

Lectures.**CLINICAL LECTURE ON FAILURE OF SEXUAL DEVELOPMENT,¹**

DELIVERED AT THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

BY PROF. T. GAILLARD THOMAS, M. D.

GENTLEMEN,—The little girl whom I present to you to-day is a clinical lecture in herself. Her name is Rachel W., and her parents are Polish Jews. She is eighteen years of age, and yet, to look at her, you would never imagine that she was anything more than a child of twelve. Physically she is, indeed, a girl of twelve; but chronologically she is a young woman of eighteen. The history, as derived from her mother and herself, is a very brief one: She is all the time sick, she says; complaining of weakness and more or less cough, and of pains in the head, back, chest, limbs, and lower part of the abdomen. In addition, her mother informs me that she has never in her life shown any sign of menstruation. It is true that, in answer to a leading question, she says that at a certain part of every month the pains mentioned are aggravated; but this statement must, I think, be received with some degree of allowance. When the girl speaks you cannot but be struck by the peculiar character of her voice. It is that of a boy of eighteen, whose voice has just undergone the change incident to the age of puberty, and is certainly a much more man-like voice than that of her mother.

These, then, are the facts of the case. The inference which we draw from them is, that that remarkable change which ordinarily takes place at puberty has not in this instance occurred; a conclusion which is confirmed by the physical examination, of which I will presently speak to you. What the special reason for the non-appearance of this change is we cannot say, though the ganglionic nervous system is probably at fault. At the age of puberty, as you know, the uterus in ordinary cases rapidly grows to three times its former size, and the ovaries also become much more fully developed. Ovulation then takes place, and when menstruation has once commenced, the uterus becomes still further enlarged. In a certain number of cases, such as you will meet from time to time in your practice, these changes do not take place. In the present instance the condition of the patient approaches that of cretinism, so commonly met with in some parts of Switzerland, except in regard to mental capacity, as this girl is perfectly intelligent. If nothing is done in the way of treatment, and possibly in spite of this, should it be attempted, she will be a little old woman at forty, no larger than she is now. Here there has been an abnormal development, so that the voice is that of a man. The mammae are also like those of a man, and her form entirely lacks that rotundity and size which we ought to find at her age. The condition of this patient is, indeed, that of a woman from whom the ovaries had been removed before the age of puberty. There are, however, a few rare exceptions, in which the individual, while having the vagina, uterus, and ovaries perfectly developed, is yet altogether like a man in other respects.

I will now show you upon the blackboard what the

vaginal examination revealed here. I found that the hymen offered no obstruction whatever, as one would naturally expect in such a case, and, passing my finger up the small vagina, I found at its upper extremity an acorn-like uterus, such as I now depict for you. By means of conjoined manipulation I then endeavored to determine the size and position of the ovaries, but found this quite impossible. Nothing is to be inferred from this, however, as it is often the case that the ovaries when of normal size, and even when somewhat enlarged, cannot be found at all by the examiner. You should always receive with considerable allowance the statement of any one who says he can map out the ovaries with perfect ease. He may imagine that he does this; but the chances are that he is quite mistaken about the matter. In certain favorable subjects the ovaries, when of normal size, can be thus mapped out; but in a very large number of cases this is utterly impossible. Here, then, we have an infantile, undeveloped uterus, with probably the same condition of the ovaries.

What is the prognosis in a case like this? Some fifteen or twenty years ago the treatment of such cases received a great deal of attention, and the gynecologists reported quite a number of successful results. I myself was one of those who did so, and who felt sanguine of the same good results in other cases. Since then, I must confess, I have lost a good deal of faith in regard to the matter, for I have found by experience that it is only in a very limited number of cases that treatment is at all satisfactory. While, however, I should be by no means hopeful in the case of this girl, I certainly think that she ought to have the benefit of a special course of treatment. It would be easy enough to say that as nature had failed to do her part, there would be no use in trying to accomplish anything here. But instead of taking such a hopeless view of the case, which would condemn the girl to a life with very little happiness in it, I would advise that at all events the attempt should be made to spur on nature to carry on the development which for some reason she has hitherto neglected in this case. If at the end of three months of persevering and systematic effort no progress had been made, I should then think it useless to go on with any further treatment.

