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Review Articles

Epidemiology of Syphilis in Japan

Prof. KATSU TAKENOUCI, M. D.

RAITA MATSUO, M. D.

ICHIRO HIRABAYASHI, M. D.

Department of Dermato-Urology, School of Medicine, Chiba University

(Director : Prof. Dr. K. Takenouchi)

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Introduction

Prof. Hoffmann, in his treatise entitled, "Aufstieg, Wandung und Niedergang der Syphilis in viereinhalb Jahrhunderten," which he read before the Fifty-fourth Congress of Japan Dermatological Society, reflected that syphilis, with its first appearance, its gradual transformation and its remarkably rapid waning, had shown its extraordinary importance in the progress of medical science. The same thing can be said of the history of syphilis in Japan.

It is to be regretted, however, that there exist as yet very few reliable statistics describing the whole picture of the epidemiology of this disease in our country. The Welfare Ministry's annual statistics, formulated on the information supplied by the physicians, has greatly impaired its credit since it was widely known that their statistics seem to cover only about one-fifteenth of the actual number of the syphilitic persons. Therefore, the clarification of the epidemiological state of this disease in Japan has been, and still is, the work left entirely to the syphilologists.

In this connection, it must be said that the investigations concerning the spread of syphilis made by Prof. Sato in 1942 and by Prof. Yamamoto in 1955 are at once invaluable and epoch-making, in respect both of the scale and the quality of their works. Based on the materials collected extensively, Prof. Sato and his associates (including myself) estimated in 1942 that the rate of syphilitic persons would be 12 per cent. With a total population of 70,000,000, this meant 8,000,000 syphilitic persons. (In fact, it was a computed figure based on an assumption that the percentage of detecting latent syphilis by the serological test would be 60 per cent.) After a few years, that great social and economic confusion due to Japan's defeat in the Second World

War provided an ideal hotbed for the spread of this disease.

The spread of the so-called "war-syphilis" cannot be said to have been brought well under control as yet. Prof. Yamamoto reported in 1955 that the rate of syphilis might be between 3 and 4 per cent—a total of from 2,600,000 to 3,400,000 syphilitic persons in the whole population of 86,000,000. Here I shall give a brief account of the materials collected from various sources, in the hope to give you a general idea of the state of this disease in Japan.

**Syphilitic Persons as Observed at the Out-Patient's
Department of Our Clinic**

In Figure No. I we have shown the rise and fall of the number of the syphilitic persons who came consulting our department in the past thirty-four years, that is from 1923 till August, 1956. The solid line represents the actual number of the syphilitic persons, while the dotted line represents the rate of these syphilitic persons to all those who came there for consultation.

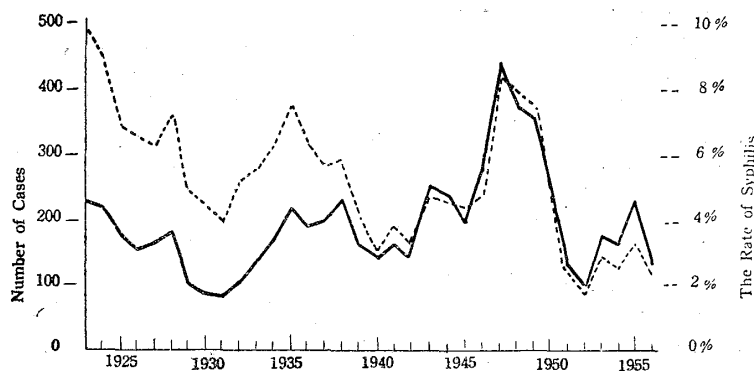


Fig. I. The rate of syphilis at dermatouological clinic of Chiba University Hospital. The solid line represents total number of syphilitic patients and the dotted line represents the morbidity of syphilis in all the patients consulting the clinic.

The epidemiological history of syphilis in Japan may be conveniently divided into the following four periods: the first period from 1923 to 1930: the second period from 1931 to 1937: the third period from 1938 to 1945: and the fourth period from 1945 up to the present time.

The first period is characterized by the violent fluctuations in the rate of syphilitic epidemic, due to the business boom following the First World War, the great earthquake of 1923, and the depression brought about by the worldwide panic of 1929. The second period saw a rapid increase of this rate in proportion to the advance of Japan's industrial power made possible by her fierce exploitation of the rich resources of Manchuria since the Manchurian Incident of 1931. The rate continued increasing as the war spread over the

Chinese mainland in 1937.

In the third period, that is from 1938 to 1945, the eight years which had thrown Japan into an utter muddle of war, the rate fell. The finding has been a subject of much discussion, but one may have to admit that a decisive influence must have been brought about on this rate by the vast extent of the battle-field ranging from the South Pacific to the Asiatic Continent, and also by the great number of the mobilized young men.

