

that little remains to be said concerning it. There is, however, one fact in connexion with cases of this kind which is, I believe, undeniable: the longer the symptoms have persisted the more uncertain is the effect of operative treatment, even if an obvious cause for their existence be discovered and removed. Operations, on the other hand, performed within a reasonable time of the onset of the symptoms are, so far as my experience goes, always immediately successful. In other words, those cases which come into the hands of the surgeon early afford immediately satisfactory results; in those, on the contrary, who have for years been subjected to tedious and futile medical treatment, the functions of the parts concerned become so impaired, and the mood of the patients so depressed and pessimistic, that the removal of the original cause of the trouble is not followed directly by the complete relief expected, although in course of time the relief, if not complete, is at all events sufficient to give the patient no cause for regretting the performance of the operation. The earliest period, so far as I have seen, at which any true estimate of the value of the operation can be made in these deferred cases is at least one year. I shall not be surprised to hear that considerable improvement yet ensues in the case described above.

[Note.—Since the above was written, Sir William Bennett's hopes have been partially realized.—E. P.]

NOTE ON THE VALUE OF ROUX'S OPERATION FOR THE RADICAL CURE OF FEMORAL HERNIA.

By J. CRAWFORD RENTON, M.D.,

Surgeon and Lecturer on Clinical Surgery, Western Infirmary, Glasgow.

SINCE Dr. John Guthrie drew my attention to the operation which he had seen Roux perform in Lausanne for the radical cure of femoral hernia, I have adopted it in ten cases, seven of which I referred to in the BRITISH MEDICAL JOURNAL for September 13th. Having been thoroughly satisfied with the method, I wish to draw particular attention to it. It consists:

1. In making an incision over the crural canal.
2. In isolating the sac, putting a catgut ligature round its neck and cutting it off.

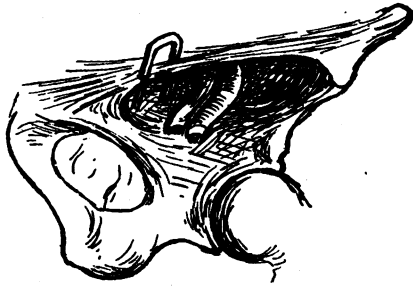


Fig. 1.—Staple passed through Poupart's ligament.

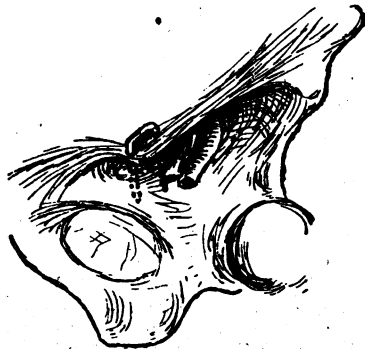


Fig. 2.—Staple fastened into bone.

3. A metal staple is passed obliquely through Poupart's ligament over the crural canal, taking care to avoid the femoral vein, and then it is gently hammered into the pubis.

4. Stitching the skin incision.

Care must be taken not to put the staple in too tightly, which would injure Poupart's ligament, still it must be sufficiently secured to prevent any recurrence of the hernia. The staple remains permanently *in situ*; it causes no irritation, and does not injure the bone. The operation can be easily and quickly performed by any one who follows the above steps. Roux has operated on over 60 cases without the retention of the staple giving rise to the least trouble, or recurrence of hernia.

Fig. 1 shows the staple passed through Poupart's ligament. In Fig. 2 the staple is fastened into the bone.

ON THE TREATMENT OF GLYCOSURIA AND DIABETES MELLITUS WITH ASPIRIN.

By R. T. WILLIAMSON, M.D. LOND., F.R.C.P.,

Senior Physician to the Ancoats Hospital; Assistant Lecturer on Medicine, Owens College; and Assistant Physician, Royal Infirmary, Manchester.

ASPIRIN is a salicylate compound (acetyl-salicylic acid), which is stated to be decomposed only when it reaches the small intestine; and it is said to produce none of the toxic symptoms that are sometimes caused by sodium salicylate. For several theoretical reasons it appeared to me to be worthy of trial in the treatment of glycosuria and diabetes mellitus. About three years ago I first gave it in a case of diabetes, but the dose was small and the result indefinite. More recently I have given it in larger doses and with definite results in certain cases.

