

Dr. R. A. GIBBONS said that Professor McIlroy had read an excellent and most interesting paper, the tables alone showing an enormous amount of work. He would only remark that one point Professor McIlroy had brought out was, he thought, of great practical importance. From these statistics it was seen that spontaneous version from breech presentations to vertex was so frequent before the thirty-sixth week that it was really not necessary to attempt reposition in cases of breech presentations until that date or after. In a certain number of cases under his care he had experienced no difficulty in external version after the thirty-sixth week.

Mr. VICTOR LACK gave details of a case of breech with extended legs in which spontaneous version was observed. A primigravida was seen at the thirty-sixth week of pregnancy, a breech presentation was diagnosed, external cephalic version was attempted and failed. An X-ray photograph confirmed the diagnosis, and showed a breech with extended legs. The next day the patient was sent to the in-patient department for further attempts at version, under an anæsthetic if necessary. On examination the vertex was found to be presenting, and this again was confirmed by an X-ray photograph.

Mr. ALECK BOURNE said that he had seen accidental hæmorrhage follow an attempt to perform external version. He had failed to turn the child after strong manipulation, and the hæmorrhage which followed was attributed by him to some separation of the placenta caused by the abdominal manipulations. Examination of the placenta and membranes afterwards showed that it was normally situated. He further stated that he had noticed a great tendency towards spontaneous version after unsuccessful attempts at artificial external version. So frequently did spontaneous version follow abdominal manipulations which failed to turn the child that he always considered it worth while to try to turn however unsuccessful it might appear to be, as the disturbance of the child's lie seemed to promote spontaneous version. He considered the optimum time for artificial external version to be thirty-six weeks.

Professor MCILROY (in reply to Dr. Fairbairn) said that the diagnosis mentioned was only confirmed by X-ray in cases in which there was any doubt.

The Effect of Pregnancy on a Patient with Renal Glycosuria.

By GEORGE GRAHAM, M.D.

THE case which I am going to describe is important for two reasons: (1) because the patient has a renal glycosuria and has been under observation for thirteen years; (2) because she became pregnant and gave birth to a healthy child.

The patient first came under the observation of Sir Archibald Garrod when she was eight years old in 1911. She was brought to him because she had enuresis, both nocturnal and diurnal. Sugar was discovered in the urine during the course of a routine examination. She was admitted to St. Bartholomew's Hospital for treatment, and used to pass between 20 to 30 grm. of sugar in the urine, whatever changes were made in the diet. She was not dieted very strictly, because she used to become drowsy and pass acetone bodies in the urine whenever the carbohydrates were reduced to small amounts. After some months she was discharged from hospital, and a bad prognosis was given. Two years later she was, however, still alive, and was readmitted for examination. The urine of the other members of the family was examined for sugar; that of the father and mother did not contain any sugar, but that of the brother, aged 12 (only two in the family), contained sugar. He was, therefore, also admitted. Both children on similar diets excreted between 20 and 30 grm. in the day, whatever the diet. The blood sugar was estimated

at that time by Dr. R. L. Mackenzie Wallis, under use of his own method, and was 0'06 per cent. Various other tests were performed and are described elsewhere.

In 1915, at Sir Archibald Garrod's request, I determined the sugar tolerance of the girl after a 50 grm. dose of sugar. The fasting value was 0'1 per cent., and one hour later it was 0'18 per cent., but had fallen to 0'12 per cent. in two hours and to 0'09 per cent. in three hours. The urine in the hour before the test contained 0'8 grm., and 2'8 grm. were excreted in the first hour, 4 grm. in the second hour, and 4 grm. in the third hour. The percentage of the sugar in the urine was 4 per cent. The blood-sugar was not estimated at the end of thirty minutes, which is now our usual practice; but the shape of the blood-sugar curve shows that the sugar tolerance is normal, and as she was passing sugar before the test began, although the blood-sugar was 0'1 per cent., it was clear that the threshold of the kidney for sugar is lower than usual. The exact point at which a person begins to pass sugar in the urine is usually 0'18 per cent., or thereabouts, and if sugar appears in the urine when the blood-sugar is lower than this level, the threshold of the kidney for sugar is said to be lower than usual.

