OCCURRENCE OF LATE SYPHILIS IN UNTREATED SYPHILITIC PATIENTS*

BY

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In Poland the introduction of modern methods of venereal disease control, based on a new epidemiological and clinical approach, has reduced the incidence of syphilis from fifty per 10,000 of population in 1947 to 0.97 in 1955.

The prevention of late latent and seemingly latent syphilis so prevalent in Poland forms part of the general campaign against the disease and its consequences. Patients were found by mass serological examinations, pre-natal and pre-employment examinations, voluntary control examinations, and in other ways. The majority had no complaints and their general health was good but provision was made to enable those with latent syphilis to undergo, free of cost, all the tests and examinations necessary to establish a precise and complete diagnosis, *i.e.* chest x ray, examination by a physician, a neurologist, and an oculist, and finally an examination of the cerebrospinal fluid. To cope with this task special examination centres, each staffed by a team of specialists, were organized in all parts of the country. The results of the specialist examinations and of the spinal fluid tests, together with the case histories, were scrutinized by a highly-qualified syphilologist who decided the course of further treatment where it was deemed necessary. In this way much interesting clinical material was obtained and a special department for the study of late syphilis has been created in the Institute of Dermatology and Venereology.

Clinical Material and Findings

A group of 500 patients not treated previously and discovered mostly during mass serological examinations, was selected for clinical and statistical analysis from the 4,500 patients with different forms of late syphilis observed in the Institute of Dermatology and Venereology from 1950 to 1955.

(1) *Frequency of Various Forms of Late Syphilis.*—Among the 500 syphilitic patients aged 26 yrs and over formerly untreated and unaware of the existence of their disease, 164 (33 per cent.) had latent syphilis and 336 (67 per cent.) were cases of different forms of late syphilis. In the second group, 234 (47 per cent. of the total) had neurosyphilis, 91 (18 per cent.) had cardiovascular syphilis, and nine (2 per cent.) had late benign syphilis. In the group of latent and late benign syphilis, females predominated—while in the group of neuro- and cardiovascular syphilis, males predominated (Fig. 1).

FIG. 1.—Results of examination of a group of 500 patients with untreated syphilis, showing distribution by sex and diagnosis.

A comparison of age and diagnosis shows the comparatively early appearance of systemic changes. However, in each group the percentage is different; cardiovascular lesions increase in the first four age groups while latent syphilis decreases. The percentages of neurosyphilis in the second, third, and fourth age groups are more or less similar. The fifth group is comparatively small and statistically not significant (Fig. 2, opposite).

* Received for publication September 10, 1956.

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FIG. 2.—Distribution by age and diagnosis.

(2) *Frequency of Coexistence of Various Forms of Syphilis.*—In seventy cases (14 per cent. of the group of 500 patients) various forms of the disease coexisted. Cardiovascular and neurosyphilis were found together in 64 patients (Table I). Cardiovascular symptoms predominated in 32 patients and those of neurosyphilis in seventeen; fifteen cases showed far advanced cardiovascular and neurological syphilis at more or less similar stages, and in six cases benign late syphilis was present (Table II).

(3) *Activity of Spontaneous Dying-out of Pathological Processes in Cerebrospinal Fluid and Central Nervous System in Neurosyphilis.*—A comparison was made between the clinical symptoms and the state of the spinal fluid in the 234 patients who showed symptoms of neurosyphilis (Table III). The spontaneous regression of pathological changes in the spinal fluid and the dying-out

TABLE I
FREQUENCY OF THE COEXISTENCE OF VARIOUS FORMS OF SYSTEMIC SYPHILIS IN THE SAME PATIENT

Cases Examined	Total	Combined Forms	Neuro-syphilis and Cardio-vascular Syphilis	Neuro-syphilis and Benign Late Syphilis	Cardio-vascular Syphilis and Benign Late Syphilis
Number . .	500	70	64	4	2
Per cent. . .	100	14	12.8	0.8	0.4

TABLE II
PREDOMINANCE OF CLINICAL SYMPTOMS

Cardio-vascular Syphilis	Neuro-syphilis	Cardiovascular Syphilis and Neurosyphilis (far advanced)	Benign Late Syphilis	Total
32	17	15	6	70

of active processes at different levels of the development of pathological changes in the central nervous system were observed in a comparatively high percentage of patients. In 120 cases, more or less advanced active changes in the spinal fluid were found. In 46 patients only minimum neurological changes such as Argyll-Robertson pupils, insignificant lesions of single cranial nerves, or early symptoms of tabes dorsalis were observed. These were accompanied by unchanged spinal fluid.

This proves that active pathological processes in this group of patients died out spontaneously at a comparatively early stage and that without a detailed neurological examination these changes may possibly not have been noticed. In 21 neurosyphilitic patients, spinal fluid examination revealed partial spontaneous remission, only low titre sero-positive reaction, and insignificant changes in the Lange test, normal cell count, and total protein. In 39 patients, the spinal fluid was normal but they showed advanced clinical symptoms of neurosyphilis, usually tabes dorsalis. It is noteworthy that, in eight patients with active and progressive changes in the central nervous system, the spinal fluid was normal.

