Trans Obs Soc (LONDON) 1906 V-48

THREE CASES OF GLYCOSURIA OF PREGNANCY.

By Dr. W. H. B. Brook.

In June, 1904, I attended a lady (*a*) in her first confinement, which with the puerperium was in every respect quite natural. The urine, which was examined on several occasions, was quite free from any abnormality.

During the summer of 1905, the patient being in the third month of her second pregnancy, the urine was again examined, and was found to be normal in every respect. At the end of the fifth month she noticed that urine was being passed more frequently and in greater quantity than usual. On examination the specific gravity was found to be 1036, and there was present 2½ per cent. of glucose with a small amount of lactose (Clinical Research Association).

A moderate diabetic diet was ordered, and salicylate of soda was given in combination with bismuth, together with an occasional dose of Pil. hydrarg.

After a week of this treatment the sugar was somewhat diminished in quantity, but the specific gravity was still 1030, and as the reaction was intensely acid magnesium carbonate and potassium bicarbonate were added to the mixture and a strict diet ordered. At the same time codeia gr. ½ was given *ter die*.

The sugar then for a short time was reduced to a mere trace and the specific gravity to 1023.

Bearing in mind, however, the extremely serious view that my teacher the late Dr. Matthews Duncan used to take of glycosuria in pregnancy, a view which he brought strongly before this (the Obstetrical) Society in 1882, it was considered advisable to obtain the opinion of Dr. Champneys and Sir Thomas Barlow, who agreed with my partner (Mr. Charles Brook) and myself that in the light of past experience the presence of sugar in the urine justified our care about the case, which would be best

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brought to a successful termination by continuing the anti-diabetic treatment and by taking every precaution to avoid collapse and heart failure at the time of delivery and for some time subsequent.

During the remainder of the pregnancy the urine was repeatedly examined. On only one occasion was sugar entirely absent; it fluctuated in amount, slightly rising a fortnight before delivery.

During the whole of this time the diet was carefully adhered to, and the medicinal treatment continued, except that aspirin was for a time substituted for salicylate of soda.

The patient had an uneventful delivery, and convalescence, except for some slight trouble with varicose veins, was uninterrupted. The infant was not nursed. Six weeks after delivery there was not the slightest trace of sugar, although ordinary carbohydrate food was taken.

By a curious coincidence I had at the same time under my care two other instances of the glycosuria of pregnancy.

The first (*b*) occurred in a primipara, aged 27, who had consulted me on several occasions during the past three years, and whose urine had not previously contained sugar.

On examining the urine at the end of the sixth month I found 10 grains of sugar to the ounce, with a specific gravity of 1033.

The other (*c*) was a iii-para, aged 38, whom I had attended in her previous confinement, and who had then no sugar in the urine; now at the sixth month I found 12 grains to the ounce and a specific gravity of 1035.

Both these patients were put on an anti-diabetic diet. The only medicine given was aspirin (gr. x *ter die*) a drug that I have found of considerable value in diabetes, with an occasional dose of Pil. hydrarg.

In both these cases the sugar was diminished by treatment and at times disappeared, but reappeared at intervals, and was on one or two occasions in fairly large quantity.

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Both these patients went to full time, and had uneventful confinements, both nursed their children, and in both there was no return of the sugar.

I have ventured to bring these three cases before your notice *first*, because I can find very little written on the subject of the glycosuria of pregnancy (in the article on "Diabetes" in Allbutt's 'System of Medicine' Professor Saundby mentions these cases as "forming a class to themselves, and whose explanation remains obscure"); and *secondly*, because of the extremely serious view taken of this condition by Dr. Matthews Duncan, the perusal of whose paper caused me considerable apprehension as to how my three patients would pass through their puerperium.

Fortunately, they did well; this may have been due to the fact that the amount of sugar (10 to 12 per cent.) was not very large, and that the condition was discovered in time for steps to be taken to remedy it.

In the discussion which took place after the reading of Dr. Matthews Duncan's paper the question was asked as to whether any rules of treatment could be formulated, but it was not considered that any special rules could be laid down at that time.

Having regard to these three cases, I am inclined to think that careful dieting and the administration of aspirin or salicylate of soda are of the greatest benefit, with an occasional liver pill or Pil. hydrarg.