I have prescribed aspirin altogether in 40 cases of chronic glycosuria and diabetes mellitus. In 11 of these cases I was able to observe the sugar excretion continuously, for a period which was sufficiently long to enable a definite opinion to be formed as to the action of the drug. In the other 29 cases the patients were not treated in hospital, and the sugar excretion could not be carefully watched; hence no very definite conclusions could be drawn as to the value of the drug in these cases, though improvement was often reported.

In the 11 cases, which were carefully observed for a long period, the results were as follows: (1) In 4 very severe cases of diabetes the drug did not produce any decided effect on the sugar excretion. (2) In 3 cases of chronic glycosuria the sugar excretion ceased when aspirin was given, the diet being kept unchanged; but though I believe the arrest of the glycosuria was due to the drug, I am prepared to admit that objections may be raised to this conclusion. (3) In 4 cases of diabetes mellitus of the milder form the sugar excretion appeared to be clearly diminished by the aspirin. The 4 cases last mentioned were patients in the Ancoats Hospital for long periods, and the sugar excretion was carefully estimated daily. Brief notes of these 4 cases will be here recorded.

Many cases of diabetes and glycosuria are unsuitable for observations with respect to the action of drugs; some on account of the presence of complications, such as phthisis; some because the disease is of the very severe and acute form; others because the glycosuria is intermittent. The four cases here recorded were free from these objections. The first case recorded was particularly suitable for observations with respect to the action of drugs. The disease was of ten years' duration; it was not progressive; the sugar excretion eight years ago was practically the same as it was just before the aspirin was prescribed (that is, 24 to 25 gr. to the ounce). I have had the opportunity of watching the sugar excretion for many years in this case; apart from the action of drugs or other treatment it has remained practically stationary.

In all four cases recorded the patient was well nourished; the urine gave no reaction with perchloride of iron, and the disease was not of the severe form.

CASE 1. *Mild Form of Diabetes*.—The patient, a woman, aged 65, was admitted into the hospital on May 1st, 1901. She was kept on ordinary hospital diet, including bread and milk in the usual quantities; but sugar, potatoes, and rice pudding were not given, as these had not been taken for years. After the patient had been in the hospital three days the sugar estimations were commenced, and the patient was given no drug except a little diluted peppermint water. The average daily excre-

tion of sugar during this period was 2,132 gr. daily. Aspirin was then given on May 8th, and increased in amount up to 15 gr. six times a day, with the result that the sugar excretion gradually diminished until the daily average (based on the figures for four days—May 24th to 27th) was 565 gr. Then the aspirin was discontinued, and a few minims of peppermint water given three times a day. At once the sugar excretion increased, and rose higher day by day, until at the end of seven days it was 1,672 gr. daily. The aspirin was then commenced again (15 gr. six times a day), with the result that the sugar excretion rapidly sank to 650 gr. daily. (See table.)

| Date. | Daily Amount of Urine, in Ounces. | Specific Gravity. | Daily Excretion of Sugar in Grains. | Treatment. |
|------------|-----------------------------------|-------------------|-------------------------------------|--|
| May 1 ... | * | * | * | From May 1st to 8th peppermint water only. |
| " 6 ... | 86 | 1033 | 2,236 | |
| " 7 ... | 80 | 1032 | 2,000 | |
| " 8 ... | 80 | 1035 | 2,160 | |
| May 17 ... | 50 | 1031 | 800 | Aspirin commenced May 8th, and increased gradually up to 15 gr. six times a day. |
| " 24 ... | 60 | 1026 | 540 | |
| " 25 ... | 58 | 1027 | 638 | |
| " 26 ... | 58 | 1027 | 696 | |
| " 27 ... | 64 | 1018 | 448 | |
| May 28 ... | 60 | 1025 | 600 | Aspirin discontinued and only peppermint water given. |
| " 29 ... | 80 | 1024 | 1,040 | |
| " 30 ... | | | | |
| " 31 ... | 76 | 1025 | 1,064 | |
| June 1 ... | 78 | 1027 | 1,092 | |
| " 2 ... | 72 | 1029 | 1,252 | Aspirin given again, 15 gr. six times a day. |
| " 3 ... | 70 | 1031 | 1,540 | |
| " 4 ... | 76 | 1030 | 1,672 | |
| June 5 ... | 74 | 1028 | 1,406 | |
| " 6 ... | 68 | 1028 | 952 | |
| " 7 ... | 60 | 1025 | 540 | |
| " 12 ... | 50 | 1027 | 650 | |
| " 17 ... | 56 | 1027 | 616 | |

