Relative Increased Incidence of Childhood Hodgkin’s Disease in Peru

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Summary

One hundred fifty cases of Hodgkin’s disease have been diagnosed at the Instituto Nacional de Enfermedades Neoplásicas of Peru between 1952 and 1964. Sixty-one of these (40.7%) were under 15 years of age. The proportion of cases in the 1st decade of life (30%) is much higher than that found in other reported series. The male/female ratio parallels that in all other reported series, both for patients under 15 years and for the older group. Although the greater number of children under 10 years in Peru as compared to the United States may be an important factor in the increased incidence of Hodgkin’s disease in children, it is not sufficient to explain the remarkable difference reported in this series. Such factors as race, socioeconomic conditions, nutrition, and immunologic status may be factors contributing to the early occurrence of Hodgkin’s disease.

Introduction

A review of the pertinent literature reveals the unanimous opinion that the highest incidence of Hodgkin’s disease occurs in the 3rd and 4th decades of life (2-9, 11, 12), and this condition is infrequent in childhood (1, 10). These conclusions have been based principally on studies on Caucasian patients, generally of a medium to high social and economic level.

We have been impressed with the higher incidence of Hodgkin’s disease in Peruvian children seen at the Instituto Nacional de Enfermedades Neoplásicas in Lima. We have consequently analyzed the distribution by ages of this disease among the people of mixed European and American Indian ancestry (Mestizos) of Peru and compared it with the figures reported for other racial and socioeconomic groups. If some differences were found, these data could be useful in suggesting answers to some of the questions posed by this intriguing disease: Is this condition influenced by extrinsic factors, and if so, what are they? Is Hodgkin’s disease in children the same as in adults?

Material and Methods

The clinical material accumulated at the Instituto Nacional de Enfermedades Neoplásicas between 1952 and 1964 was reviewed, as well as the biopsy slides and necropsy material on cases diagnosed as Hodgkin’s disease. We employed the Jackson and Parker criteria to differentiate the 3 histologic varieties of Hodgkin’s disease. For this report we limited our analysis of the cases to their original presentation with emphasis on the age of the patients and the evolution of the disease. Treatment and survival are not included. The age of the patients is recorded as the age at the time of diagnosis, not at the clinical onset of the disease.

Results

In 150 of the cases studied, the diagnosis of Hodgkin’s disease was proved by histopathologic methods. Of these 150 cases, 61 (40.7%) were under 15 years of age. When the cases are distributed by decades of life, the largest group fell within the 1st decade, with 31% of the total. Table 1 shows that this incidence is much higher than that reported by Lumb (5) for this group (8.8%). The incidence of the disease in the last 3 decades is within the average incidences reported in other series, and for the 4th and 5th decades the incidence is below that of other series. This indicates that the increased incidence of the disease in the 1st decade is achieved at the expense of the 4th and 5th decades. The youngest patient in our series was 3 years old and the oldest 78, with an average age of 29.79 years.

Male/Female Ratio

The male/female ratio of the entire series was 2.34, which places it at the upper limits of the ratios reported for other series (Table 2). This relation is definitely higher in the 1st decade of life, as reported by others also. This proportion decreases gradually in the older patients.

Histologic Variety

When the cases are analyzed according to histologic variety and age (Table 3), the incidence of paragranuloma is seen to be lowest in the group of patients under 15 years. Chart 1 shows the percentages of paragranulomas, granulomas, and sarcomas found for each decade in 3 of the series reported (2-4) in comparison with the present work. The paragranuloma proportion is roughly parallel, but there is a modest increase in the number of granulomas and sarcomas in the younger age group.

Extent of the Disease

In Table 4 we have classified our patients according to the extent of the disease, utilizing the staging criteria of Peters and Middlemiss (9). The group of patients under the age of 15 has a greater percentage of cases in Stage I and a lower proportion of Stage III. Figs. 1-3 illustrate the clinical appearance of Hodgkin’s disease in 3 patients under the age of 15.

Discussion

One hundred fifty of the 17,430 cases of malignant neoplasms (0.86%) registered at the Instituto Nacional de Enfermedades Neoplásicas...
Neoplásicas of Lima, Peru, between 1952 and 1964 were diagnosed as Hodgkin's disease. This hospital is responsible for about 80% of all the malignant tumors diagnosed in Peru. Peru, according to the 1961 National Census, has a population of 9,747,000, but only about 3,000,000 inhabitants of the 9 largest cities, which have hospital centers, are part of the accessible population for medical statistics according to the Ministry of Public Health. Because of incomplete morbidity-lethality figures, the present data are not necessarily an accurate representation of the actual incidence of Hodgkin's disease in Peru. Also according to the 1961 census, 30% of the population of Peru is under the age of 10, which is considerably higher than the figure of 22% for the United States for the same age group. This may be a factor in explaining the greater incidence of Hodgkin's disease in the 0- to 10-year group in Peru; nevertheless, the percentage of cases in children is so much greater than that of the United States series that this factor does not give the complete story. This series differs from those reported elsewhere in another way; the Mestizo race comprises more than 90% of the hospital population, and most of the patients have greatly lowered socioeconomic, hygienic, and nutritional levels. The coexistence of Hodgkin's disease with chronic tuberculosis, other infections, and parasitic infestation in these patients suggests a host immuno-
logistic status different from that provided to the neoplasm by patients in other series.

The lower incidence of paragranuloma in patients under 15 is parallel to that reported in other series. On the other hand, it is surprising to find 3 cases of Hodgkin's sarcoma in this same group of patients, a fact which has not been found even in the largest series of infantile Hodgkin's disease reviewed (10).

References
Fig. 1. A 3-year-old boy with history of cervical tumor of 1 year's duration. On examination he was found to be pale, cachectic, and icteric with massive hepatosplenomegaly. The lymph node biopsy showed Hodgkin's disease.

Fig. 2. A 4-year-old patient with large lymphadenopathy due to Hodgkin's disease on right side of neck (left). Right, disappearance of the masses after radiation treatment.
Fig. 3. An 11-year-old female patient with bilateral cervical Hodgkin's disease of 16 months' duration.
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