probable that one sapraemia will differ much from another in its power of lowering the saturation point for sugar. At present gangrene and carbuncle are the most striking and misleading agents in the causation of sapraemic glycosuria, but further investigation will doubtless reveal a long series of such agents differing from each other very much in the power of causing sapraemic glycosuria.

SELF-INFLICTED INJURIES IN CIVILIAN PRACTICE.

BY

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I.—MR. RENDLE SHORT.

A CASE like the following might so easily get a surgeon into undeserved trouble that it seems desirable to put it on record.

A young woman, giving her age as 18, was admitted into one of my wards at the Bristol Royal Infirmary in November, 1915, with a three weeks' history of appendicular colic. I removed the appendix. There were two small ulcers in its mucosa. She healed well and went back to her home in the country. On January 27th, 1916, she paid us a visit complaining of pain in the scar, but nothing abnormal could be found.

In December, 1918, she was readmitted, with the history from her doctor that she had been in the workhouse infirmary for many weeks discharging pus and fragments of a gauze swab from the scar of the appendix operation. He and his partner had opened up the wound under an anaesthetic, but could not find any gauze, nor did the track go through the muscles of the abdominal wall. As it still did not heal, and fresh bits of gauze came out, they sent her up to me.

Naturally I was very perturbed. It is an absolute rule with us never to put a swab in the abdomen without a tape and artery forceps on it, to count all swabs before and after operation, and almost never to use gauze packing; but to err is human. The patient's age was now given as 24. For the first few days after arrival her temperature was high, about 103°. At first the pulse was also quick, but after a while the slow pulse, normal general appearance, and very irregular high temperature led us to give her the thermometer again, just after it had registered over 101°, and we found that in the mouth it was normal. After that she was deprived of her hot-water bottle when her temperature was taken, and it became normal.

Meanwhile the abdominal sinus discharged freely. I opened it up on January 16th, 1919, and found no gauze. The tracks were extensive amongst the abdominal muscles, but did not go through them to reach the peritoneum. I cleaned it all up very carefully, and drained the wound after partially closing it. It did not heal. Some weeks afterwards a piece of seldedge-edged gauze came out, such as we never use for swabs. This relieved my mind greatly. She was sent home still with a small sinus and returned to the workhouse infirmary. Mentally she behaved and conversed quite normally.

In September, 1919, several more pieces of gauze came out, which were sent me by post. Then she became very ill, and there was a discharge from two openings, one on the abdomen and the other below Poupart's ligament, smelling like faeces. I readmitted her. She now gave her age as 19. On September 22nd I operated, beginning by exploring the abdomen in the middle line. The abdominal cavity was quite normal. The caecum was not adherent to the anterior abdominal wall, and there was no mass in the right iliac fossa. I closed the abdomen again and slit up the sinuses. There was a foul track connecting them, about six inches long, running deep in the subcutaneous fat but not penetrating the muscles. In the deepest part of the sinus was a piece of wool as large as a haricot bean, with a faecal odour. I thoroughly excised the whole track and sewed up the whole incision in clean tissues. Over the dressing we then put on yards and yards of adhesive plaster, completely encircling the thigh and lower abdomen. The operation was performed in the presence of eight or ten most interested spectators, whose names were recorded in the notes as witnesses.

It was, of course, impossible for the patient to get at the wound, strapped up as it was with continuous adhesive plaster, and it had healed up, though rather insecurely on account of deep sepsis, in about a fortnight. One or two small abscesses formed, discharged, and healed up before we could regard the scar as safe. When she went home, soundly healed at last, I roundly accused her of pushing in the gauze and wool herself. She denied it indignantly.

In January, 1920, so her doctor informed us, the scar started discharging again through a fresh sinus, and presently all her urine was passed through this sinus. She became very ill, and nearly died. In June, 1920, she was readmitted to my ward.

She looked thin and ill. There was a large sinus in the lower end of the old appendix incision, through which the whole of her urine escaped. A skiagram was taken, which showed an elongate foreign body lying in the bladder. On June 17th I performed suprapubic cystotomy, and removed a broken piece of a bone knitting needle, four inches long, encrusted with phosphates, which was loose in the cavity of the bladder. When pressed a few weeks after to account for the presence of the needle in the bladder she at first said that her doctor at the workhouse infirmary had lost it in probing the wound, but finally she admitted that she had pushed it into the bladder herself from the abdomen.

When I returned from a holiday at the end of August, though the sinus in the appendix region had healed, the suprapubic opening was still as large as one's finger, and I felt sure that the patient was tampering with it. A catheter had been tied into the bladder through the urethra without hastening healing; on one occasion the catheter was found blocked with wool. Then the end of the catheter disappeared. On August 31st I operated for the fourth time, removed about an inch of the end of the catheter from the bladder, sutured up the suprapubic wound, and secured it with an anchored dressing. To give it a better chance to heal I dilated the urethra sufficiently to give her incontinence for a week or two. By this means the wound eventually healed up, and she was sent out well.