The sugar excretion was estimated every day, but in order to save space at the parts marked *** the figures were omitted in this table and all the other tables in this article.

| Date. | Daily Amount of Urine in Ounces. | Specific Gravity. | Daily Excretion of Sugar in Grains. | Treatment. | |
|-------------|----------------------------------|-------------------|-------------------------------------|--|---|
| Nov. 22 ... | * | * | * | Peppermint water only. Average sugar excretion, 2,335 gr. | |
| " 26 ... | 86 | 1032 | 2,236 | | |
| " 27 ... | 90 | 1033 | 2,250 | | |
| " 28 ... | 91 | 1034 | 2,548 | | |
| " 29 ... | 100 | 1031 | 2,300 | | |
| " 30 ... | 90 | 1030 | 2,160 | | |
| Dec. 1 ... | 90 | 1035 | 2,520 | | |
| Dec. 9 ... | 86 | 1032 | 2,064 | Aspirin, gr. x twice a day, commenced on Dec. 1st, and increased gradually up to Dec. 10th, when aspirin, gr. xv six times a day, was given. Average sugar excreted, 1,202 gr. | |
| " 10 ... | 60 | 1032 | 1,200 | | |
| " 11 ... | 62 | 1029 | 1,178 | | |
| " 12 ... | 56 | 1023 | 784 | | |
| " 13 ... | 51 | 1034 | 1,122 | | |
| " 14 ... | 60 | 1032 | 1,200 | | |
| " 15 ... | 75 | 1033 | 1,650 | | |
| " 16 ... | 80 | 1026 | 1,280 | | |
| Dec. 17 ... | 66 | 1031 | 1,386 | | Peppermint water only. Steady increase of sugar excretion up to 2,064 gr. |
| " 18 ... | 82 | 1027 | 1,538 | | |
| " 19 ... | 78 | 1029 | 1,560 | | |
| " 20 ... | 98 | 1030 | 1,960 | | |
| " 21 ... | 76 | 1030 | 1,864 | | |
| " 22 ... | 82 | 1030 | 1,886 | | |
| " 23 ... | 86 | 1030 | 2,064 | | |
| Dec. 30 ... | 88 | 1031 | 2,112 | Acetopyrin gr. viii six times a day; no result. | |
| Dec. 31 ... | 74 | 1030 | 1,702 | Aspirin gr. xv six times a day. Steady decrease of sugar excretion. | |
| Jan. 1 ... | 78 | 1027 | 1,482 | | |
| Jan. 5 ... | 66 | 1028 | 1,188 | | |
| " 8 ... | 65 | 1025 | 921 | | |
| Jan. 11 ... | 60 | 1025 | 840 | | |
| Jan. 19 ... | 65 | 1019 | 585 | | |