The condition of renal glycosuria was first described in 1896, and although at least 200 cases are now recorded in the literature, some expert workers do not quite accept it as a definite entity. The percentage number of healthy persons who have a renal glycosuria is not yet established, but Folin says that he expects to find at least one out of every hundred students who excrete sugar in the urine, and there are at present two students at St. Bartholomew's Hospital who do so. In one, the condition was diagnosed correctly as soon as it was discovered, but the other boy was taken away from his boarding school, sent to a day school, and dieted for three years, before he entered the hospital.

These patients do not all behave in exactly the same way, as some of them pass sugar all the day long, while others only pass sugar after meals. This probably means that those who pass sugar all the time have the threshold of the kidney for sugar set at a low level, e.g., 0'1 per cent., while those who pass sugar only after the meal have the threshold set above 0'1 per cent., and anywhere between 0'1 per cent. and 0'18 per cent. Of the thirty-four patients whom I have tested, twenty-nine belong to the class who always pass sugar, and five only to the class who pass sugar only after meals. MacLean, on the other hand, has found that the majority of his patients have passed sugar only after meals, and the minority pass sugar all the time. The discrepancy between our observations may be due to the fact that nearly all my patients had been treated for diabetes for some time before I saw them, whereas MacLean's patients have usually been sent to him after an examination for life insurance.

The amount of sugar which these patients pass also varies considerably, since some pass only 2-5 grm., while others pass 5-10, and a few 20-30 grm.

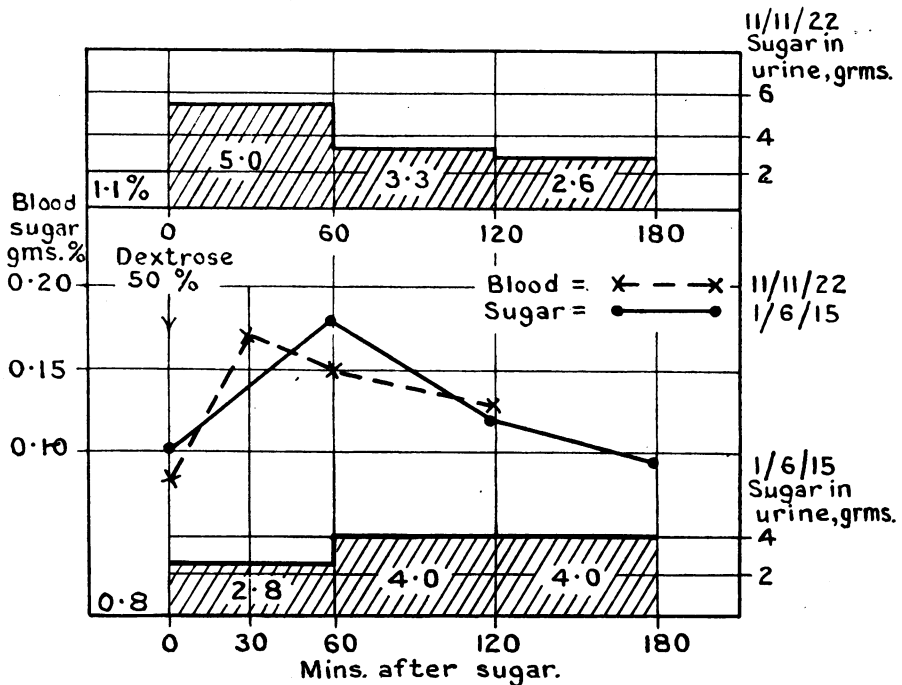
The condition of pregnancy seems to alter the threshold of the kidney, for dextrose often appears in the urine of a pregnant woman although the blood-sugar is not raised above the normal. It has indeed been suggested as a test for pregnancy, and it is alleged that it may give a positive answer as early as the second or third month.

When the patient became pregnant it therefore became an interesting problem to see what effect the condition would have on her. She first went to see Dr. Mary Blair, who found that she had a contracted pelvis and that there was a great deal of sugar in the urine. As she usually passes urine containing 4 per cent. of sugar the condition did appear alarming. When I heard of it

from Dr. Blair I asked Professor Fraser to take her into St. Bartholomew's Hospital so that I could repeat the sugar tolerance curve when she was six months' pregnant. She seemed quite well and had been eating an ordinary diet, including sweets, ever since 1915, although she had been told that she must not eat sweets.

