former by squeezing the blood and lymph onwards, the latter by causing muscular contraction; and it is surprising that they have not been more largely resorted to. In employing electricity care must of course be taken to secure rhythmic contraction, since a prolonged contraction, by inducing a protracted narrowing of the venous bed, must necessarily impede the blood current.

A SUCCESSFUL CASE OF ANASTOMOSIS OF THE SMALL INTESTINE.¹

By HARRISON CRIPPS, F.R.C.S.,

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F. P., aged 35, was admitted into St. Bartholomew's Hospital in February, with the following symptoms. For the last three years she had had gradually increasing loss of blood at the monthly periods; during the last six months the loss had lasted for two or three weeks continuously, with seldom more than a week's interval. She had become very weak, and quite unable to do her housework.

Present Condition.—Is very pale and anæmic, both legs considerably swollen. Rising to the umbilicus is an oval elastic swelling. *Per vaginam*, some hard, displaceable masses can be felt in Douglas's pouch. Bimanually these can be identified as continuous with the abdominal tumour. A sound passed $6\frac{1}{2}$ inches. Prolonged rest having been tried without benefit, an operation was decided upon. The tumour was found to be a large multinodular fibroid growing beneath the broad ligament. The tumour was shelled out, the uterine pedicle being secured with the *serre-nœud*. The patient did well till the eighteenth day, when she was suddenly seized with symptoms of acute intestinal obstruction.

In Mr. Harrison Cripps's absence the abdomen was reopened by Mr. Bruce Clarke, who found some intestine adherent to the under surface of the scar. In separating this, owing to the firm nature of the adhesions, the intestine was unavoidably damaged to such an extent as to render its return unsafe, while the patient was so collapsed, and the intestine above so distended, as to make an excision of the implicated part inexpedient. The damaged intestine was therefore stitched to the skin at the lower part of the wound and opened. The immediate effect of this was to relieve the symptoms of obstruction, and the patient recovered from the operation. Two months later she was still passing the whole of her motions through the wound. There were two openings about an inch apart, from both of which the *fæces* escaped. The motion was very ill-digested, and always mixed with a large quantity of bile. The patient's condition was most deplorable, and by no device could the part be kept clean or dry. The skin over an area of 5 or 6 inches round the openings was excoriated, bright red, and excessively tender. The patient was rapidly emaciating. Two separate attempts were made, with an interval of three weeks between them, to close the fistulæ by a plastic operation. Both failed. The adherent bowel, though freely separated on each side of the opening, was so atrophied and shrivelled, that when united by Lembert sutures its calibre was no more than that of a No. 12 catheter. Indeed, after the second operation, it was less than this. On each occasion, on the third day after operating, the stitches gave way, and the condition was worse than ever. It was obvious from the rapid emaciation of the patient, and her extremely feeble condition, that she would shortly die of inanition. It was under these circumstances that it was determined to give her such a chance as a resection of the intestine would afford. The following operation was performed. The patient was prepared by being kept for two or three days on milk and broth diet. A mild purge was then given, after which no food was given by the mouth for twenty-four hours previous to the operation. Owing to the constant leakage of *fæces* and bile, no proper antiseptic preparation was possible. When the patient was under the anæsthetic the fistulous opening was firmly plugged with sponges, one being passed upwards into the bowel and another downwards. This effectually stopped the leakage, and gave an opportunity for thorough cleansing.

¹ Read before the Medical Society of London.

