definitely contraindicated. Curettage is necessary for diagnosis, and removal of thickened endometrium sometimes gives relief. Proluton (corpus luteum hormone) is now giving encouraging results. It is said that resection of the cystic ovary may lead to cystic formation in the other; but, nevertheless, this operation is often followed by definite relief, and should be performed before hysterectomy is resorted to in young subjects. Patients over 40 present no difficulty, as they are most successfully treated by the intrauterine application of radium. It is well to warn the patient of the possibility of irregular haemorrhage up to six or eight weeks after the treatment.

Epimenorrhoea: Sterility

In epimenorrhoea the cycle remains regular, but it is reduced to twenty-one or fourteen days. Ovulation still occurs normally, but there is a speeding up of the cycle. This condition not infrequently follows parturition, and as it is known that the anterior lobe of the pituitary gland hypertrophies during pregnancy, Shaw suggests that the acceleration of the ovarian cycle may be explained by assuming that the activity of the anterior lobe persists, with the result that follicles ripen and ovulate more frequently. The treatment is unsatisfactory. In patients over 40, after a preliminary curettage, radium is again most satisfactory. In younger patients the treatment resolves itself into rest at the periods, curettage, and full doses of iron to combat the anaemia, if present, with hysterectomy as a last resource.

By the discovery that menstruation may occur without ovulation, a new factor has arisen as to the possible cause of sterility. It is now considered that an essential part of the investigation in a sterile woman is examination of the endometrium one or two days before the period is due. Secretory changes denote a recent corpus luteum, and therefore ovulation; absence of such changes denotes a non-ovulating woman.

Other Applications

Interest in the value of hormone therapy was unquestionably stimulated by the publication of Kaufmann's results of the administration of ovarian hormones in a castrated woman. He was able to produce menstruation by the use of progynon (oestrin), in doses far in excess of any that had been previously employed, over a period corresponding to the follicular phase in the cycle, followed by the administration of proluton (progestin) during the period normally governed by the corpus luteum. As previously stated, he was also able to demonstrate the normal cyclical changes in the endometrium. Primary amenorrhoea is frequently accompanied by an infantile uterus, conical cervix, and a narrow short vagina. It is known that at puberty the uterus develops steadily under the prolonged and constant influence of oestrin. By the administration of large doses of oestrin over a period of three to six months Kaufmann has succeeded in stimulating an infantile uterus to grow to an advanced stage of development, although actual menstruation has not yet been produced.

Kaufmann next turned his attention to the treatment of secondary amenorrhoea. In these cases examination will usually reveal a perfectly normal uterus and ovaries, and often there is a history of a normal menstrual cycle for some years succeeding puberty. He again administers large doses of progynon at intervals of three days over a period representing the first half of the cycle, then, after an interval of three days, during which ovulation and the formation of the corpus luteum is taking place in a normally menstruating woman, he administers proluton on five consecutive days. He found that on the second day after the last proluton injection menstruation

begins. This treatment is carried out for three consecutive months. Whether or not this apparent return to normal which occurred in his series of cases will be of a permanent nature after withdrawal of the hormones has not been firmly established.

Scanty menstruation with dysmenorrhoea is undoubtedly benefited by the administration of progynon alone given intramuscularly during the first half of the interval, and also by the mouth. There is definite increase in the menstrual flow, and alleviation of the dysmenorrhoea. Menopausal symptoms are successfully dealt with by progynon, given by mouth in mild cases, or by injection once or twice a week if the symptoms are distressing.

Conclusion

As a result of the brilliant investigations carried out in Britain, America, and the Continent, opinion as to the source and functions of the ovarian hormones is firmly established, and attention is now directed towards elucidating the problems of the anterior and posterior lobes of the pituitary gland. Until the results of these researches are forthcoming, clinicians should refrain from the indiscriminate use of hormones. Hormone stimulation may be associated with epithelial activity, but it is comforting to learn that in laboratory experiments malignant formation as a result of such stimulation appears to be confined to immature animals.

THE FALLACY OF THE SUGAR TOLERANCE TEST IN THE DIAGNOSIS OF DIABETES MELLITUS

BY

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The methods adopted in different countries to diagnose diabetes mellitus are not identical. In England the majority of practitioners ask the consultant to make the diagnosis at a single consultation, whilst in the U.S.A., Germany, and several other countries they expect their patients to be admitted to a clinic for the investigations which will permit a definite diagnosis. This may be the explanation of the popularity of the sugar tolerance test in this country. There is much to be said in its favour, because if it be carried out after a fast of fourteen hours on an individual who has had a generous diet, rich in carbohydrates, for the preceding week, a normal curve excludes diabetes mellitus. Until recently I was of the opinion that the sugar content of the blood rising above 0.25 per cent., and remaining high for two hours, indicated diabetes mellitus. The five cases which I record prove that a so-called positive sugar tolerance test does not necessarily mean that the patient is suffering from diabetes mellitus.