I have recently heard from her doctor (November, 1920) that the suprapubic wound is open again. She makes no secret this time that she did it herself.

It was quite clear to us, from the time of the operation in January, 1919, that these sinuses were the result of self-inflicted injuries, and that the gauze had been pushed in by herself, for the following reasons, quite apart from the routine precautions taken at the original operation in 1915:

1. The original wound healed well, and stayed healed for years.
2. Not one swab, but several small pieces, came out.
3. The sinus did not penetrate the abdominal muscles, so that any swab must have been left, not in the abdomen, but in the abdominal wall, which is scarcely credible.
4. She had already been detected "faking" her temperature.

When later, in spite of two negative explorations of the sinus—one at home and one by me—a piece of seldedge-edged gauze, a lump of wool, and enough separate fragments of gauze to constitute four or five swabs, were found in the track, of course the nature of the case became obvious, and was confirmed by the facts that healing did not take place when she could get at it, but union by first intention took place when she was thoroughly strapped up. Nevertheless, there was a stage when an action at law for negligence in leaving a swab behind would have been all too likely to succeed, and the putting of this case on record may be a protection to some surgeon unjustly accused in the future. Legal proceedings were never threatened against me.

The motive and the state of the patient's mentality are hard to fathom. That she should be an inmate of a hospital and a workhouse infirmary for over two years, and inflict such injuries upon herself as to push a thick bone needle from the right iliac fossa into the bladder, simply to escape work or to excite sympathy (of which she got very little in Bristol), seems hard to believe, yet the only evidence to be found of unsoundness of mind is furnished by these actions. Her behaviour and conversation were otherwise normal.

Perhaps, in view of the incredible nature of the case, it may be as well to state that the facts can be vouched for by a whole succession of my house-surgeons and dressers, and the patient and "finds" have been shown to various surgical meetings. I owe a considerable debt to the acumen of my ward sister, Sister Julia Gross, in clearing up the nature of the case.

One somewhat similar example of a self-inflicted injury has come under my care. Some years ago, when our dermatologist was away at the war, I was asked by the acting out-patient physician, Dr. W. A. Smith, to see a girl, aged about 14, because she got a peculiar rash on her face every Wednesday afternoon at about 1 o'clock. The distribution was that of lupus erythematosus, but the characters were those of irritant dermatitis. Of course the extraordinary time-relation made it quite certain that it was an artefact, though we inquired if there was anything special about her diet on Wednesdays; there was not. I suggested having her up on Wednesday morning

and putting on a lint and ointment face-mask. This was done, and as her mother refused to take her home through the streets like that we had to admit her. On that Wednesday no rash appeared, and she went home next day. On the following Wednesday the rash reappeared, but obviously we could not find a bed for her every week. Why she did it I do not know.

II.—MR. CYRIL WALKER.

It is not easy to understand the motive which induced the girl whose case is to be related to inflict so much pain upon herself, but I have very little doubt that she was in some way tampering with her eyes long before the pieces of cotton-wool and thread were discovered.

L. G. came to me at the Bristol General Hospital as an out-patient in 1892 when she was 6 years old. She was then suffering from phlyctenular conjunctivitis and keratitis. She soon recovered under the usual treatment, but had very frequent recurrences, so that for some eight or ten years she was almost constantly under treatment. When she was 8 years old she had typical molluscum contagiosum of the eyelids—a disease, by the way, which is seldom seen amongst ophthalmic out-patients now. When she was 12 she developed tuberculous glands in the neck, and in consequence underwent three extensive operations between the ages of 15 and 17. The corneae were at that time so much damaged by recurrent strumous keratitis that she could only read big print, and no examination of the fundi was possible. When she was 18 she had an extremely severe and intractable attack of keratitis affecting both eyes, and accompanied by great photophobia and intense spasm of the orbicularis. She was an in-patient for some months, and towards the end of her stay in hospital it was noticed that on two or three occasions a tiny piece of cotton-wool or of thread from a bandage was found in the conjunctival sac. She was not definitely accused of having introduced these foreign bodies, but she was questioned about it and told to be very careful not to touch her eyes herself. Her general condition slowly improved, and her eyes gradually quieted down. The corneae had been rendered very opaque all over by the interstitial keratitis. No fundus reflex could be obtained, and her vision was reduced to bare perception of light. The corneal condition was not enough to account for such great loss of sight, and it must be assumed that she had choroiditis at the same time as the keratitis.

