

CHANCER	CHANGROID	HERPES PROGENITALIS	SCABIES	CARCINOMA	LATE LUTETIC LESION
Incubation 3 to 6 weeks	2 to 5 days	Short	Probably several weeks	No known incubation but slow developing	No incubation period
May be single or multiple, more commonly single	More commonly multiple	Usually multiple	Usually multiple	Single process	Single usually
Subjective symptoms slight or absent	Considerable pain and tenderness	Usually itching and burning	Itching	Pain	Essentially destructive in its nature
Lesion not excavated and surrounded by normal tissue. Surface of lesion smooth raw muscle color. Often indurated	Lesion excavated, edges of ulcer undermined, surface of lesion dirty	Begins as vesicle on inflamed base	Vesicular, papular or pustular. Burrow may be seen, lesions found in other localities	Ulcerated slightly elevated pearly border. May be crusted	Surface is granular and more apt to be infected.
Glands are hard, discrete not tender, not attached to skin	Glands hard and tender, matted together, frequently break down	No glands	No glands	Glands develop very slowly.	Glands not involved
Only auto-inoculable in first 10 to 12 days	Always auto-inoculable	Not auto-inoculable	Is spread by auto-inoculation	Not auto-inoculable	Not auto-inoculable
Treponema pallidum	Bacillus of Ducrey present	Usually no organisms	Acarus scabiei present	No organisms	Wassermann positive in 70% to 80%
Occurs at any age	Occurs at any age	Usually during the years 20 to 40	Usually during the years 20 to 40	Occurs late in life	Possible previous history of syphilis

The differential diagnosis in a genital lesion lies between the following conditions: chancre, chancroid, herpes progenitalis, scabies, carcinoma and late luetic lesions. The following table shows the difference:

#### CONCLUSIONS.

One of the most important factors, if not the most important, in the successful diagnosis of primary syphilis is a lesion which has not been treated either with silver nitrate or some form of mercury.

In a series of 97 consecutive cases a positive diagnosis was made in 96% by means of the darkfield microscope. In a number of these cases, however, repeated examinations were necessary.

The positivity of the Wassermann test, which at the end of ten days averages about 30-35%, increases to practically 100% at the end of the fifth week after the appearance of the chancre.

By employing careful clinical observation and both laboratory methods of examination, repeatedly if necessary, but few cases of primary syphilis should go unrecognized.

#### REFERENCES.

- <sup>1</sup> Taylor, Robert W.: Genito-Urinary and Venereal Diseases, Lea Bros. & Co., 1900, p. 473.
- <sup>2</sup> Klauder, Joseph V.: The Early Diagnosis of Syphilis, Jour. A. M. A., 1919, No. 10, p. 693.
- <sup>3</sup> Fournier, A. (Quoted by Hazen, Henry H.): Syphilis, C. V. Mosby Co., 1919, p. 72.
- <sup>4</sup> Smith, C. Morton: The Treatment of Syphilis, BOSTON MEDICAL AND SURGICAL JOURNAL, 1916, No. 6, p. 198.
- <sup>5</sup> Noguchi, Hideyo: Spirochetes, Am. Jour. Syph., 1917, No. 2, p. 261.
- <sup>6</sup> Craig, Charles F.: The Wassermann Test, C. V. Mosby Co., 1918, p. 135.
- <sup>7</sup> Bulkely, L. D.: Morrow's System of Genito-Urinary Diseases, Syphilology and Dermatology, New York, 1893, No. 2, p. 61.
- <sup>8</sup> Cole, H. N.: Report of a Series of Sixty-One Extragenital Chancres, Jour. A. M. A., 1916, No. 25, p. 1805.

### LEAD IN THE URINE IN NEURO-CIRCULATORY DISTURBANCES.\*

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Of late, lead poisoning has been a favorite subject with industrial hygiene investigators and already much work has been done on acute and subacute plumbism in lead workers. Recently some work has been started on chronic lead poisoning, and very recently, experiments have been begun to determine the intake and output of ingested lead. In the cases of acute and subacute lead poisoning reported, and in those found in hospital records, there has been shown a trace of lead in the urine.

\* Read at the Neurological Staff meeting, Massachusetts General Hospital, March, 1920.

Some observers also test for lead in the stools, but stool lead shows ingestion and does not show absorption. The urine examination for lead is more satisfactory because it shows the amount of absorption.

