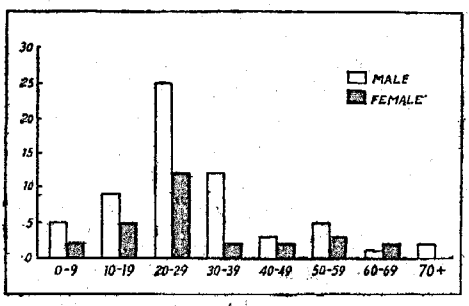
Predisposing/precipitating factors

Trauma had precipitated herpes zoster in 2 cases, while a patient of Hodgkin's disease had associated herpes zoster. A case each of pemphigus and bronchial asthma had developed the disease during treatment with prednisolone. One patient each of tuberculosis, rheumatic fever, scleroderma, diabetes mellitus and malnutrition also had associated herpes zoster.

A past history of chicken-pox was elicited in 23 (25.5%) patients only. There was, however, no history of recent contact with either chicken-pox or herpes zoster in any of the patients.

Age and Sex

The age and sex distribution of these patients is shown in (Fig. 1). There were 62 (68.8%) males and 28 (31.3%) females. The youngest patient was 3 years old, while the oldest was 82. Majority of the patients had the disease in the third and the fourth decades.

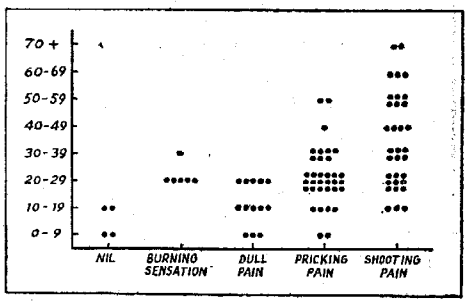


Duration

Majority (72.3%) of the patients had sought medical advice within a period of 6 days of the disease. The remainder had reported in the course of 15 days.

Symptoms

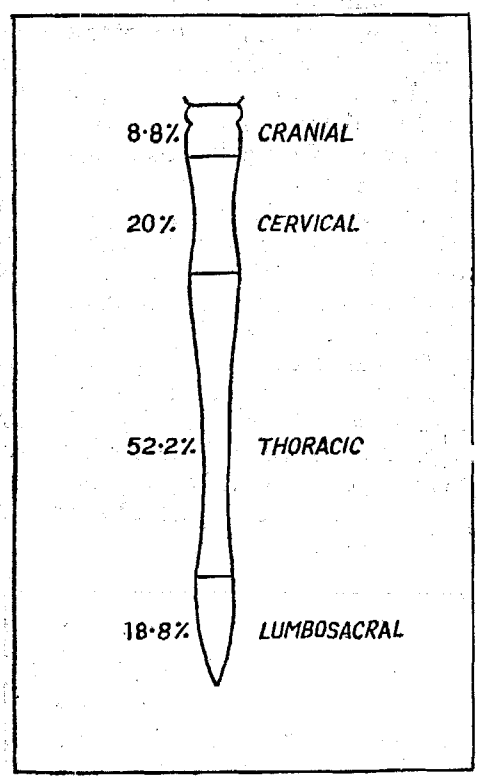
The main presenting symptoms were pain (95.5%) and skin eruption (91.5%). In 43 (47.5%) of these cases, pain was prodromal prior to the appearance of the rash. The pain had appeared simultaneously with the rash in 27 (30%) cases, in the remaining 16 (17.5%) patients however, the rash appeared before the pain, and only in 4 (4.5%) cases it was conspicuously absent. Tingling and numbness along the nerve roots was recorded in 10 cases. A direct correlation was noted between advancing age and severity of pain (Fig. 2). Associated ocular involvement namely watering of the eyes, redness and oedema was observed in only 5 cases.