Soon after this, as her health was fairly good and there seemed to be no further prospect of recovery of sight, she was admitted to the Blind Asylum as a resident pupil. Attacks of conjunctivitis with keratitis soon came on, and after several attacks Dr. Flemming found that she deliberately introduced pieces of the thick paper used for Braille writing under her lids. On three occasions a piece as large as the finger-nail was found in her right eye. She was very sternly spoken to by Mr. Cross, and an exaggerated account of the risk she ran of setting up dangerous, perhaps fatal, inflammation induced her to desist from any such pranks again. Since then she has had no similar attacks.

Such practices amongst ophthalmic patients have often been recorded, but usually the immediate object is obvious—to excite sympathy, to prevent returning to work, or to gain admission to hospital. I recall the case of a young woman who was much crippled with arthritis, and who, besides attending at the electrical department, repeatedly for some years came to my ophthalmic out-patients with "conjunctivitis" which was never at all severe and left no trace. It always got well quickly with boric lotion and mild astringents. On one occasion, as she was leaving the consulting-room, she dropped a small piece of hard dry white soap. She picked it up hastily, but not before I had seen it. On being asked what it was for she made no reply, but turned very red. She had no more conjunctivitis after that day, though I often passed her on her way to and from the electrical department. The inference is almost irresistible that the conjunctivitis was self-inflicted, and that the soap was the agent used.

NOTES ON ONE THOUSAND CASES OF BILHARZIASIS TREATED BY ANTIMONY TARTRATE.

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OUR reason for adding still another chapter to the rather numerous articles written on the subject of the treatment of bilharziasis by intravenous injections of antimony tartrate is the fact that up to the present time the con-

clusions arrived at have been based on the investigation of a comparatively small amount of clinical material, whereas we have been able to avail ourselves of the exceptional opportunities which Egypt affords for making observations on very large numbers of patients.

We can add little fresh information to what has been noted in previous articles on the subject, but with the records before us of 1,000 individuals who have undergone treatment at our hands, we are able to verify what has already been written on the subject, and venture to think that our testimony to the efficacy of the antimony tartrate treatment may be of some value, and a report of the results of the treatment of our first thousand cases of general interest.

Since June, 1919, injections of antimony tartrate in accordance with Dr. Christopherson's observations have been the routine treatment for bilharziasis at the Church Missionary Society's Hospital, Old Cairo, and we are now injecting from fifty to seventy cases a day; both urinary and rectal bilharziasis are being treated, but the former in a much larger proportion.

Dose.

In cases without contraindication the usual method has been to start with 1 grain as the initial dose, increasing by $\frac{1}{2}$ grain at each injection, so that the maximum of 2.5 grains is reached at the fourth injection; this dose is then repeated at all subsequent injections. Injections are given on consecutive days for the first six days, and then on alternate days. The dose is altered in the following cases: Weak men and most women take slightly smaller doses. Children take much smaller doses in proportion to their size and condition. All cases showing much reaction—for example, fever, loss of appetite, etc.—are given smaller doses, and some are given longer periods between injections. It is worth while mentioning that the liberal dosage mentioned above is found necessary in order to cure the disease within a limited period. Our patients, most of them farm labourers, are unwilling to prolong their stay in hospital unduly. On the other hand, it appears that a much smaller and more gradual administration of antimony is equally effective. Quite small doses spread over a considerably longer period appear to cure the disease, the main point being the cumulative effect of about 20 grains of the drug.

Examination.

All cases are submitted to microscopical examination before beginning the course. A re-examination is made after the sixth dose, and subsequently after every dose, and a daily report made with regard to the presence of bilharzia eggs, their condition, and the relative proportion between dead and living eggs in each specimen. When all eggs are found "dead" injections are stopped. The urine is examined again on the two following days, and on three consecutive reports of all eggs being dead the patient is considered free from bilharzial infection. Unfortunately some patients after one report of "all dead" will not stay for further examination. Examinations are made as follows: The urine is allowed to stand for a quarter of an hour, and the deposit pipetted off for examination. If the result is negative the lower layer of the urine in the specimen glass is centrifuged and the deposit examined. Dead eggs are shrivelled and black. No organism is visible in the eggs, and they fail to hatch out on the addition of water.

Rectal cases are more difficult to pronounce free from bilharzial infection, for sometimes eggs do not show for days together. Consequently in these cases we do not usually depend on microscopical examination, but give the full course of twelve doses, amounting to 27 grains of antimony tartrate.

Statistics.

In 1919 (June to December) 370 cases of bilharzial disease were treated, while in 1920 (January to August) our books record 630 cases. Proper records of the first 150 cases in 1919 were not kept, and of the remaining 220 we find that 44, or 20 per cent. of the total number, received less than six injections each. This is not surprising considering that the antimony method of treatment is by no means free from discomfort. Moreover, treatment was abandoned in the case of a few where adverse symptoms, such as marked debility, anorexia, etc., supervened after a