when the entire circumference is surrounded, the two ends are tied firmly and union is complete. (Fig. 5.) If the

Fig. 4.—Diagram of section showing the ring in position, with involution of the edge of the intestine after tightening the lacing suture.

Fig. 5.—The method of passing the external suture through peritoneal and muscular coats alone.

surgeon clearly understands the way the first suture is to be passed, it is possible to effect a union more rapidly by this method than by any other that I know of, not even excepting Murphy's button, while in accuracy of adjustment and avoidance of leakage it leaves nothing to be desired.

I have had some of these rings made with upper and lower halves of unequal diameter; these permit of the more perfect junction being made between the dilated portion of intestine above the stricture and the contracted portion below, in this way resembling the reducing coupling by which a plumber connects two pipes of unequal diameter. In the majority of cases of obstruction I believe this is the best pattern to employ. While an obvious use of these rings will be to connect the ileum with the ascending colon in cases of excision of the cæcum.

The following four cases in which I have used these rings illustrate their applicability to different portions of the intestinal tract; they all occurred last year.

CASE I.—W. McG., aged 57, admitted to hospital April 2nd, 1896. He had a history of intestinal obstruction for a month, which one week before admission had become complete. He had an extreme amount of meteorism, his abdomen being very tense and hard, while stercoraceous vomiting was constant. His condition obviously precluded immediate laparotomy, so an intestinal drain was made by Greig Smith's method, using only local anaesthesia, and without removing the patient from bed; this gave exit to a large quantity of fluid faeces and flatus, and his condition rapidly improved, his urgent symptoms quickly subsiding. On April 15th (eleven days after the drain had been made) his abdomen was opened and a ring-like stricture of the sigmoid flexure, completely occluding the lumen of the bowel, was found; this was excised, and the ends brought together with a Murphy's button. On the eleventh day subsequently, the button was passed, and except for a fistula at the point of drainage the patient was well. Although the bowels continued to act quite normally, the fistula, contrary to my previous experience of such cases, refused to heal, and a prolapse of mucous membrane through it occurred. Consequently, two months subsequently (June 17th) an attempt was made to close the fistula, but finding the bowel much contracted at the opening, a second resection was performed, the ends on this occasion being brought together by means of the ring that I have described. The remains of the ring passed on the eighth day, and the patient rapidly recovered completely, and remains well and free from any recurrence.

CASE II.—A. W., aged 24, admitted to hospital, May 6th, 1896, suffering from a malignant stricture of the rectum of six months' duration. The stricture was situated high up, being only just within reach of the finger, while its upper limit could not be determined. As, however, it was freely movable, it was excised by removal of the coccyx and last bone of the sacrum, the upper and lower ends of the rectum being brought together by means of one of the rings. The remnants of the ring were found loose, and removed through the anus on the eighth day. A small fistula formed at the posterior portion of the line of junction. This, however, closed spontaneously, and the patient recovered completely with good restoration of the function of the bowel, and was discharged from hospital, July 21st, 1896.

The rectum is the most difficult portion of the intestinal tract in which to obtain end-to-end junction. In the first place, it is not completely surrounded by peritoneum, and so the surfaces are not as adhesive as in other parts. Secondly,

the more solid faeces in the lower bowel put a greater strain on the newly-united tissues, while the very considerable effort necessary to dilate the anus almost certainly forces some of the faeces through the delicate adhesion. This is all the more likely to take place if the usual method of keeping the bowels confined for several days after operation is adopted.

CASE III.—Female, aged 60, had suffered from abdominal symptoms with increasing constipation for about one year. She had lost flesh, and a freely-movable tumour, about the size of a hen's egg, was to be felt in the right hypochondrium. Laparotomy was performed September 26th, 1896, and the tumour was found to be in the transverse colon. A considerable piece of the colon had to be excised, and with it of course the attached great omentum. The divided ends came nicely together, and were attached by means of a ring. The case progressed for a week most favourably with no untoward symptoms whatever. The bowels acted quite naturally on the fifth day, but on the seventh, after the wound had quite healed, she suddenly became collapsed, and died in three hours. Her symptoms being cardiac and not abdominal. As no post-mortem examination was obtained, we cannot definitely say what the immediate cause of death was, but I am, however, confident it was not the result of giving way of the united intestine.