TABLE III
COMPARISON OF THE ACTIVITY OF PATHOLOGICAL PROCESSES IN THE CEREBROSPINAL FLUID AND CENTRAL NERVOUS SYSTEM

Diagnosis	Asymptomatic Neurosyphilis	Meningo-Vascular Neurosyphilis	Tabes Dorsalis	Tabes and Optic Atrophy	Paresis and Taboparesis	Other Forms of Neurosyphilis	Total	
							Number	Per cent.
Active changes in cerebrospinal fluid	9	35	33	12	29	2	120	51.3
Active clinical process. Normal cerebrospinal fluid	—	3	1	2	1	1	8	3.4
Spontaneous partial remission of cerebrospinal fluid	5	1	11	2	1	1	21	9
Minimal stationary symptoms. Normal cerebrospinal fluid	—	18	28	—	—	—	46	19.6
Advanced stationary clinical symptoms. Normal cerebrospinal fluid	—	9	26	4	—	—	39	16.7
Total	14	66	99	20	31	4	234	100

(4) *Consideration of Course of Untreated Syphilis in Married Couples.*—From the 500 patients, 26 married couples were selected, and detailed interviews established that:

- (a) Infection occurred after marriage;
- (b) Infection was caused probably by the same strain of spirochaete;
- (c) Duration of infection in both partners was very similar.

A comparison of husband and wife showed that in only five out of 26 couples did the disease take a similar course. In the other 21 couples, the course of untreated syphilis differed, being in general milder in the woman (Table IV).

TABLE IV
COURSE OF UNTREATED SYPHILIS IN
26 MARRIED COUPLES

No.	Age		Diagnosis	
	Male	Female	Male	Female
1	45	38	Asymptomatic neuro-syphilis	Tabes dorsalis
2	57	54	Tabes dorsalis, optic atrophy	Gumma of the elbow
3	49	47	Tabes dorsalis	Tabes dorsalis
4	42	39	Tabes dorsalis	Latent syphilis
5	26	28	Tabes dorsalis	Latent syphilis
6	47	44	Latent syphilis	Tertiary syphilide of the skin
7	61	59	Paresis	Specific aortitis, Tabes dorsalis incipiens
8	53	51	Specific aortitis	Latent syphilis
9	46	34	Asymptomatic neuro-syphilis	Latent syphilis
10	51	49	Tabes dorsalis, optic atrophy, specific aortitis	Tabes dorsalis incipiens
11	67	60	Tabes dorsalis	Latent syphilis
12	40	34	Latent syphilis	Tertiary syphilis of the skin
13	49	52	Specific aortitis	Specific aortitis
14	45	43	Meningo-vascular syphilis	Latent syphilis
15	43	43	Specific aortitis	Latent syphilis
16	25	27	Syphilitic meningomyelitis	Latent syphilis
17	51	49	Cardiovascular syphilis and meningomyelitis	Latent syphilis
18	46	40	Tabes dorsalis	Latent syphilis
19	71	65	Latent syphilis	Latent syphilis
20	45	43	Latent syphilis	Paresis
21	51	48	Paresis	Latent syphilis
22	65	61	Tabes dorsalis	Latent syphilis
23	53	54	Cardiovascular syphilis	Cardiovascular syphilis
24	50	49	Meningo-vascular syphilis	Gummatous syphilis of the liver
25	29	27	Paresis	Latent syphilis
26	48	43	Latent syphilis	Tertiary syphilis of the skin

Conclusions

Final conclusions regarding the course of untreated syphilis cannot be reached from the present

study for the following reasons:

- (1) There are wide differences in the ages of the patients.
- (2) The duration of infection is not known.
- (3) Patients achieving spontaneous sero-negativity and recovery are not included.

However, as our patients were not selected and were mostly discovered during the serological examination of large groups of the population, this study of the course of untreated syphilis shows the comparatively early appearance of systemic lesions, the frequency of various forms of late syphilis, and the frequent coexistence of different forms of systemic change in the same patient.

It also shows that spontaneous burning-out of the pathological processes in the cerebrospinal fluid and in the central nervous system, at different levels of development of the clinical picture, is comparatively frequent. Finally, analysis of the 26 married couples shows that, in spite of being infected by the same strain of spirochaete for a similar length of time, the course of the disease was different in husband and wife. This fact stresses once more the fundamental importance of the individual immunobiological processes which occur during the long course of syphilitic infection.

Summary

Among 4,500 patients with different forms of late syphilis seen at the Institute of Dermatology and Venereology in Warsaw from 1950 to 1955, 500 were found with untreated syphilis. Their ages ranged from 26 to over 65 years. Of this group, 164 had late latent syphilis, while 336 had different forms of late symptomatic syphilis. In this latter group were 234 with neurosyphilis among whom a comparison was made between the clinical symptoms and spinal fluid findings. In 38 patients with advanced clinical symptoms, the spinal fluid was normal. In most neurosyphilitic patients, active pathological processes died out spontaneously at a comparatively early stage. In only five of 26 married couples in the group had the disease taken the same course. All the married couples had become infected after marriage. In general, the course was milder in women. Seventy patients had various coexistent forms of the disease. This analysis provides some observations on the course of the immunological processes and on the development of late systemic changes in untreated patients.