An elliptical incision, 4 inches in length, was made into the abdominal cavity, so as to include both fistulous openings, together with the cicatricial tissue and about half an inch of skin on each side. On lifting up the oval portion of the abdominal walls thus excised a coil of small intestine, close to the duodenum, was found to be the adherent portion. On tracing the intestine downwards at a distance of 6 inches from the fistulous opening a second firm adhesion to the uterine pedicle was found. This, doubtless, was the point of original obstruction. After separating this lower adhesion the bowel was so torn and thin at the spot that it could not safely have been left. The intestine, therefore, was gently clamped over a thin sponge a few inches below this point, and was also clamped a few inches above the fistulous opening; the intervening portion, $11\frac{1}{2}$ inches in length, was then cut clean out. Maunsell's excellent method of anastomosis, with some modification, was adopted. The abdominal cavity being carefully packed with sponges, the two free ends of the bowel were thoroughly washed out and cleaned. Two temporary silk ligatures with long ends were employed to fix the position of the bowel and bring the two ends into apposition. These ligatures included all the coats of the bowel, the one at the mesenteric attachment, the other opposite to it. A longitudinal cut, $\frac{3}{4}$ of an inch in length, was made at three inches from the divided end of the upper segment, this incision being opposite to the mesenteric border of the bowel. A pair of pressure forceps passed through this opening and out at the cut end, seized the temporary ligatures, which were then drawn through the longitudinal incision. The cut ends of the bowel following the ligatures were thus invaginated and drawn out at the same opening. The ends accurately adjusted, peritoneal surface to peritoneal surface, were sewn together with fifteen interrupted sutures, which were cut off close to the knots. The joined ends were then drawn back and the longitudinal slit closed with Lembert sutures. A ring of sutures, including only the peritoneal coat of the bowel, was now put round the line of junction as an additional security. The divided portion of the mesentery was brought together by a double row of sutures on each side. In this way absolute co-adaptation of adjacent peritoneal surfaces was obtained, and the weak spot at the point where the mesenteric border of the bowel was invaginated was completely enclosed. This could not have been so satisfactorily accomplished if the stitches had been passed through the whole thickness of the mesentery as usually done. For the sutures the finest silk was used, which was obtained by unravelling No. 6 twist into its three primary threads.

For some days the patient was extremely weak, with a pulse of 150. The temperature remained normal, and she suffered no pain. She was fed chiefly by nutrient injections for a week, but on the third day commenced small quantities of milk and water. On the fourth day she had a fluid action from the bowels, the first for some months. After this she had a good action daily. She was allowed up at the end of a month, and was discharged from the hospital well seven weeks after the operation. (The patient, in excellent health, was shown at the meeting.)

REMARKS.—When operating on a case of intestinal obstruction it may happen that the trouble can only be remedied by destroying the continuity of the gut. If the patient be in good condition, and the bowel not much distended, it may be proper, after resecting the part, at once to unite the divided ends, and return the bowel into the abdominal cavity. So far as I have observed in practical surgery, the opportunity for such immediate radical treatment is exceptional. The prime consideration in most cases is how to give prompt relief to the obstruction, and tide over shock which threatens to be fatal in a few hours. It is of little benefit to perform the operation of anastomosis, with its delicate and accurate stitching, merely to demonstrate on the morrow's *post-mortem* that the bowel is impermeable to water. It is impossible to conceive a more inappropriate time for performing what must necessarily be a prolonged operation than when a patient is suffering from complete obstruction. The great distension of the abdominal viscera adds considerable difficulty to the operation, and causes the intestine to crowd out of the incision; while the vomiting and shock incidental to the obstruc-

tion has so reduced the patient as to leave but a perilous margin of vitality.

Another, and perhaps stronger objection to performing an immediate anastomosis is the relative condition of the bowel above and below the obstruction. Above, the gut is distended and paralysed, while below it is empty and contracted by the action of the circular fibres. The paralysed condition of the bowel above renders it powerless to pass its contents into the contracted portion below. The symptoms of obstruction therefore continue.

I believe, save in exceptional circumstances, it is better surgery to make a temporary artificial anus above the obstruction than to perform an immediate resection, and join the divided ends. Such an artificial anus gives immediate relief to the obstruction. It affords time for the distended and paralysed bowel to regain its power. By waiting a few days or weeks the patient can be carefully prepared, so that there is no food or fæces above the portion to be united, and the operation can be undertaken with far better prospects of success than would have been possible as a primary operation.

As to the best method of uniting the bowel, there is much divergence of opinion, and a far larger experience than is at present available is necessary to decide the question. At present, there are two main principles in vogue: the one is to employ absorbable bobbins, tubes, etc., within the canal of the bowel over which the intestine is sewn; the other is to dispense with these accessory articles. Those who advocate their use believe them to present among others the following advantages:—That they facilitate the suturing, thus shortening the length of the operation; that they make the union more accurate; that they keep open for the time the calibre of the bowel at the sutured parts. I do not, however, agree with these views. The adjustment over the plates, if done so as to afford perfect security, requires quite as many sutures as when no plates are employed, so that if the suturing be done with equal care by both methods time is not saved. As to the theory that the tubes keep the canal patent, facilitating the passage of fæces, it seems quite as probable that an opposite effect is produced by arresting the peristaltic action. The chief objection to the tubes, however, seems that, owing to the tuberosity they produce, all the sutures are on the stretch. This is not the case where no tubes are used, and it is astonishing to see the small size to which an empty portion of intestine will contract in the living body. This contraction takes off all tension from the stitches, and allows them to become nearly buried at once in the peritoneal coat. As further information is still required as to the results, immediate and remote, of intestinal anastomosis, and as to the best time and method of operating, I have ventured to bring this case before the Society as a successful instance of a secondary operation performed without the employment of tubes or plates.

