

Attenuated yaws in Surinam

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SUMMARY Results of a pilot survey in the central, northern region of Surinam indicate that yaws is prevalent (hypoendemic) in this part of the country. No classical symptoms of yaws were seen. The observed lesions were scanty or solitary, dry papillomatous, or macular and scaly, which fits into the clinical picture of attenuated endemic treponematoses.

Introduction

Surinam is a tropical country in the north-eastern part of South America. Syphilis and yaws are known to be prevalent in this country (Menke, 1978). Yaws was highly prevalent at the beginning of this century (Flu, 1911). Although no special mass treatment campaign against yaws has ever been organised, a gradual decline in the incidence of the condition was observed over past decades, and now it is generally assumed that the disease has practically been eradicated in Surinam. In 1975, attention was focused again on this non-venereal treponemal disease when several children from the central, northern region of the country (Saramacca district) were seen with early infectious yaws. In view of this we carried out a pilot survey to study the prevalence of this disease in that part of the country.

Material and methods

In 1976, a total of 969 schoolchildren living in the central, northern region (Saramacca district) of Surinam (age range 4-16 years, mean 11 years) were examined with special attention being given to skin and mucous membranes. Blood samples were collected by venepuncture. The Venereal Disease Research Laboratory (VDRL) slide test was performed at the Professor P. C. Flu Institute in Paramaribo according to the recommended procedure (National Communicable Disease Center, 1969). The results were scored as positive (reactive) or negative (non-reactive). The remainder of the serum was stored at -70°C for future analysis (Menke *et al.*, 1979). The housemates of the

schoolchildren with reactive VDRL test results were examined and the VDRL test was also performed in these cases (epidemiological investigations). Skin specimens for biopsy were taken from individuals with lesions suggesting yaws, and sections were stained with haematoxylin-eosin (routine) and silver (for treponemes). All VDRL-reactive children (as well as their VDRL-non-reactive housemates) were treated with a single injection of benzathine penicillin G, in doses which were adjusted according to age: children of 4-6 years, 0.6 megaunits; children of 7-12 years, 1.2 megaunits; and children older than 12 years, 2.4 megaunits.

The diagnosis of yaws was based on a combination of epidemiological data, clinical findings, results of the VDRL test, histological evidence, and the effect of treatment with penicillin.

Results

Of the 969 children examined, 212 (22%) had a reactive VDRL test, and 29 of these showed clinical lesions suggesting early yaws. The lesions observed were either solitary, dry papilloma-like (Fig. 1), or macular and scaly (Fig. 2). The lesions disappeared after treatment with penicillin. Biopsy of papilloma-like lesions showed moderate acanthosis of the epidermis, a moderate inflammatory infiltrate consisting of neutrophils in the epidermis, and lymphocytes and many plasma cells in the dermis. Proliferation of small vessels and some prominence of endothelial cells were observed. Spiral structures suggesting treponemes could be identified by silver-staining, especially in the epidermis (Fig. 3). These findings are consistent with the diagnosis of yaws. In patients with macular, scaly lesions, the histological picture showed a non-specific dermatitis consisting of parakeratosis, acanthosis of the epidermis, and a perivascular infiltrate of lympho-

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Fig. 1 Papilloma-like lesions in the perianal region of a 9-year-old boy with secondary yaws