I have reason to believe that hyperglycaemia following the ingestion of 50 grams of glucose in individuals who possess metabolisms which allow them to utilize large quantities of starch has been described previously, but I have not succeeded in finding the paper upon the subject, which most certainly has not received the attention it merits. It might be argued that because it has not received attention it must be rare and only of academic interest, but a condition cannot be recognized by those unacquainted with its existence. It would not be surprising if among the patients of those physicians who treat diabetes by restricted diet a percentage of the most successful cases which have never complained of thirst or polyuria proved to belong to the category of those recorded here.

It is difficult to see how the peculiarity would have been recognized before the period of high carbohydrate diets in diabetes mellitus, because the patients would have been given restricted diets—would have suffered only from the ills arising from too much fat and protein. The first case which came my way astonished me so greatly that I asked one of the most celebrated biochemists to meet me over the case, hoping to learn some physiological explanation of the phenomenon—which, alas, was not vouchsafed.

Case I

A man, aged 56, was sent to me because sugar had been found in his urine. Eleven years previously he had had pancreatitis. More recently he had developed thrombo-angiitis obliterans in his left leg. He had not modified his diet and was submitted to a sugar tolerance test, but, through some misunderstanding, had not fasted for fourteen hours. The sugar content of the blood at the beginning was 0.17 per cent., and at half-hour intervals following 50 grams of dextrose by the mouth was 0.27 per cent., 0.32 per cent., 0.3 per cent., 0.24 per cent., 0.2 per cent., and 0.2 per cent.; 400 c.cm. of urine were passed during the test, containing 1.5 per cent. of sugar.

The patient was told that in all probability he was suffering from diabetes mellitus, and was advised to come into a nursing home for adjustment of diet and insulin. He was placed upon a diet consisting of carbohydrate 250 grams, protein 90 grams, and fat 100 grams, and the sugar in his blood estimated at various times. The concentration did not rise above 0.18 per cent., and therefore insulin was not required. He was subjected to a test consisting of a gradual increase of carbohydrate in the diet with estimation of sugar excreted in the urine. A somewhat unusual observation was recorded in that the amount of sugar excreted was greater when the diet consisted of only 50 grams "G" than when it was 300 grams "G." The sugar tolerance test was repeated, and proved to be of an identical form, but started 0.04 per cent. lower. This patient during the last three years has continued to eat and drink whatever he likes and has not developed diabetes mellitus.

Case II

The second case recognized by me was a man, aged 41, in whose urine sugar had been found. The patient did not complain of symptoms of diabetes mellitus, but of languor and depression. It is true that he stated that his sight had altered recently, but that may have been due to the hyoscine in the medicine he had been taking. His diet had not been modified, and after fourteen hours' fast he was submitted to a sugar tolerance test, and the concentration in the blood at half-hour intervals was 0.11 per cent., 0.19 per cent., 0.25 per cent., 0.27 per cent., 0.18 per cent., 0.13 per cent., and 0.12 per cent. He was able to eat 300 grams of carbohydrate in the form of starch daily without the sugar content of his blood rising above 0.18 per cent.

Further observations were made on this patient. It is generally recognized that the pancreas of a diabetic acts better after rest than after having been fully exercised, whilst that of a normal healthy person acts better after having been exercised than after rest. Sugar was excluded from his diet whilst he was in hospital. The curve representing the concentration of sugar in the blood following the administration of 50 grams of glucose by the mouth showed that the power of restoring sugar was better when the pancreas had been exercised than when it had been rested. Therefore it was concluded that this patient might eat ordinary food. This he has done, and has not developed any evidence of diabetes mellitus.

Case III

A woman, aged about 50, sought my advice on March 26th, 1934, and gave a history that nine years previously she had had thrombosis in a vein of her leg. Sugar had been found in her urine, and a sugar tolerance test performed, which had led to her being told that she had diabetes mellitus. She objected to having insulin, and was given a restricted diet. During the last two years she had lost weight slowly and became fatigued too easily.

The patient appeared to be enjoying good health, and, since I have doubts whether true diabetes mellitus can be arrested by a restricted diet, I asked her who had diagnosed diabetes mellitus nine years ago. She replied, "You, Sir, at the London Hospital." Upon request she consented to come into hospital again, where it was found that the sugar tolerance test with 50 grams of glucose by the mouth gave the following concentrations of sugar in the blood: fasting, 0.15 per cent., 0.18 per cent., 0.18 per cent., 0.28 per cent., 0.22 per cent., 0.28 per cent., 0.28 per cent., and 0.2 per cent. This test was repeated with practically the same result. The effect of placing the patient on a very restricted diet for several days before carrying out the test was trivial, a very similar curve resulting.