The patient left the hospital and was unable to continue the treatment

for several months. She returned in November, 1901. The sugar excretion was then the same, as on the previous admission to the hospital before treatment was commenced. She was placed on ordinary hospital diet with the exception of sugar, potatoes and rice pudding which she had not taken for a long time. Ordinary white bread and milk were allowed in the same quantity as was taken by non-diabetic patients. The diet was kept unchanged whilst she was in the hospital; it was practically the same as that taken before she was admitted. For the first ten days no drug was given, except a few minims of peppermint water, three times a day. During this period the average daily sugar excretion was 2,335 gr. Aspirin was then given and steadily increased up to 15 gr. six times a day. During the next seven days, after this dose of the drug had been reached, the sugar excretion diminished, the average for this period being 1,202 gr. daily. The aspirin was then discontinued and a few minims of peppermint given three times a day. The sugar excretion rose at once and steadily increased from 1,280 gr. up to 2,064 gr. daily, at the end of seven days. The peppermint water was then replaced by acetopyrin 8 gr. six times a day, for seven days, but no diminution of the sugar excretion occurred. Aspirin was then given—15 gr. six times a day. The sugar excretion steadily diminished from 2,112 gr. on December 30th (the day before the aspirin was commenced) down to 585 gr. on January 10th and 348 gr. on January 22nd. (See second table).

Similar observations have been made on several occasions in this case during the last twelve months. Aspirin has been given and the sugar excretion has diminished; the aspirin has been replaced by a few minims of peppermint water, and the sugar excretion has increased; on again giving aspirin the sugar excretion has diminished.

CASE II.—Woman, aged 48; mild form of diabetes mellitus. Admitted into the Ancoats Hospital March 28th; discharged May 5th, 1902. During this period she was given ordinary hospital diet, including the usual amount of bread, sugar, rice pudding, milk, and potatoes. From the second to the sixth day after admission, she was given a few minims of peppermint water three times a day. The amount of urine and the sugar excretion during this period were as follows:

| Date. | Daily Amount of Urine in Ounces. | Specific Gravity. | Daily Excretion of Sugar in Grains. | Treatment. |
|--------------|----------------------------------|-------------------|-------------------------------------|---|
| March 29 ... | 60 | 1036 | 1,620 | A few minims of peppermint water three times a day. |
| " 30 ... | 65 | 1035 | 1,885 | |
| " 31 ... | 60 | 1034 | 1,500 | |
| April 1 ... | 85 | 1033 | 2,125 | |
| " 2 ... | 66 | 1032 | 1,584 | |

Antipyryn and afterwards urotroptin were given until April 20th. But the sugar excretion remained undiminished. On April 19th it was 2,375 gr. for the twenty-four hours, and the amount of urine 95 oz. Aspirin was then given in small quantities, and the dose increased until on April 25th the amount was 15 gr. five times a day. Under this treatment the sugar excretion steadily diminished. The following figures show the daily excretion:

| Date. | Daily Amount of Urine in Ounces. | Specific Gravity. | Daily Excretion of Sugar in Grains. | Treatment. |
|--------------|----------------------------------|-------------------|-------------------------------------|----------------------------------|
| April 25 ... | 58 | 1033 | 1,200 | Aspirin gr. xv five times a day. |
| " 26 ... | 56 | 1032 | 1,232 | |
| " 27 ... | 60 | 1029 | 1,200 | |
| " 28 ... | 42 | 1035 | 1,050 | |
| " 29 ... | 40 | 1036 | 800 | |
| " 30 ... | 24 | 1036 | 240 | |
| May 1 ... | 45 | 1023 | 225 | |
| " 2 ... | 40 | 1022 | 400 | |
| " 3 ... | 27 | 1025 | 120 | |
| " 4 ... | 24 | 1025 | 135 | |
| " 5 ... | 25 | 1021 | * | |

* Only slight trace of sugar present.

For the twenty-three days before the aspirin was commenced the sugar excretion had remained practically stationary. Under the action of aspirin the sugar excretion steadily decreased, until only a trace of sugar was present (the amount being too small to estimate by the fermentation method). There had been no restriction of diet; the aspirin had caused no toxic or unpleasant symptoms; the pulse was normal, and the patient felt quite well. The patient was unable to remain in the hospital longer on account of family duties. She went home, and discontinued the aspirin. Two weeks later she returned as an out-patient. The urine then contained much sugar. Aspirin was prescribed, and the sugar soon disappeared. At a later date the aspirin was discontinued, and the sugar returned.

CASE III.—Woman, aged 48; mild form of diabetes mellitus. Admitted as an in-patient at the Ancoats Hospital, June 8th, 1901. Patient's sister had died of diabetes mellitus. In order to be certain that any diminution of sugar excretion noted was not due to altered diet, the patient was placed on the ordinary hospital diet, that is, on a diet the same as that given to the non-diabetic patients.