Ordinarily, chronic infectious diseases, such as syphilis move along with little deviations. But in times of social disorder, the opportunity for the spread of this disease becomes more frequent, producing greater number of patients. And usually, it is the young people that suffer most. The best instance of this is what is known as "war syphilis." In 1947, two years after the end of the Second World War, 70 per cent of the 450 syphilitic patients treated in our clinic were young people in their twenties.

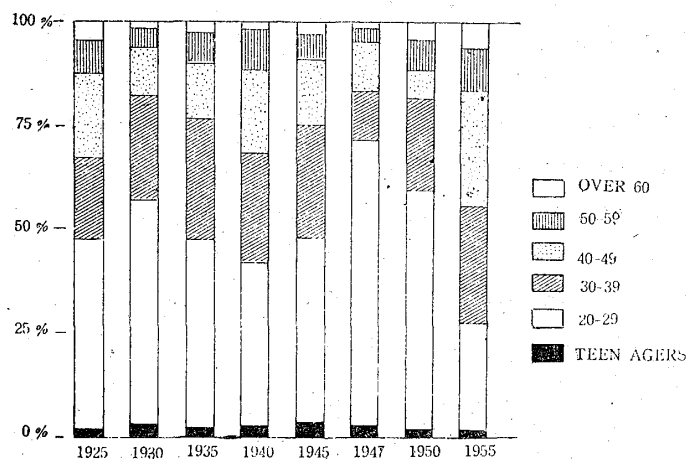


Fig. II The age distribution of syphilitics.
Graphic representation of the rate of syphilis in per cent of varying age groups.

War Syphilis

The last war unprecedented in the nation's history ended, bringing behind it the wreck of the nation's life together with utter spiritual inertia. This gave opportunity for the spreading of fresh syphilis. In the years from 1946 to 1947, the economic life of the nation was almost strangled to death by the demobilized multitude, a several hundredthousand repatriates from overseas and fierce inflation. Let us see what it did. Here is Fig. No. III. In 1947, the rate of syphilitic patients to all those visiting our clinic reached 8.25 per cent, the highest since 1925, and the rate of manifest syphilis rose to 53 per cent.

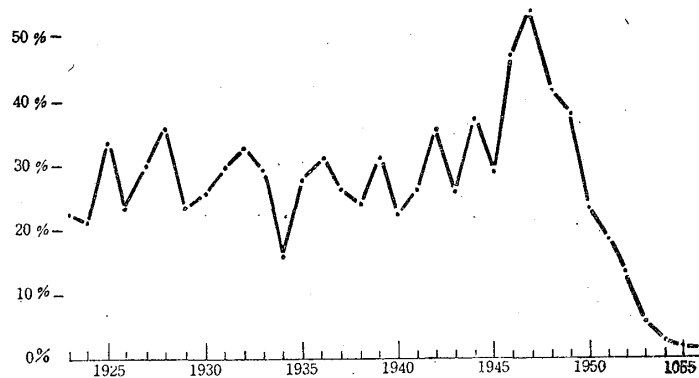


Fig. III. The rate of early infectious syphilis in all forms of syphilitics.

The major policy of government by the Occupational Forces was aimed at weakening Japan by a ruthless destruction of her established social and economic order. But it went so far as to fill the streets with millions of unemployed, and bring about an inflation so fierce that it hampered even the production of the articles needed for bear subsistence, though this sometimes caused a little inconvenience for the masters themselves. They are partly responsible, for instance, for the upshoot of those numerous street girls in the neighbourhood of their camps. But with the enforcements of the anti-inflationary measures by the Occupation Authorities, the rapidly rising trend of the commodity prices was checked, and half a year later the growth of fresh syphilis began to decrease. And another half year had to elapse before the people at large could afford to use penicillin. All this demonstrates, therefore, the importance of the social and economic stability for the control of the venereal disease.

As to the patients with manifest syphilis treated in our clinic, their number has been decreasing since 1950, and especially since 1952 the tendency continued with unprecedented rapidity. In 1955, for instance, only 2 per cent of all the syphilitic patients were with this type of syphilis. In other words, more than 85 per cent were with latent syphilis, particularly with late latent syphilis. With regard to the patients that came for consultation, those with syphilis were 2.24 per cent.