I shall, therefore, endeavor to persuade the mother to let her daughter enter my service at the Woman's Hospital, and I will now give you an outline of the plan of treatment that will be adopted in case she gives her consent. In the first place you will understand that if by any means, by directing nutrition to the uterus, we can enlarge the organ, a considerable amount of good will be accomplished; and if, in addition, the ovaries can be excited by reflex irritation, there will be some ground of hope for a successful result. In my private hospital there is at present a young girl of seventeen who has improved in the most wonderful manner under treatment, and in whom the menstrual flow can now be brought on regularly every month. The plan of treatment that I pursue in such cases is as follows: I begin by inserting into the uterine canal a very small sea-tangle tent, which I keep in position by tamponing the vagina. This is to be removed in twenty-four hours, and in two or three days a slightly larger tent is put in. After a time two or three small tents may be used together, and in this way we can really make the uterus grow by producing an afflux of blood to the organ. It is, to be sure, a very clumsy way of

¹ Reported for the Boston Medical and Surgical Journal.

accomplishing this; but as it is the only way that I know of, I am content to practice it. As time goes on we can use larger tents, and if we really succeed in increasing the size of the uterus somewhat, a glass stem should be introduced into the cavity and supported by a cup pessary. This stem should be worn both day and night, but should be taken out once in every three or four days. At the same time means should be directed to the improvement of the general system. Highly nutritious food is of the first importance, and the patient should have not three, but six, meals a day. This is what the young lady of whom I have just spoken is getting. That is, she has her three regular meals, and, in addition, a tablespoonful of malt extract in a tumbler of milk midway between breakfast and luncheon, between luncheon and dinner, and when she goes to bed at night. Such patients rarely have an appetite, and they must really be forced to eat, although not exactly in the way in which fowls in course of artificial fattening in Europe are forced. Some of you may have seen at the *jardin d'Acclimatation* in Paris the ingenious system of M. Martin, by which fowls, in consequence of forced alimentation given regularly every three hours, are doubled in weight in eighteen days; while in a barn-yard they might not fatten in six months. In the matter of feeding such patients it is almost always necessary to combat the will, and especially in regard to the matter of milk, which at first they all say that they cannot possibly take. Girls of this class are always anæmic, and require a large amount of nourishment. Look at the face of the one now before you, and see how pallid it is. Very likely she takes a cup of tea and some bread for her breakfast, some salt meat or fish with potatoes for her dinner, and tea and bread again at night. If she should enter the hospital special attention would be paid to her diet, and I think it would be found that she would gain at the rate of two or two and a half pounds a week. But, besides, it would be necessary to look after the condition of her skin, which now feels more like iced parchment than anything else that I can think of. The impression which it gives one is precisely that of the skin of a man suffering from cirrhosis of the liver. To bring about a healthy condition of the cutaneous surface she would be given three Turkish baths each week, and on the days when she did not have a bath massage would be thoroughly applied by a professional manipulator. In this way the entire skin would be stimulated to action, and passive exercise given to every muscle of the body. In addition, she would be required to exercise with gymnastic apparatus every day after the bath or the massage. In private practice it is, of course, not so easy to carry out such a course of treatment as in a hospital; but it should be imitated as far as possible, and if the mother of the patient is intelligent, all the principal difficulties in the way can be overcome. What, then, have we done so far? In the first place we have improved the blood state of the patient; secondly, we have improved the cutaneous circulation and given tone to the nervous system; and, thirdly, we have to some extent developed the uterus.