She was placed upon a diet of carbohydrate 50 grams, protein 36 grams, fat 39 grams for seven days, and during that period the sugar content of her blood varied from 0.065 per cent. to 0.22 per cent. The urine contained a trace of sugar, but too little to estimate by the usual methods. A gradual increase in the carbohydrates was made, and when the patient was on carbohydrate 249 grams, protein 81 grams, and fat 62 grams the sugar content of the blood rose as high as 0.22 per cent. and fell as low as 0.07 per cent. The sugar content of the urine, which was of normal volume, did not rise above 0.3 per cent.

The patient was advised to eat and drink whatever she liked and to report at intervals of six months. On the three occasions upon which she has been re-examined the tests have shown that there has been no deterioration in her metabolism.

Case IV

The fourth case was a man, aged 36, who complained of a dry mouth, but not of thirst. Sugar was found in the urine. A sugar tolerance test was performed at the London Hospital. The sugar content of the blood after a fast was 0.128 per cent., rising to 0.236 per cent. half an hour after the ingestion of 50 grams of dextrose, and to 0.27 per cent. after an interval of two hours. The patient was admitted to hospital and given a diet of carbohydrate 253 grams, protein 92 grams, and fat 94 grams. The sugar content of the blood at 6 a.m. was 0.12 per cent., at 9 a.m. 0.18 per cent., at midday 0.09 per cent., at 3 p.m. 0.095 per cent., at 6 p.m. 0.08 per cent., and at 8 p.m. 0.166 per cent.

The patient was advised to eat and drink whatever he liked, and to present himself for re-examination in a year's time. He was then submitted to two sugar tolerance tests, one whilst on a diet of carbohydrate 302 grams, protein 101 grams, and fat 101 grams, resulting in the following concentrations of sugar in the blood at half-hour intervals: 0.11 per cent., 0.153 per cent., 0.18 per cent., 0.15 per cent., 0.15 per cent., and 0.14 per cent., and again after five days' diet consisting of carbohydrate 40 grams, protein 49 grams, and fat 50 grams; this gave 0.18 per cent. fasting, then 0.2 per cent., 0.28 per cent., 0.23 per cent., 0.21 per cent., 0.2 per cent., and 0.15 per cent. Reducing this to the same starting level it would read 0.11 per cent., 0.13 per cent., 0.21 per cent., 0.16 per cent., 0.14 per cent., 0.13 per cent., and 0.075 per cent. No conclusion can be based upon two curves so closely similar.

The fifth case was not recognized by me until ten years after the first consultation, but the patient lived in South Africa and came to England every five years.

Case V

On June 5th, 1925, a man, aged 62, gave me the following history. Sugar had been found in his urine in 1910, and he had been placed upon a strict diet. The local doctor in South Africa did not think that he was a case of orthoglycaemic glycosuria because years previously he had insured his life and then sugar had not been found in the urine.

In 1914 the diet was modified according to the teaching of F. M. Allen. In 1923 the son-in-law of the patient, who is a doctor of medicine, took the patient to a clinical laboratory, where a sugar tolerance test was carried out, which confirmed the diagnosis of diabetes mellitus. A restricted diet led to the patient losing weight, and therefore insulin was prescribed. In June, 1925, he was taking ten units of insulin twice daily and a diet of carbohydrate 81 grams,

protein 101 grams, and fat 158 grams. I increased the carbohydrate by ten grams. The next consultation was May, 1930, when a further increase in diet was prescribed.

At the next consultation, on June 24th, 1935, I realized that this patient had at no time had symptoms of diabetes mellitus, and my notes told me that the diagnosis rested upon a sugar tolerance test alone. I advised him to cease taking insulin and to eat and drink whatever he liked. The sugar content of his blood an hour after a breakfast consisting of eggs, bacon, tea, a roll, toast, butter, and marmalade was 0.14 per cent. A single observation the day after the cessation of insulin could prove nothing, because a rested pancreas will function well for a short time after it has been made to carry a full load, even if its capacity is only a fraction of the normal. Repetition of the observation, under identical conditions, after a month's cessation of insulin, and on ordinary food, showed that the sugar content of the blood was 0.14 per cent. In order to find out whether this patient really belonged to the same category as the others mentioned above, he was submitted to a sugar tolerance test. The concentrations of sugar in the blood at half-hour intervals following the ingestion of 50 grams of glucose were, fasting, 0.14 per cent., 0.15 per cent., 0.27 per cent., 0.33 per cent., 0.21 per cent., 0.16 per cent., and 0.11 per cent. The patient was advised to eat and drink whatever he liked, but to avoid grapes and unfermented grape juice, and to report every six weeks until he returned to South Africa in October.