Dr. Chapman of Providence was one of the first to show the amount of lead necessary to cause symptoms and signs. He asserted that from one quarter to one half a milligramme (.00025 to .0005) of lead per liter of urine (estimated by standard methods) is sufficient to cause chronic plumbism, and quoted a number of cases which, he alleged, were due to this amount of lead or more. Accepting his standard as the minimum amount of lead to cause symptoms and signs, we are reporting the following cases:

CASE 1. No. 6481, Butler Hospital Record. male; aged 24; born and raised in Woonsocket, R. I. He served with the A. E. F. in France. While in the service he became paralyzed on the right side and became aphasic. He was admitted to Butler Hospital on August 29, 1919. Before the war he lived in Woonsocket and used the city water. He had had several occupations in a mill and had worked about three months in a paint shop as a paint scraper. When examined he was found to have a right hemiplegia with aphasia. In this case there was no evidence serologically of neurosyphilis. Signs and symptoms of brain tumor, cardiac disease, renal disease with hypertension (blood pressure 126-96), arteriosclerosis, or of endocrine disease, were absent. There was nothing in the history of the findings which suggested an infectious cause or a blood condition which might cause a cerebral hemorrhage. The work in the paint shop suggested lead. After a short course of KI the urine examination showed 0.0016 of lead per liter of urine. Examination of home tap water showed 0.0035 lead per liter.

CASE 2. No. 2985; male; aged 49; carriage painter by trade. One year ago, after a tooth extraction, he showed a right hemiplegia without aphasia. After this he suffered a depression or so-called "nervous breakdown." Examination showed his teeth in poor condition. Blood and spinal fluid Wassermann were negative. Blood pressure was 130-90. Fundi were negative. Urine examination showed no albumen and no sugar. Gravity adjustable. It also showed 0.004 lead per liter of urine.

CASE 3. No. 2992; male; aged 50; carriage painter. Six years ago he was taken sick on the street with vertigo and sub-sternal distress. Since that time he has had many like spells. At the present time he has a phobia for crowded places, street cars, etc. On examination the fundi were negative. Cranial nerves

were negative. Teeth were in poor condition. Heart was enlarged. Arch dulness was increased. Blood pressure was 190-90. In the right third interspace there was a diastolic murmur. Brachials were visible, tortuous, and sclerosed. Blood Wassermann negative. Urine examination: Albumen showed as a slightest possible trace. Specific gravity 1010, not fixed. No casts and no sugar. Lead, after KI treatment, showed 0.001 per liter of urine.

CASE 4. No. 2762; male; aged 50; no occupation for two years. Complaint—Multiple pains and aches of face and body. Neurological and systemic examinations were negative. Blood Wassermann negative. Teeth showed much pyorrhea. No evidence of focal infection. Urine negative for sugar and albumen. It showed 0.0019 of lead per liter. Much relief came after the removal of the teeth and the substituting of spring water for tap water and the administration of KI by mouth.

CASE 5. No. 2543; male; aged 40; store-keeper. Complaint—Epileptic spells at 36. Examination showed him to have a normal personality. Urine was negative for sugar and albumen. Red renal test normal. Blood Wassermann and spinal fluid negative. Spinal fluid showed 18 cells and an increase of globulin. There is no evidence of arteriosclerosis. X-rays of sella turcica showed an elongation of the anterior and posterior clinoid processes and a definite shadow within the sella, thought to be a condensation of the pituitary gland. Urine showed 0.0082 lead per liter. Spring water was substituted for tap water for drinking and cooking, and KI was given by mouth. Much improvement has been noted in general condition and in the number of seizures.

CASE 6. No. 2765; male; aged 40; lawyer. Complaint—A migraine of a migraine family. Within the past year he has had two fainting spells. Excellent personality. General examination, neurological and systemic, showed no abnormalities excepting an eye difficulty for which he wore glasses. Examination of urine showed 0.0018 lead per liter. House tap water showed 0.566 p.p.m. His glasses were refitted, tap water was no longer ingested and KI was administered. There have been no headaches and no fainting spells in four months, which is unusual.

CASE 7. No. 2532; male; aged 44; master plumber. Complaint—Malaise, headache, indigestion, and vascular hypertension. Blood pressure 200-100. Blood Wassermann negative. Urine negative for sugar and albumen. Red renal test, 65%. Urine showed 0.0019 of lead per liter. While under observation he had an intestinal hemorrhage, probably from duodenal ulcer.