We now begin to add something to the treatment, and that is, electricity. The galvanic battery, I think, is the best for the purpose, and a cup electrode should be placed over the cervix uteri while the other electrode is carried to the nape of the neck, and then down along the spine. In the same way an electrode should be placed over the ovaries in succession, so as to stim-

ulate these organs also by direct irritation. It may be that in the course of three months after the commencement of the treatment an erratic hæmorrhage from the uterus will come on, and this is to be regarded as a most encouraging symptom, for it is almost sure to be followed by others. In my private case, as I said, I can now bring on the flow regularly every twenty-eight days, and the young lady is so greatly improved in every way that she and her friends are abundantly satisfied with the result, and she will now soon leave the hospital. She certainly looks like an entirely different person from what she did before the treatment was undertaken. For the present, however, she will each month come to my office three days before the time for the menstrual flow, when by means of a Peaslee uterine sound (which I prefer because it has a very blunt point), covered with rubber with the exception of the last two or three inches, a galvanic current will be applied to the fundus. The ovaries will also be stimulated by the same agent. On the following day, and again on the day when the flow is expected, this application will be repeated. In one case the procedure resulted in pelvic cellulitis; but as this is the only instance out of a very large number of patients in whom I have used this course of treatment, I think there is very little danger of this occurring.

It is very evident that something ought to be done for this girl. It is very easy for the physician to screen his conscience under the shelter of a prescription in such cases; but in every instance of the kind an honest and persevering effort ought certainly to be attempted. If at the end of three months, however, there should not be any indication of ultimate success, it would scarcely be worth while, as I have intimated, to carry the trial any farther. My private case, to which I have so often alluded, has proved a brilliant success; but this, you must understand, is the exception rather than the rule. The first case which attracted special attention to this subject in this city was that of a young lady in high life who, in addition to her other troubles, suffered from epilepsy. A well-known gynecologist undertook her case and succeeded in bringing on the menses; while the epilepsy, greatly to the satisfaction of the patient and her friends, almost entirely disappeared in consequence. Of course, the success achieved in this instance induced many other physicians to adopt the plan of treatment in similar cases. The reason that I do not have the same confidence in it that I did once is, that while in a few cases the method is successful, there are a great many others in which the result is negative. To illustrate how changes take place in medical opinion, I may mention that not longer than ten or twelve years ago sterility was almost universally treated in this city by cutting open the neck of the uterus. You all know the history of the operation which was introduced by Sir James Y. Simpson, of Edinburgh. In only one case, perhaps, out of five hundred, it was successful, and so it gradually fell into disuse, until it is now almost entirely abandoned. It has, indeed, been given up more than I think it really ought to be, as there are a certain number of cases in which it seems to be legitimately called for. This is an important case, as it is a type of a class that you will meet with occasionally in practice, and I have dwelt upon it at considerable length for the reason that I may not have the opportunity of presenting another similar one during the course, as such cases are by no means very common.

If the patient will go in the Woman's Hospital she will be given the benefit of a systematic course of treatment such as I have described, and I will promise to report the progress of the case to you at least once a month while she remains. It is very doubtful, however, whether she will consent to enter the hospital, as persons of her race are apt to be strongly prejudiced against such institutions, and, indeed, against accepting charity of any kind. While speaking of her race, I may mention that it is very rare to find the condition here present in Jewesses, among whom the age of puberty, which, as you know, varies in different races and nations, occurs ordinarily at a very early period.

Original Articles.

ON CERTAIN UNRECOGNIZED FORMS OF LEAD-POISONING; AND ON THE POSSIBILITY OF MISTAKING BISMUTH FOR LEAD IN URINE ANALYSES.¹

BY JAMES J. PUTNAM, M. D.

A NUMBER of cases have come to my notice within the past few years in which an examination of the urine has shown the presence of lead, while the symptoms and clinical history were not such as are usually considered characteristic of lead-poisoning, in fact simulated those usually classed as other types of disease. Three of these cases were diffused forms of chronic interstitial myelitis, and two were of the character of cerebral neuroses.

Besides these I have seen two interesting cases with Dr. F. Minot, one presenting some of the symptoms of spastic paraplegia (so-called lateral sclerosis), and the other being a form of diffused poliomyelitis anterior.² In both of them the improvement under iodide potassium seemed to justify the diagnosis, although in the latter case syphilis was recognized as a possible cause of the disease. It is, of course, nothing new to say that lead-poisoning may simulate other diseases, or that any one or all of the classical symptoms may be wanting.