The amount of urine and the sugar excretion on the fourth and fifth

days after admission to the hospital, and the result of treatment with aspirin, are shown in the following table :

| | | Daily Amount of Urine in Ounces. | Specific Gravity. | Daily Excretion of Sugar in Grains. |
|--|---------|----------------------------------|-------------------|-------------------------------------|
| Peppermint water ... | June 11 | 46 | 1033 | 1,058 |
| | " 12 | 48 | 1036 | 1,056 |
| Aspirin 15 grains six times a day ... | June 13 | 28 | 1030 | 308 |
| | " 14 | 28 | 1019 | 28 |
| | " 15 | 26 | 1017 | Trace only. |
| Aspirin discontinued on account of headache and sickness ... | June 16 | 30 | 1029 | 390 |
| | " 17 | 38 | 1030 | 570 |
| | " 18 | 68 | 1022 | 696 |
| Aspirin 15 grains three times a day ... | June 19 | 40 | 1021 | 280 |
| | " 20 | 32 | 1019 | 160 |
| | " 21 | 40 | 1017 | 120 |
| | " 22 | 42 | 1016 | 84 |
| | " 22 | | | |

After June 22nd the sugar excretion steadily diminished, and in ten days only a trace was present. The aspirin was increased to 15 gr. four times a day, and the sugar disappeared entirely on July 3rd. Later a little sugar reappeared, but soon the urine was free from sugar again. On July 29th it was still free from sugar.

CASE IV.—Woman, aged 73. Mild form of diabetes mellitus. Admitted into the Ancoats Hospital, April 22nd, 1902. Patient allowed ordinary hospital diet, including bread, sugar, milk, potatoes, and rice pudding in usual amounts. For four days she was given a few minims of peppermint water three times a day. During this period the sugar excretion was as follows :

| Date. | Daily Amount of Urine in Ounces. | Specific Gravity. | Daily Excretion of Sugar in Grains. | Treatment. |
|--------------|----------------------------------|-------------------|-------------------------------------|---|
| April 23 ... | 78 | 1029 | 1,716 | } Few minims of peppermint water three times a day. |
| " 24 ... | 84 | 1034 | 2,016 | |
| " 25 ... | 87 | 1030 | 1,780 | |

Aspirin was then given and the dose steadily increased until on May 2nd the dose of 15 gr. five times a day was reached. This dose was continued for thirteen days. The sugar excretion was as follows :

| Date. | Daily Amount of Urine in Ounces. | Specific Gravity. | Daily Excretion of Sugar in Grains. | Treatment. |
|-----------|----------------------------------|-------------------|-------------------------------------|------------------------------------|
| May 2 ... | 100 | 1038 | 2,900 | } Aspirin gr. xv five times a day. |
| " 3 ... | 95 | 1038 | 2,470 | |
| " 4 ... | 68 | 1038 | 1,428 | |
| " 5 ... | 80 | 1036 | 1,600 | |
| " 6 ... | 60 | 1034 | 840 | |
| " 7 ... | 58 | 1035 | 754 | |
| " 8 ... | 80 | 1030 | 960 | |
| " 9 ... | 83 | 1027 | 664 | |
| " 10 ... | 85 | 1029 | 935 | |
| " 11 ... | 70 | 1028 | 560 | |
| " 12 ... | 84 | 1026 | 504 | |
| " 18 ... | 52 | 1033 | 468 | |
| " 19 ... | 83 | 1030 | 913 | |
| " 20 ... | 61 | 1033 | 732 | |

On May 20th there were slight noises in the ears; the aspirin was discontinued, and peppermint water given, with the result that the sugar excretion increased rapidly and markedly as shown in the table.

| Date. | Daily Amount of Urine in Ounces. | Specific Gravity. | Daily Excretion of Sugar in Grains. | Treatment. |
|------------|----------------------------------|-------------------|-------------------------------------|---------------------------------|
| May 21 ... | 74 | 1036 | 1,480 | } Taking peppermint water only. |
| " 24 ... | 80 | 1036 | 1,520 | |
| " * ... | * | * | * | |
| " 27 ... | 96 | 1035 | 2,400 | |
| " 28 ... | 120 | 1034 | 2,880 | |

Aspirin was given again on May 20th, 15 gr. five times a day. Under the action of aspirin the sugar excretion diminished, but not so markedly as during the first period of its administration. It was continued for twelve days, five times a day, and then given (15 gr.) six times a day for four days. During these four days the average sugar excretion was 1,569 gr. daily.