CASE 8. No. 2564; female; aged 42; housewife. Patient was first seen on January 17, 1920. Complaint—She complained of palpitation

and headache and said that she had been told that she had high blood pressure. Examination showed that she had no organic nervous disease. Blood Wassermann was negative. In the urine there was no albumen and no sugar. The specific gravity was variable. The red renal functional kidney test was 60%. Blood pressure was 180-95. There were no signs of anemia. The urine showed 0.014 of lead per liter. The tap water of her house showed 0.45 p.m.p. Spring water was ordered and tap water denied either for cooking or drinking. Small doses of KI were administered. Three months later palpitation had gone; the blood pressure was 150-90. The lead in the urine was reduced by two-thirds. This woman was impressionable but claimed to be benefited.

CASE 9. No. 701; male; aged 60; inventor. Complaints—Loss of color, constipation, general weakness, and left hemiplegia. He showed signs of hemiplegia of mild degree without speech disturbance. His general weakness upset him more than his hemiplegia. Urine analysis showed no albumen and no sugar. Specific gravity 1015. Red renal test was 50%. Blood Wassermann was negative. Blood smear was negative for malaria and signs of anemia. There was no blood in his stools and no ova. He was a man who had had many business cares, had not used alcohol and had used but little tobacco. In a liter of his urine there was found 0.0032 of lead. The tap water in his home showed 0.43 p.m.p. and that of his place of business 0.63 p.m.p.

CASE 10. No. 2759; male; aged 54; machinist. Complaint—For one year he has suffered from pain and coldness of his feet. In the winter he has suffered sufficiently to interfere with his vocation. He stands and sits at his work. He lives in the city in a very old house and while at work drinks water from an artesian well. There was no syphilis in his history. He admitted the abuse of alcohol up to a few years ago. He had used much tobacco over a period of many years. There were no signs of organic nervous disease and no signs of cardio-renal disease (blood pressure 140-90). The retinal vessels were sclerosed, the radials were moderately sclerosed, the arch did not percuss enlarged. There was pulsation in his posterior tibials but no pulsation in his right or left dorsalis pedis. His teeth had been extracted. His prostate was not enlarged. On both feet, his first and second toes were pale and cold. The home tap water showed 0.5 of lead p.m.p. Examination of his urine showed 0.012 of lead per liter. By stopping the ingestion of his house water, and by the use of KI, electricity, and massage, he showed improvement.

CASE 11. No. 2641; female; aged 47; housewife. Complaints—Acroparaesthesias of her hands and a great feeling of fatigue; cramp-

like feeling of the muscles; constipation. Examination showed a woman with active deeper reflexes with no evidences of cardiovascular-renal disease. She had some thickening around her small joints—a mild arthritis, perhaps. Blood Wassermann was ++. A spinal fluid examination was refused. A second blood Wassermann was negative. Her teeth were in poor condition. She was looked upon as a case of arthritis and ataxic paraplegia without any evidence as to the cause. The urine showed 0.0026 of lead per liter. The routine treatment previously described was instituted but she was lost sight of.

CASE 12. No. 2480½; male; aged 40; printer. Complaint—Paralysis of his arms and wrists, slow in onset. Examination showed patient to have a progressive muscular atrophy involving most of the muscles supplied by the brachial plexus on both sides. The knee jerks were active. There were no Babinski and no ankle clonus. There was some loss of muscular substance of the right gluteal group. There was a slight bladder disturbance. Of the cranial nerves there were no pathological signs excepting a right Horner's syndrome. Competent neurologists looked upon this case as one of progressive muscular atrophy coming on in a printer. Much later a urinary analysis showed 0.026 of lead per liter. Routine examination, however, showed a positive blood Wassermann, and the spinal fluid findings were those of neurosyphilis.

#### SUMMARY.

These twelve cases represent nervous disorders of many types. Not one of them showed signs of lead poisoning, like the lead-line, anaemia, or stippling. It was only by making a routine urinary examination for lead in doubtful cases that the lead element was discovered. These cases are reported, therefore, to stimulate corroboration or refutation of Chapman's standard, that four-tenths of a milligramme of lead per liter of urine is sufficient to cause symptoms; and secondly, to argue for the consideration of lead as the etiological factor, or one of the etiological factors, in obscure cases presenting neurological signs and symptoms.

### A REVIEW OF THE RECENT WORK ON AMOEBIC DYSENTERY.

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DURING the period of the war considerable advance has been made in our knowledge of several of the factors of the amoebic infection