At the time of delivery I gave a minimum of chloroform, and left with the nurse a hypodermic syringe charged with strychnine to be used if any sign of collapse occurred.

I have to thank Dr. Champneys for the interest he has taken in these cases and Dr. A. E. Garrod and Dr. Hartley of St. Bartholomew's for the trouble they have taken in the examination of the urines.

Dr. CHAMPNEYS said that the Society was indebted to Dr. Brook for recording these cases. Diabetes in pregnancy was different from the slight glycosuria which had been called

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"resorption diabetes" and was due to reabsorption of sugar of milk from the breasts. Again, diabetes in pregnancy sometimes ran a comparatively harmless course and sometimes was rapidly fatal. Having been associated with Dr. Matthews Duncan in the first of his recorded cases, in which a patient apparently in good health became rapidly ill and died three days after delivery, he had a vivid picture of the terror of which this affection was capable. The difficulty really lay in the prognosis, and he knew of no satisfactory method of formulating one at present. It was only by recording cases that a prognosis might eventually be arrived at.

Dr. Eden said that he should like to know from Dr. Brook whether there were any other symptoms of diabetes in his cases besides glycosuria—such symptoms, for instance, as polyuria, thirst, wasting, etc. These points were not referred to in Dr. Brook's account of his cases. There could be no doubt that the cases recorded by Matthews Duncan to which the author had referred were true cases of diabetes and probably belonged to quite a different class from cases of simple glycosuria. A number of observations on the glycosuria of pregnancy had been recently published, and some observers went so far as to say that sugar could be found in small amounts in the urine of 5 to 6 per cent. of all pregnant women. Most writers were of opinion that the condition was not serious or important when existing alone. An ingenious German observer had produced glycosuria experimentally in rabbits by sewing up pieces of human placenta in the peritoneal cavity, which led him to the conclusion that the glycosuria of pregnancy might be due to the absorption of toxic substances from the placental tissues—*i. e.* that it was due to toxæmia. But Dr. Brook's observations upon the effect of diet appeared to run counter to this conclusion.

Dr. Fairbairn said he had been much interested in Dr. Brook's cases, as he had recently seen one of a similar nature under the care of Dr. Hedley, which he hoped would turn out as well as those described. The patient is a woman six and a half months pregnant who has slight glycosuria, from 40 to 300 gr. being passed in the twenty-four hours. The sugar present was proved to be glucose and not lactose by the phenyl-hydrazine and fermentation tests and by the polarimeter. The amount of urine is not increased, the largest measurement being 55 oz., and the specific gravity is only slightly raised. As the result of a modified diabetic diet the sugar has diminished, but has never been absent from the night specimen, though occasionally the day one is free. Dr. Fairbairn entirely agreed with what Dr. Eden had said as to this slight glycosuria in pregnant women being quite distinct from a true diabetes. The small amount of glucose passed, the absence of the other symptoms of diabetes, and the ultimate result put them in an entirely different category.

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From the point of view of treatment, prognosis, and life insurance, it was most important that the nature of such cases should be recognised, and this could only be accomplished by careful recording, such as Dr. Brook had done.

Dr. Griffith referred to a case of diabetes which he had had the opportunity of watching with Dr. Pavy and others for some years, who needed strict diet and continuous administration of codeia to keep her glycosuria under reasonable control, any relaxation of diet leading to a marked increase, with depreciation of health. She became pregnant about two years ago, and passed through her pregnancy and labour without any evidence of danger, and her health appeared to be, if anything, improved. This is a case intermediate between the cases of temporary glycosuria reported by Dr. Brook and the very serious cases reported by Dr. Matthews Duncan.

In reply, Dr. Brook stated that the daily quantity of urine in all three cases was at first increased to 60–70 oz., but under treatment soon fell. He was inclined to look upon the sugar in the urine as due to both the factors mentioned by Dr. Eden; it was undoubtedly chiefly affected by diet, but this alone would not explain the occasional return of the sugar whilst the diet and treatment were being strictly followed, a return which might be explained as due to the second, the placental, factor. He was glad to know that others had met with similar cases.

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