Signs

The involvement of a single dermatome was noted in 55 (61.1%) and multiple (38-8%) in the rest of the patients. The lesions were disposed unilaterally in band like fashion. Thoracic segments were most often affected (52.5%). followed by cervical (20%), lumbosacral (18.8%) and cranial (8.8%) (Fig. 3 Page No. 88). Erythematous macules were observed in 8 (8.8%) patients, erythema, grouped papules and/or vesicles in 79 (87.5%) and only grouped vesicles in the remaining 3 patients. Conjunctivitis with keratitis was present in 3 and conjunctivitis alone was found in

2 patients. All these patients had affliction of the ophthalmic branch of trigeminal nerve.



Course

Newer lesions continued to appear in most of the cases along the nerve roots for a period of 3 to 7 days. These lesions to begin with were erythematous papules, turning to vesicles in 24 to 48 hours and later into pustules. In 9 patients the vesicles had broken to form superficial erosions, in 3 they were enlarged to form bullae, while in 4 other cases secondary infection was noted. In only a single case the lesions were haemorrhagic. Most of the lesions had dried up by the end of 7 to 15 days. In a few older patients it had taken more time for the complete remission. In 3 cases, in the course of the disease, discrete vesicles had appeared on the other parts of the body with mild systemic symptoms. One of these patients was suffering from Hodgkin's disease.

Complications

Seven patients in the forty year and above age group had severe and persistent post-herpetic neuralgia. Only 3 patients of the younger age group had mild post-herpetic neuralgia. Three patients in all had facial palsy and in one instance corneal opacities were noted.

Histopathology and cytology

Balloon cells were demonstrated in all the cases of herpes zoster. All the 11 haemotoxylin-eosin stained sections had typical intraepidermal vesicles. The vesicles were usually single and multiloculated. There was marked acantholysis, characterised by loss of intercellular bridges and ballooning with reticular degeneration of the epidermal cells, inflammatory infiltrate of varying density comprising mainly of mononuclear cells, lymphocytes and occasional eosinophils and polymorphs were also located. Occasional intranuclear eosinophilic inclusion bodies were also seen. The dermis underneath had mild perivascular nonspecific inflammatory reaction.

Discussion

The diagnosis of herpes zoster was mainly clinical and was substantiated by demonstration of balloon cells and in a few cases by histology. The low incidence of herpes zoster in our series as compared to that quoted by Burgoon *et al*[1], may possibly be due to the fact that the disease is considered trivial, self-curable and therefore patient may not come for medical assistance.

Although Profirov and Dessev[3] noted a higher incidence in winter, there was no significant seasonal variation in our series, as was also reported by Burgoon *et al*[1]. The peak age incidence in the third and fourth decade in our series is similar to that of other reports from India[4],[5] in contrast to the reports from

United States[1] and Bulgaria[3], where the higher incidence was noted in older age groups. Mathur *et al*[4] and Nigam *et al*[5] had noted predominance of males in their series. In the studies of Burgoon *et al*[1] and Profirov and Dessev[3], however, no significant difference in sex ratio was observed. The sex ratio found in the present series is more or less similar to sex ratio in hospital population in general.

Reactivation of the latent virus due to lowered resistance of the host or reinfection with the virus are known to precipitate herpes zoster[6]. The former situation was recorded only in 5.5 percent of the cases in the present series, further reaffirming the said contention. Further, though previous history of exposure to chicken-pox virus was forthcoming in a good percentage of cases, this may or may not add to the existing concept of reactivation of the latent virus. Reinfection seems unlikely as in none of our cases, was there a history of recent contact with either herpes zoster or chicken-pox.

The disease had the classical course. It was found that the severity of the pain was directly proportional to the advancing age. The skin lesions had their onset usually with erythematous macules, affecting one or more dermatomes, spreading unilaterally in a band like fashion, progressing to form papules, vesicles and pustules in that sequence. Regression of the lesions occurred in the course of 14-21 days, but it was delayed in older patients. In a few cases secondary infection was observed. The thoracic segments were most frequently involved. Older patients were more often affected by complications, the commonest being post-herpetic neuralgia. A few had facial nerve paralysis and there was one case with corneal opacities. There was neither an instance of recurrence of the condition nor bilateral involvement in this series.

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