The likeness and unlikeness of some forms of the so-called encephalopathy to progressive paralytic dementia (Monakows and others), to intra-cranial tumor (Byrom Bramwell), to hemiplegia from cerebral hemorrhage (Raymond and others), has repeatedly been commented upon.

So far as I know, the first case in which lead was supposed to have given rise to symptoms simulating any other form of spinal disease than the poliomyelitis anterior, which some observers believe to underlie the typical atrophic paralyses, is the one, already referred to, which was reported by Dr. F. Minot, of Boston, before the Medical Improvement Society in 1881, and recorded in the Boston Medical and Surgical Journal for the same year.

At the meeting of the Neurological Society in 1882, Dr. Webber read a paper upon the pathology of lead-poisoning, and again brought forward the fact of the relation between lead-poisoning and chronic sclerotic affections of the spinal cord, and reported a case also

resembling in some respects the so-called lateral sclerosis.

Although the idea is not new, therefore, that lead may turn up when least expected, as a cause of obscure forms of disease of the various tissues of the body, yet it is evident that clinical history of the disease is in need of further study. In the first place we require a closer investigation of symptoms in cases where lead is manifestly present; and in the next place it is necessary that a large number of routine examinations of the urine should be made, under due precautions, especially in obscure spinal cases, to ascertain with what frequency lead is liable to be present.

In none of the cases referred to in this paper were blue line on the gums, colic, marked emaciation or discoloration of the skin, characteristic localized atrophic paralyses, or typical cerebral symptoms present, except where the contrary is specified; and the diagnosis was established solely through the examination of the urine, after the administration, for a few days, of iodide potassium.

It is of course not certain that the symptoms observed were really due to the influence of the lead which was found, though from what we know of the liability of lead to set up chronic degenerative inflammations in the various tissues of the body,³ this inference must be admitted to be a fair one.

I shall append at the end of the paper a sketch of the cases referred to, and proceed now to speak of the precautions necessary to a satisfactory examination of the urine for lead.

All the chemical work of the investigation was done in the laboratory of the Harvard Medical College, under the supervision of Prof. E. S. Wood, and the final tests were made by his own hand. The more recent analyses were made by Professor Wood's assistant, Mr. J. W. Perkins, who has been giving especial attention to this subject.

The detection of this metal in the urine is by no means without its difficulties.

Neubaur and Vogel,⁴ writing in 1871, say laconically, that it is sometimes present, but that the analysis is difficult, and not always successful. The quantity present, especially when no iodide of potassium is being taken, and also after this drug has been taken uninterruptedly for more than a few days at a time, is, according to M. Pouchet,⁵ not often more than 0.001 to the litre, rising considerably when iodide of potassium is first given, or when its use is suspended for a time and then again resumed. The quantity of urine to be analyzed should therefore be at least one quart, and should be collected during the administration of iodide of potassium, given either for the first time or after an interval of repose.

The liability of the reagents to contain lead is well known. It applies not only to the sulphuric acid and ammonia, but also to the ordinary filtering paper, though not to the so-called Swedish paper.

It is needless to say that Professor Wood was fully alive to these dangers, and took every precaution to avoid them, with what success is shown by the fact that in parallel analyses, which were constantly being made, no lead was found. One additional and important source of possible error suggested itself to him,

¹ Read at the meeting of the American Neurological Association, June, 1883.

² Reported by Dr. Minot at a meeting of the Medical Improvement Society, Boston Medical and Surgical Journal, August 16, 1883.

³ See Rudolf Maier, *Exper. Studien über Bleivergiftung*. Virchow's Arch., vol. xc., p. 455.

⁴ *Analyse des Harns*.

⁵ Cited in the London Medical Record, November 15, 1880; also by Dr. Hills, Boston Medical and Surgical Journal, vol. cv., p. 125.