Syphilitic Morbidity in the General Public

In Japan serological tests for syphilis have been carried out fairly extensively in the various social and economic bodies, such as service bodies, business firms and factories. As instances of large-scale investigations made (1947-1949), we have the following regional ones: 6.78 per cent in the Kanto district (established by Nakamura), 4.9 per cent in Yokohama City (established by Fujita), 3.8 per cent in Hokkaido (established by Tanino) and 4.1

per cent (established by Totsuka). Another large-scale, integrated survey made recently under the direction of Prof. Yamamoto includes the following ones made by several universities: 2 per cent of 13,738 cases belonging to the National Railway workers and other industrial workers (established by Hokkaido Univ.), 2 per cent of the 8,449 cases belonging to the Japanese workers employed by the United States Security Forces in Japan (established by Nippon Univ.), and 4.2 per cent (established by Kyoto Univ.), 2.8 per cent (established by Tokushima Univ.) and also 1-0.5 per cent (established by Niigata Univ.) respectively, of various factory workers.

In the 1955 investigation made by the members of our clinic on 1,712 workers employed in a certain food-manufacturing factory in Chiba Prefecture revealed 4.15 per cent of them positive and 19.7 per cent of those positive persons again manifesting positive reactions in the cerebro-spinal fluid test.

All the foregoing reports seem to indicate that the syphilitic morbidity in Japan is no longer represented by the young people in their twenties, but by those in their thirties, and that chronic syphilis has become more frequent.

Neurosyphilis

Neurosyphilis, especially with regard to progressive paralysis, typical to this kind of syphilis, has been undergoing a great change both in the number of patients and its manifestations.

According to the reports made by Prof. Uchimura (Tokyo Univ.) and Dr. Shiraki, the patients with progressive paralysis were, from 1921 to 1925, 30.2 per cent of all the patients in Matsuzawa Hospital (the representative mental hospital in Tokyo). It was the highest percentage in the prewar days, with 20 per cent in the year immediately before the War ranking next to it, and since 1950 the percentage has fallen to about 10 per cent, according to the same reports. It may be estimated that the patients with this disease in the major mental hospitals in Japan at the present time are 10-3 per cent, and those with tabes dorsalis in the major hospitals for the internal diseases are 0.5-1 per cent.

The results of the various tests that the members of our clinic have been making on the syphilitic patients of every stages since 1947 indicate that the cerebro-spinal fluid test was applied to 579 cases, and of those cases 146 (25.2 per cent) were with neurosyphilis.

They are classified as follows:

| | |
|---------------------------------------|----------|
| Early asymptomatic neurosyphilis | 25 cases |
| Late asymptomatic neurosyphilis | 37 cases |
| Diffuse meningovascular neurosyphilis | 56 cases |
| Tabes dorsalis | 23 cases |
| Congenital neurosyphilis | 5 cases |

It must be added that there are no signs as yet that indicate a definite decline in the growth of patients with neurosyphilis, and that those with diffuse meningovascular neurosyphilis sometimes manifested in late syphilis are on the increase.

With regard to the state of treatment given to these patients, 70 per cent of those with early syphilis and 95 per cent of those with late syphilis are the cases treated respectively with 9,200,000 units of penicillin and with 14,400,000 units of bicillin. Only about 1 per cent had no treatment. It may be safe to say this is not the exact description of the state of treatment given to the syphilitic patients belonging to the wider social strata, but in view of having had 50 per cent of patients left without any treatment in the days of arsenotherapy, this shows a really great improvement.

The decrease in the number of serious cases of neurosyphilis has given credit to the extensive use of penicillin therapy and also to the improvement made in the state of syphilitic treatment in Japan today.

Syphilis in Expectant Mothers

The medical examination of expectant mothers is entrusted to the governors of local governments in Japan, as provided by the Child Welfare Act, promulgated in December, 1947.

The annual number of expectant mothers in Japan is estimated 1,000,000-1,300,000 and according to Yamamoto, the percentages of those who had blood-tests in 1951 and 1952 were respectively 46.4 per cent and 54.2 per cent, with 2.4 per cent positive in both years. The results of the blood-tests conducted in Tokyo 1949-1952 indicate, according to Obara, that 3.13 per cent of 108, 532 expectant mothers were positive, and according to Sonoda, the results of the investigations made at Yawata City 1948-1955 indicate that 2.73 per cent of 44,895 expectant mothers were positive. These figures seem to suggest that great cities may have a little higher percentages of syphilis.

In 1943 Prof. Sawasaki published an elaborate survey of this problem, establishing 39.3 to 3.3 per cent syphilitic morbidity in expectant mothers. But today, we can say with certainty, the percentage has been reduced, and the more efficient means of the examination, coupled with penicillin therapy, play the part of preventing congenital syphilis.

Let us quote some reliable facts in support of our estimation. According to Nagai, only 0.74 per cent of 6,722 cases, that is the total number of babies for Nagasaki City in 1951, were found with congenital syphilis. He also gives 0.96 per cent congenital syphilis in 9,185 babies for Hiroshima City in 1955. According to a reliable statistics published by the Committee on the Venereal Disease Examination, Ministry of Education, 0.72 per cent of 7,462 school children demonstrated positive reaction in the serological test. This figure

tells a half reduction in the percentage of this disease, as against 1.34 per cent congenital syphilitic morbidity in 6,915 school children for 1942, which was established by Prof. Sato.

