STUDY OF A CASE OF YAWS, CONTRACTED BY AN AMERICAN SOLDIER IN FRANCE

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The following is a brief history of a patient who was admitted to the Dermatological Service of Dr. Jay Frank Schamberg at the Philadelphia General Hospital. The history, skin lesions, and laboratory findings pointed to yaws. A diagnosis of this disease was made.


Born and lived in this country until 1917, at which time he joined the Royal Canadian Army and was sent to France, remaining there until August, 1919. During almost all of this time he was stationed at Etappes as a member of the Royal Canadian Dragoons (a cavalry outfit). The members of this organization were composed only of Americans and Canadians. Etappes was a large base for cavalry and infantry troops. There were thousands of soldiers at this base—Canadians, Australians, New Zealanders, South Africans (white men) New Foundlanders, Chinese (labor battalion). There were no soldiers from Algeria or India, indeed no men other than white men, except negroes from Canada and Australia. The longest time he was away from this base was for about three months, which was spent in Cambrai and its environment. The only time he saw dark skinned soldiers was when he would meet them in the streets or in such places as saloons and Y. M. C. A. huts. At no time was he in very close contact with them, such as sleeping in the same barracks, etc.

In May, 1919 he was taken sick and sent to a hospital in England. The first symptoms he noticed were rheumatic-like pains in knees and shoulders which were at times severe enough to incapacitate him. He had no other complaint. While in the hospital he had a fever for a short time, pain in joints gradually disappearing. Was discharged in September. Arrived in Canada in October and came to his home in Philadelphia. About this time he first noticed lesions on palms fol-
lowed in a week later by similar lesions on scalp and soles of feet. Denies ever having had syphilis, last exposure was eight months ago.

On admission to the Philadelphia General Hospital December 30, 1919, he presented lesions on the palms, soles, scalp, nose, forearm and penis. The lesions in general are distinctly fungated and granulomatous in appearance. Sharply circumscribed, varying in size from a large pea to a nut. The surface is covered with a brownish-yellow crust, which on being detached discloses a raw surface consisting of red or yellowish fungoid granulations secreting a thin slightly purulent secretion. The lesions exhale an offensive odor. On the scalp there are present five distinct areas of circumscribed infiltrated raised patches, exhibiting a distinct elevated border and central depression with a firm brownish-yellow crust. In the throat there is a large, whitish, streaky patch, less inflammatory than mucous patches. Scattered upon the palmer aspects of the fingers are pinhead and larger-sized conical, papular reddish elevations, with central horny plugs. As central plugs fall out they leave a depressed central pit. These lesions bear some resemblance to follicles. Castellani refers to similar lesions as a peculiar pitted framboeside of the palms. On the prepuce are numerous wartlike excrescences which bear some resemblance to condyloma acuminata.

A dark field examination of the serum obtained from the surface of some of the lesions disclosed many treponemata having the morphological characteristics of treponema pallidum. A Wassermann performed with cholesterolized, alcoholic syphilitic liver and acetone insoluble lipoid antigens was 4+.

Neoarsphenamine 0.9 gram was administered which caused a disappearance of many of the lesions and a marked improvement in others. Sixteen days later a second dose was given which caused a complete disappearance of the remaining lesions. Up to the present time (an elapse of nine weeks) the patient has remained entirely well. No further treatment has been given.

Since the administration of neoarsphenamine weekly Wassermann reactions, up to the present writing, have been positive. The last degree of positive reaction obtained has been 3+ with a cholesterolized antigen; 2+ with an alcoholic syphilitic liver antigen and a 2+ with an acetone insoluble lipoid antigen.

One of the skin lesions was excised and was used to inoculate four rabbits intratesticularly. In two, positive results were obtained after an incubation period of thirty-four days. A second strain has been
grown in rabbits, six out of eight being successful. Average period of incubation, twenty-four days. Ten cubic centimeters of the patient's citrated blood was injected intravenously into rabbits with negative results. Attempts to inoculate the anterior chamber of the eye in rabbits were negative. Attempts to inoculate a monkey's eyebrow have been so far unsuccessful.

Complement fixation tests were performed with an antigen made from a yaws nodule from an infected rabbit's testicle. Salt solution was used in making the antigen rather than alcohol. The reaction with the serum of the yaws patient yielded slight but definite degree of complement fixation. A duplicate test performed with the pooled sera of three syphilitics whose Wassermann reaction was 4+, yielded negative reactions. Further immunological study of the yaws lesion showed the following:

Hyperkeratosis of the acanthosis of the epidermal tissues; extensive lymphoid and polymorphonuclear infiltration of corium. Absence of blood vessel changes. Treponemata in the leucocytic areas of the apices of the papillae, subjacent to the rete.

From a personal communication Castellani writes:

From the description you give and the photos, I would diagnose the case as one of yaws. I am not aware of the disease having been previously recorded in France, but of course during the war a large number of native troops and native workmen were imported into France from tropical countries, and they may have imported the disease with them. As regards mode of infection I am inclined to give more importance to direct contact than to insect carriers. Of course, in the tropics there is no doubt that in many cases the disease is carried by flies.

The diagnosis of yaws is supported by the following: The history and clinical features of the skin lesions, and the histological appearances. The finding of treponema in the lesions definitely places the disease as either yaws or syphilis. The difficulty in staining the treponema is suggestive of its being pertenuis rather than pallida.

The resistance experiments of Neisser, Baermann and Hulberstader have not as yet been carried out because of our unsuccessful attempt so far to infect a monkey. Cross infections with syphilis and yaws in the rabbit, after treatment with arsphenamine have not as yet been conducted.