Commentary

These five cases are of interest in so far that they prove that there is a condition which may easily be mistaken for diabetes mellitus, a condition which may have a material effect upon the correct treatment of diabetes mellitus.

In England the majority of physicians still advise restricted diet upon the diagnosis of diabetes mellitus, although perhaps there is a gradual veering round to the view expressed in a few books that insulin should be ordered immediately upon the definite diagnosis of diabetes mellitus, provided the sugar concentration of the blood rises above 0.15 per cent. at any time when the patient is on a diet rich in carbohydrate and supplying about 30 calories per kilogram body weight per diem. The majority advise a restricted diet because a number of patients flourish upon that treatment, but what percentage of those cases will prove to be of the type mentioned above still remains to be discovered. Should a large percentage prove to be cases of this type then probably the fashion will change and all cases of true diabetes mellitus will straightway receive a liberal diet and adequate doses of insulin, and then remissions will no longer be considered events of great rarity.

The 1935 edition of the *Register of Members of the Chartered Society of Massage and Medical Gymnastics* reveals a steady growth in numbers, there being included the names and addresses of over 9,500 masseuses and masseurs throughout the world. By means of the place index it is easy to find out who are practising in any neighbourhood, and additional qualifications, such as for medical electricity, light and electrotherapy, and medical hydrology, are recorded. Members of the Chartered Society undertake no cases except under the direction of a medical practitioner; they do not advertise except in recognized medical and nursing papers; and they do not sell goods to patients in a professional capacity nor accept secret commissions on the sale of goods. By such restrictions the Chartered Society has built up a high standard of professional honour, and by its training and careful examinations has ensured that its members shall be fully qualified to carry on any treatment which may be ordered. The *Register* is supplied free on application to any medical practitioner. The address of the Chartered Society's offices is Tavistock House (North), Tavistock Square, W.C.1.

STENOSING TENDOVAGINITIS AT THE RADIAL STYLOID

A BRIEF REVIEW OF SOME OF THE LITERATURE WITH REPORT OF A CASE

BY

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In 1895 de Quervain, working under Kocher, described a condition affecting the tendon sheath of the abductor pollicis longus and extensor pollicis brevis, with very definite symptoms and signs, and responding readily to appropriate treatment. Kocher named it "stenosing fibrous tendovaginitis" at the radial styloid, although Finkelstein has since found the condition in other of the extensor tendons at the wrist. The lesion consists in a fibrosis of the common sheath as it lies in the groove at the lower end of the lateral surface of the radius, covered over by the most lateral portion of the dorsal carpal ligament. In this superficial situation the tendons are presumably exposed to trauma and increased friction.

Since de Quervain's recognition numerous articles have appeared from time to time in foreign journals describing cases, but the only references in British literature to be found through the ordinary sources of research are Mercer¹ and a mention of it in Jones and Lovett's *Orthopaedic Surgery*.

I have recently had a case under treatment, which prompted me to study this interesting condition. Because it appears to have been strangely neglected by British writers; because I can find no mention of it in the surgical textbooks which I have consulted (apart from Mercer¹ and Jones and Lovett); and because it appears to be such a painful and disabling condition, but one that gives apparently absolute (and, in some cases, dramatic) cures with appropriate treatment—for these reasons I venture to publish this short summary.

Eschle² gave a résumé to 1924, reporting on 110 cases, and adding nineteen of his own which were cured by operation.

Wisterstein³ in 1927 reviewed all accessible cases previously reported, adding fourteen of his own, making a grand total of 154. From his review of the literature he found that the condition occurred most frequently in women past middle age, the ratio of women to men being 10 to 1; average age 55, youngest 15; duration of disease two weeks to one year.

Schneider⁴ states that although he has treated between twenty-five and thirty cases, he has been able to collect the records of only fifteen of these, all of which were treated conservatively, giving complete cures in 70 per cent. This surpasses the results of conservative treatment in the hands of any previous observers. Most of his cases were, however, in the comparatively early acute stage. He applied plaster casts to the wrist and thumb, the latter being in the fully abducted and extended position. Treatment lasted for an average of four to six weeks.

More recently Finkelstein⁵ reports twenty-four cases, all of which were operated upon, conservative treatment having failed. He asserts that conservative treatment is indicated in the acute stages if seen early, but that if relief is not obtained in four weeks operation is required.

Aetiology

Occurring most frequently in the working classes, stenosing tendovaginitis is to be regarded as being traumatic in origin: there was an acute traumatic onset in six of Finkelstein's cases. Prolonged and excessive use of the thumb seems to be the main factor, as the cases have all occurred in people who habitually use