The fasting value of the blood-sugar was 0.08 per cent. : 30 minutes after a dose of 50 grm. it had risen to 0.17 per cent.; had begun to fall after 60 minutes to 0.15 per cent., and in 120 minutes to 0.113 per cent.

The actual shape of the curve differs a little from that of 1915, as the 30-minute point was then omitted, and the 60-minute point was 0.18 per cent. instead of 0.15 per cent. The curve obtained in 1922 is perfectly normal and justifies the deduction made in 1915. The sugar excretion was a little different,



as 5 grm. were excreted in the first hour, 3.3 grm. in the second hour, and 2.6 grm. in the third hour.

She came into hospital under Dr. Barris for the confinement, but I did not do another sugar tolerance curve. The blood-sugar at 11 a.m. was 0.12 per cent., and the total sugar excreted in the twenty-four hours was 36 grm., which is just a trifle higher than the 30 grm. which was the average amount which she excreted in 1913.

The delivery was quite normal and there were no complications of any kind. The urine of the babe was examined on the third day. It was thick with a deposit of urates, and at first I thought that it contained sugar, as the Benedict's solution was reduced slightly, but on filtering away the urates there was no reduction.

It is believed that patients with renal glycosuria have passed sugar since birth, and as the condition occurs in families it was hoped that we might have the opportunity of proving the point. The youngest subject whom I have examined with a renal glycosuria was a child of 11 months in whom sugar had accidentally been discovered. The child has another rare condition—erythro-cedema—and the sugar may be present as a complication of that disease.

The woman is now very well and still passes much sugar.

The effect of a pregnancy on this patient with renal glycosuria is negligible, and if the diagnosis of renal glycosuria is properly established, a pregnancy is unlikely to have any evil effect.

I know of two other cases: one, described by Riesman, in which the patient had three pregnancies without any ill effect; and the other, the sister of a patient of mine, who has had two pregnancies, during one of which the sugar was discovered. She suffered much from the dieting which she received, but the child survived. She no longer diets, and is very well. Neither of the children has a renal glycosuria.

REFERENCE.

Graham. *Quarterly Journal of Medicine*, Oxford, 1916, x, p. 295; 1923, xvi, p. 286 (with full bibliography.)

A Case of Diabetes Mellitus complicated by Pregnancy, Treated with Insulin.

By GEORGE GRAHAM, M.D.

THE outlook of a patient with true diabetes mellitus complicating pregnancy has always been considered as being very unfavourable. Whitridge Williams reports the results of sixty-six cases; 27 per cent. of the women either died at the time of labour or within two weeks of it, and 23 per cent. in the next two years. Of the children, 12 per cent. were born dead as the result of abortion, and of those which came to term, 33 per cent. were born dead.

It is impossible to say how many of the women really had true diabetes mellitus in a severe form, as the data are lacking, but it is fairly certain that the outlook of the diabetic patient who becomes pregnant is a bad one.

The introduction of insulin in the treatment of diabetes has altered the prospects of the diabetic patient, and it is important to consider how much the outlook of the pregnant woman has been altered.

I have had the opportunity of watching one woman who had been treated with insulin before conception and has given birth to a healthy child, and I thought it might be of interest to report the case, although it is only an isolated one.

The patient, aged 34, had already had one child. She was quite well until she had a sudden onset of thirst, and became very irritable, in October, 1922. The sugar was discovered by Dr. Philips about fourteen days after the onset of the symptoms. She was dieted by removal of the carbohydrates of the diet, but not very drastically, and she also did not adhere closely to the prescribed diet. I first saw her with Dr. Philips in June, 1923, as she had become very thin and weak. She then looked ill, and had obviously lost a great deal of weight. She was very constipated, and the abdomen was moving rather deeply with respiration, as though she was approaching coma. The knee-jerks were active, and there was no other sign of disease. The urine contained a great deal of sugar,