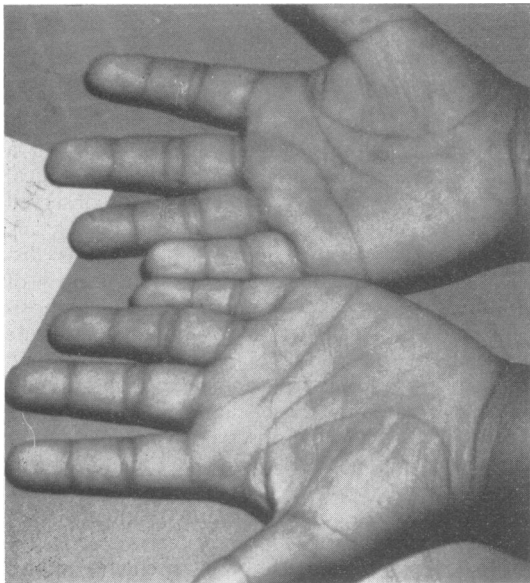


Fig. 2 Scaly macules on the palms of a 10-year-old boy with secondary yaws

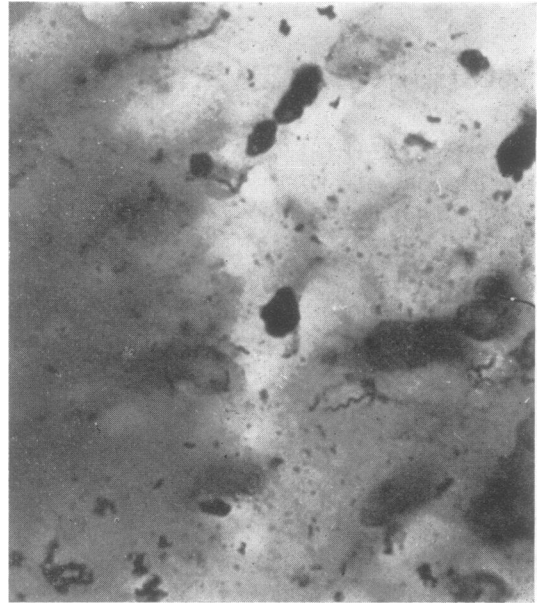


Fig. 3 Spiral structures suggesting treponemes in the epidermis of the lesions shown in Fig. 1 (silverstain $\times 1100$ magnification)

cytes in the dermis. Treponemes could not be identified in these cases.

Signs of congenital syphilis and genital lesions suggesting venereal syphilis were not seen in any of the children. Of the 29 individuals with lesions, 15 were classified as having primary yaws and 14 as having secondary yaws. In the 183 children with positive results to the VDRL test but without clinical lesions a presumptive diagnosis of latent yaws was made.

Discussion

The results of this study indicate that yaws is still prevalent in the central, northern region of Surinam. According to World Health Organisation standards (Hackett and Guthe, 1956) the prevalence of the disease in this region can be classified as hypo-endemic.

In textbooks classical lesions of yaws are described as multiple, papillomatous, moist lesions present all over the body (Rook *et al.*, 1972; Canizares, 1975). Flu (1911) also observed these classical lesions 70 years ago in individuals in the central, northern region of Surinam. Recently, similar lesions have been seen in patients coming from other foci of yaws in the country (Niemel *et al.*, unpublished data). In this survey, however, carried

out in the central, northern region of Surinam, we did not see classical yaws lesions. The lesions observed by us were scanty or solitary, squamous, or dry papillomatous. These findings fit into the clinical picture of attenuated yaws (Vorst, 1974). The cause of this attenuation is not known, but attenuated treponemal disease may be related to low endemicity, and classical yaws is seen in hyper-endemic areas (Vorst, 1974).

The prevalence of attenuated yaws may have practical consequences and the diagnosis can be easily overlooked. Physicians, therefore, should be aware of the existence of these atypical cases. Furthermore, serological investigation is essential to make the right diagnosis.

The fact that yaws is still prevalent in Surinam is not only of importance to local physicians and health authorities. In addition to the 400 000 inhabitants of Surinam over 100 000 people of Surinamese origin live in Holland. Most of them emigrated to that country shortly before the independence of Surinam in 1975. It is obvious that, together with the people who recently emigrated from Surinam to Holland, yaws infection could have been imported to Holland and hence to Europe. In most cases the infection would probably be latent. European physicians should consider the possibility of active yaws in children with skin disease who have recently come from Surinam and from other tropical countries.

Finally, in view of our findings, health authorities, local and international (such as, the World Health Organisation and the Pan American Health Organi-

sation), are asked to consider setting up a control programme to eradicate yaws in this part of the world.

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