I am indebted to Mr. Sloane, my house-surgeon, for the notes of the case.

HISTORY OF AN OUTBREAK OF OPHTHALMIA IN A GOOD CLASS BOARDING SCHOOL, WITH REMARKS.

By SIMEON SNELL, F.R.C.S. EDIN.,

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RECORDS have often, from time to time, been made of epidemics of ophthalmia affecting institutions, but these have, generally speaking, if not always, been those of pauper or low grade schools. A history of an epidemic implicating the boys attending a school not far removed from a public school, cannot, perhaps, fail to be of interest, especially as there are many points connected with it which may be of service to any having to deal with such an outbreak in the future.

When the discussion took place at the Ophthalmological Society a short time since, it was premature, in the opinion of those who had seen most of the outbreak, to discuss the matter, and it was further feared that it might be prejudicial

to a school which had already suffered sufficiently. These were, at all events, the reasons which prevented my contributing to the discussion what is here written. Now that the epidemic is practically over, its history can be given with the cordial co-operation of the medical officers, Drs. Jalland and Evelyn, who have borne the brunt of a very anxious time, and with the knowledge of the school authorities, who can only gain by having set forth the care, regardless almost of expense, with which they have endeavoured to discharge their duty.

Towards the middle of August, 1893, I became aware, in consequence of one of the boys being brought to me, that the scholars at a school in Yorkshire were, or at least some of them, suffering from an affection of their eyes. The boy in question had been among these. His condition was similar to that which will be mentioned presently as being found in the others.

Shortly after this I was requested to inspect the school and the boys, in concert with my friends Drs. Jalland and Evelyn, the medical officers to the school. This I accordingly did, and on the evening of August 23rd we inspected the school premises and examined several of the boys. The next day we examined the remaining scholars. The visits were thus arranged to not only give ample time for a thorough inspection of the school and boys, but for a complete discussion of the outbreak with the medical officers. The condition of things found and the circumstances which led up to their prevalence in the school may be thus stated.

In the preceding April (16th) a boy was taken to Mr. Jalland, suffering from ophthalmia. Other cases were at this time noticed, and were isolated as they arose; the boys being transferred to a house which is reserved for those affected with any infectious disorder. The eyes were bloodshot, but with little perceptible discharge. Several boys at one time or another suffered in a similar way; perhaps thirty altogether were affected. They did, however, to all appearances recover quite well.

It was at this period believed that one or two of the boys brought the disease into the school, but in the light of subsequent events it may be doubted whether this was the case or whether one or the other was merely the first to show evidence of the affection.

After the occurrence of ophthalmia in this way, the time was drawing on for the dispersion of the boys for the vacation, it being one of those schools which adhere to the old-fashioned system as to holidays. In consequence also a good deal of the prevalence of influenza they were sent home a week earlier. This would be in the middle of June. On their reassembling in the early part of August, Mr. Jalland soon detected what he considered an unhealthy condition in some of the boys' eyes, and had them again isolated. It was in great part owing to his representations of the necessity of an examination of the whole of the boys that I was requested to co-operate. It should be added that some of the masters had been sufferers at the same time as the boys.

As the result of the examination it may be said broadly that a mild form of follicular conjunctivitis was found to be very prevalent. The vesicles were situated chiefly on the inner surface, which was also reddened, of the lower eyelid, in some cases running the greater part of the length of the lid, like a chain of pearls. In but a few cases was the retro-tarsal fold much involved. The upper lids were less affected; when they were they had lost their polish, and appeared often velvety, or in some instances as if the finest sand had been sprinkled on the surface; there was also in some cases an increased vascularity. There appeared in all an absence of perceptible discharge. No discomfort was complained of, and without everting the eyelids hardly a case presented anything abnormal. Altogether eighty-four boys were examined. With the exception of two, all were boarders, and comprised the entire number of pupils at the school. One of the new boys was perhaps the most affected of any that were seen, and it appeared almost certain that he had entered with the condition present. Of the whole number of the boys, there were thirty-eight (Class 1, or healthy) who could be regarded as healthy, but there were as many as thirty-nine (Class 2, or suspicious) whose eyes, though not in many cases showing any very marked departure from a normal condition, yet under the circumstances it was impossible to regard as quite