The aspirin was discontinued and peppermint water given for nine days. The sugar excretion rapidly increased. During the last six days when the patient was taking peppermint water only, the average sugar excretion was 3,300 gr. daily, that is, double the quantity excreted just previously, when the patient was taking aspirin. Again aspirin was given—15 gr. four and then five times a day. The daily excretion of sugar diminished, and during the last six days the patient was taking aspirin the average sugar excretion was 1,989 gr.; that is, the average daily sugar excretion was 1,320 gr. less than the average during the last six days when the patient was taking peppermint water, immediately before the aspirin was commenced on this last occasion.

In these four cases all the conditions were kept the same during the periods of observation, with the exception of the drug treatment. When aspirin was given the sugar excretion was diminished. When the aspirin was discontinued, and a few minims of peppermint water given in place of it, the sugar excretion increased. When aspirin was again given the sugar excretion diminished. The favourable results cannot be attributed to the diet, which was kept unchanged in each case. To me it appears that the diminution of the sugar excretion can have been caused only by the action of the aspirin.

These good results were not associated with the occurrence of complications, gastric disturbance, feeling of depression, or other unfavourable symptoms. During the periods of treatment with aspirin, the patients declared that they felt quite well, and the weight remained stationary or slightly increased. Though aspirin is certainly no specific for diabetes, the observations, in the four cases just recorded, appear to me to show clearly that in some cases this drug has the power of decidedly diminishing the sugar excretion.

The drug has most influence in the less severe forms of the disease, and in chronic glycosuria; in the most severe and acute forms, in young people, I have not been able to detect any definite change in the sugar excretion by the use of aspirin. The dose of aspirin required to produce a decided diminution of the sugar excretion in the less severe forms of diabetes is rather large—15 gr. four, five, or sometimes six times a day. The drug requires to be watched, for in spite of many statements to the contrary, I have found that in large doses it does sometimes produce noises in the ears, and other toxic symptoms of the salicylates. There can be no doubt, however, that these symptoms occur less frequently than with sodium salicylate. It is best to commence with a small dose (10 gr.) twice or three times a day, and to increase up to 15 gr. four or five times a day, and in some cases six times a day, if no noises in the ears or toxic symptoms occur.

I have given the drug in the form of a powder, to be taken in a tablespoonful of water, to which one or two drops of lemon juice have been added. I believe it is better to give the drug in a slightly acid fluid; when it has not been administered in this way I have sometimes found that it has given rise to much gastric disturbance.

In a previous article (BRITISH MEDICAL JOURNAL, March 30th, 1901) I have recorded observations showing the action of sodium salicylate in certain cases of diabetes, and further use of this drug has furnished me with additional evidence of its value. From trials which I have made of the action of aspirin and sodium salicylate alternately in the same case, I do not think the former drug has any direct advantage over the latter as regards the power of diminishing the sugar excretion. But some patients cannot take sodium salicylate in large doses on account of gastric disturbance, toxic effects, etc. In such cases I have usually found that aspirin could be taken without these bad effects being produced. Also in many cases of diabetes aspirin can be taken in large doses for long periods much better than sodium salicylate. In some cases I have given both drugs—sodium salicylate twice, three, or four times a day, and aspirin as a powder at night—with apparent advantage.

PRESENTATION.—A handsome silver salver, subscribed for by the officers of the Hungerford Union, and accompanied by a framed address, was recently presented to Dr. H. P. Major, J.P., as a token of their appreciation of the uniform kindness and consideration he had shown during the forty years he had been medical officer to that Union.