Syphilis in Prisoners

It may be commonly acknowledged that hostility to the social order inherent in crimes as well as the loss of social adaptation in prisoners makes for the high rate of the syphilitic morbidity.

Let us substantiate this statement by quoting some figures obtained in the investigation of 1,540 prisoners with heavy penalties at Chiba Prison which was made by the members of our clinic in 1952. The serological test proved that 22.5 per cent of them were positive, and the serological test of their spinal fluid proved that 10.8 per cent of those who had proved positive in the former test again proved positive.

It is to be regretted that the 22.5 per cent seropositive for 1952 does not compare favourably with the 23.5 per cent seropositive rate for the Chiba Prison inmates of ten years before in 1942. One may be inclined to admit, therefore, that the grip of syphilitic morbidity of prisoners is too tight to admit of a least loosening. And let us inform you that the seropositive rate for all the Japanese prison inmates ranges from 14.5 to 29.8 per cent, and for the inmates of several juvenile penitentiaries from 8 to 15 per cent.

Syphilis in Prostitutes

According to the statistics made by the Welfare Ministry of Japan in 1953, the number of prostitutes amounted to 126,328, or 3.1 such women for every 1,000 adult males.

The following are some of the figures indicating the rate of manifest syphilis in prostitutes. Between 1912 and 1945 we have from 0.1 to 0.5 per cent. 4.7 per cent, a rather surprising figure, was revealed in 1947 by the examination of 7,700 street girls which was made at Yoshiwara Hospital in Tokyo. Between 3 and 0 per cent is reported of the years from 1951 to 1952. Since 1952 no records are available, by which it may be understood that examinations of this kind have become impracticable. The figures given above are quoted from Tanaka. The examinations of the so-called "serving women" and street girls totaling 198,208 made at Osaka Hospital established the following figures: 0.8 per cent for the years from 1946 to 1948, 2.2 per cent for the years from 1949 to 1950.

But it may be understood that all these figures do not exactly reflect the actual state of the syphilitic morbidity in Japan. This interpretation is amply substantiated, we hope, by a figure, 20.05 per cent, established by the Committee on the Venereal Disease, Ministry of Education. The figure represents the seropositive rate of 5,941 prostitutes in 1955.

Lastly, we are happy to inform you that our people sincerely expect much from the Anti-Prostitution Act, which was promulgated in May, 1956, and is to be enforced in April, 1958.

Conclusion

Regretting to say, we have no story as yet to tell the extermination of the syphilitic morbidity in our country.

To approach that lofty ideal, it is necessary, we are well aware, to enforce a thoroughgoing medical control of syphilis as is done in some Scandinavian countries and hasten to take steps for the treatment, particularly, of those with late syphilis.



本邦の梅毒

千葉大学医学部皮膚泌尿器科教室

竹内 勝

KATSU TAKENOUCHI

松尾 雷太

RAITA MATSUO

平林 一郎

ICHIRO HIRABAYASHI

(昭和 32 年 6 月 12 日受付)

E. Hoffmann は昭和 30 年 4 月、第 14 回日本医学会総会に“25 年間に亘る梅毒の消長”と題する記念論文を贈り、梅毒はその最初の出現、緩慢なる変貌、そして著しく急激なる退潮と評し、医学の進歩に対し異例の重要性を示した疾患であると述懐した。この事実は正に本邦の梅毒史を通じても亦真実であろう。

遺憾ながら本邦に於ては未だ梅毒の疫学的全容を知るに足る正確な公的資料の誠に乏しいことであり、一般医師の届出を基とした厚生省統計も実際の患者の約 1/15 を把握するのみで近時益々その信頼性を減じた。従つて梅毒の疫学的実態の調査という点に関しても本邦の皮膚梅毒学者に全く委ねられている現状である。

昭和 17 年故佐藤教授の千葉県下梅毒蔓延度の調査、昭和 30 年京大山本教授を主班とする梅毒疫学の劃期的調査はかゝる意味で本邦に於ける二大業績をなす。

余等も亦教室或は本県を中心に最近の梅毒の蔓延状態を詳かに調査し、数次に亘り文献に記載したが、茲にそれ等の調査成績を総括し、併せて本邦の梅毒疫学的現状を紹介した。

大方の御批判を乞わんとする次第である。

なお、本文は本年 8 月 Stockholm に開催される第 11 回国際皮膚科学会、梅毒疫学に関する Symposium の報告草稿として英文を以つて記載した。

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