A FIFTH CASE OF SCLERODERMA WITH ARSENIC IN THE URINE

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Scleroderma as a manifestation of chronic arsenic poisoning was discussed in a recent issue of *THE ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY*.¹ Four consecutive cases were cited, three of the diffuse variety and one of the localized type, in which arsenic was demonstrated in the urine. The following is the fifth case of the series.

REPORT OF A CASE

History.—F. W. (No. 299872), in the outpatient department of the Massachusetts General Hospital, was a housewife of Russian Jewish extraction who had lived in Boston the past thirteen years. She was 34 years old, and up to the time of her present illness, which began four years ago, she had always enjoyed good health. Her husband and four children were living and well; there had been no miscarriages. She had never engaged in any occupation outside of her own housework, and so far as she knew, had never used any arsenical preparations or been exposed to arsenic in any form; she denied the use of any medicines prior to her present illness. Although she denied the use of any medicine containing arsenic during her illness, and although the hospital records show that none was used, the possibility of having received it from an outside source cannot be positively ruled out.

Neuritic Manifestations.—Neuritic manifestations ushered in the present illness. Numbness and soreness of the fingers of the right hand, and a few weeks later of the left hand, were the first symptoms noted. Since then there had been soreness, aching and attacks of cyanosis of the hands, legs and feet, especially during cold weather. During the first year the hands, forearms, legs and feet frequently became swollen after activity but improved following rest. Excessive perspiration of the palms had been constant. During the past year she had had difficulty in sleeping.

Skin.—The patient believed that the brown pigmentation and patches of leukoderma had been present about a year. She did not recall definitely when the skin began to harden, but the process had been progressive.

General Condition.—There had been weakness and great loss of weight. Occasional lacrimation had occurred at night during the past year. There had been excessive flow of saliva at night during the past year, sufficient to wet the pillow. At intervals through the present illness, the tip of the tongue had been sore and burning, especially during cold weather. During the past four months she had had moderate sore throat. She had always had headaches which, during the present illness, had not been more severe than formerly.

Her appetite had been failing for the past two years. During the past eighteen months she had had attacks of pyrosis with eructations, relieved by

1. Ayres, Samuel, Jr.: Scleroderma as a Possible Manifestation of Chronic Arsenic Poisoning, *Arch. Dermat. & Syph.* 2:747 (Dec.) 1920.

soda and to some extent by taking food; there had been no vomiting. During the past three weeks the bowels had moved three or four times a day, and there had been abdominal cramps like "knives going around," often severe enough to cause the patient to go to bed. There have been no bloody or tarry stools.

There have been no symptoms referable to the cardiorespiratory or genito-urinary systems.

Examination.—The skin presented the most striking features. The areas of greatest involvement were the fingers, hands and forearms to just above the elbows. Here the skin was glossy, tightly drawn and infiltrated so that it could not be pinched up; the fingers were fixed in a claw-like flexion. These areas showed a brown pigmentation with a few patches of leukoderma. Both thighs were indurated but not pigmented. The lower two-thirds of the right leg showed pigmentation and sclero-edema; it pitted on pressure but the pitting remained a considerable length of time. The face was moderately involved; the pinnae of the ears were thickened, the nose was narrow and pointed with the skin drawn tight and the lips were narrow. Over the sternum the skin was infiltrated, and there were many telangiectases. The palms and soles were wet with perspiration, but there were no keratoses. Pubic hair was normal, but there was complete absence of axillary hair (the patient said she never had any). The scalp hair was of good quality but somewhat sparse; the eyelashes also were thin. The tongue was slightly coated in the center, but distinctly smooth and atrophic along the edges and tip. The tonsils were slightly large and red. The thyroid gland was not palpable; there were a few small palpable lymph glands in the neck. Knee jerks and plantar reflexes were absent; the pupils reacted to light. Sensation to pain and touch was normal. Both feet were flat. Aside from these findings, the physical examination was negative.

Laboratory Findings.—Routine blood and urine examinations were not made. The Wassermann reaction was negative. (Four years ago, at the beginning of her illness, the Wassermann reaction was reported positive at the Peter Bent Brigham Hospital, and she was given three intramuscular injections of mercury, but she failed to continue at the clinic; she received no arsenic there.) On August 19, a quart of urine was examined for arsenic by the Sanger method in the chemical laboratory of the hospital; no arsenic was found. On August 31, a second sample of urine and a specimen of hair were examined for arsenic, with negative results. The patient was then given a saturated solution of potassium iodid, ten drops three times a day; eighteen days later a third specimen of urine was tested, resulting in a definite positive qualitative test for arsenic. The presumption is that the potassium iodid combined with the arsenic, which was stored in the tissues, converting it into a soluble form which was easily eliminated, conforming to the reputation which potassium iodid enjoys in that respect. Putnam² has pointed out, however, that arsenic may be excreted only intermittently by the kidneys, and that even in acute fatal cases of arsenic poisoning the urine has been found free.

Recently Dr. Richard L. Sutton of Kansas City has added a sixth case to this series. His patient had the diffuse type of scleroderma and showed arsenic in the urine in an amount sufficient to quantitate. The test was made by the Kansas City Testing Laboratory. In neither of these two cases was the patient aware of the source of the arsenic.

2. Putnam, J. J.: Boston M. & S. J. **122**:421, 1890.

It is desirable to emphasize strongly a point which was made in the previous paper on this subject, namely, that no assertion is being made that an etiologic relationship between scleroderma and chronic arsenic poisoning has been established. The evidence is entirely circumstantial, and the series of cases is too small to justify definite conclusions. However, the facts seem sufficiently interesting to warrant presentation merely for what they are worth.

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