CASE IV.—M. B., aged 45, was admitted to hospital on December 21st, 1896. She had a considerable right femoral hernia, which had been strangulated forty-eight hours. As was suspected from her symptoms, we found on opening the sac that the intestine was in a state of gangrene, dark green in colour, with foetid fluid in the sac. Instead of relieving the stricture in the usual way, I incised the tendon of the external oblique muscle of the abdomen directly above the neck of the sac, and then, by cutting through Poupart's ligament, relieved the stricture; the gangrenous intestine was then excised. The intestine above the strangulation was quite twice the diameter of that below, and consequently a ring which fitted nicely the upper part could not be introduced into the lower. I therefore pared away with a knife the lower portion of the decalcified ring until it fitted without strain and completed the junction; after thorough cleansing of the peritoneum, the gangrenous sac was dissected away and the neck stitched to the upper angle of the wound, the divided Poupart's ligature being closed by a suture. As some of these faeces had escaped into the abdominal cavity, I thought it safer to introduce a drainage tube. Recovery was as rapid as in the most ordinary case of strangulated hernia, and the patient is now back in her former situation as a cook as well as ever. She has, however, a slight tendency to hernia along the track of the drainage tube, but Poupart's ligament and the femoral ring are perfectly sound. In this case the difficulty of adjusting the dilated intestine above to the contracted bowel below, suggested the idea of having the rings made with the upper and lower halves of unequal diameter, and I am convinced that this alteration of the pattern is a very great improvement. The method adopted of relieving the stricture by cutting directly through Poupart's ligament instead of incising Gimbernat's ligament is, I believe, the rational way of treating strangulated femoral hernia; I know it is opposed to one of the surgical dogmas we were all taught, but the advantages of dividing a strangulation from without instead of from within are obvious. The division of Poupart's ligament does not weaken the abdominal wall any more than an incision in any other part of the abdomen while the suturing together of the ends of this ligament beneath the neck of the hernia effectually closes the femoral ring in a way that is otherwise impossible. In this particular case, if the old operation has been performed it would have been necessary to have opened the abdomen above as well, to complete the resection, as it would have been impossible to have returned the sutured intestine through the femoral ring without injury.

NOTE.

¹ The rings can be obtained from Messrs. Krohne and Sesemann, London, and Messrs. Fannin and Co., Dublin.

A CASE OF INTESTINAL OBSTRUCTION THROUGH A HOLE IN THE MESENTERY, ASSOCIATED WITH VOLVULUS AND HÆMORRHAGE INTO THE ABDOMINAL CAVITY: OPERATION: RECOVERY.

By J. GREIG SMITH, M.A., F.R.S.E.,

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The following case seems to be worthy of record on account of the unusual nature of the cause of obstruction, and of the rare accompaniment of the presence of blood extravasated into the peritoneal cavity.

The patient, a delicate boy of 12, was admitted to the Bristol Royal Infirmary on March 3rd, 1897, with symptoms of acute intestinal obstruction. Three weeks previously he had been suddenly seized with acute pain in the right abdomen; vomiting at once set in, and continued a fortnight. The patient was treated by rectal feeding and purgative injections. His temperature rose to 103° F. At the end of a fortnight his condition improved a little, and he was able to keep down some liquid food. On March 1st, however, after eating some solid food, there was a recurrence of the acute

symptoms with vomiting of green fluid in considerable quantities. On March 3rd he was sent to the Bristol Infirmary, and was operated on next morning.

The abdomen was greatly distended, the intestinal coils being clearly visible through the thin parietes. The incision was made along the outer margin of the right rectus abdominis, its fibres being separated. A large volvulus was at once found, its base being near the ileo-cæcal junction, and the loops of bowels hanging down into the pelvis. The whole was delivered, and twisting of the mesentery, easily visible to those in the operating theatre, was undone after four complete rotations. But the distended coils did not empty themselves, so the fingers were reinserted to explore, and found what seemed to be a thick fibrous band encircling the base of the twisted coils deep down in the posterior wall of the cavity. Thinking that the constricting band might be the appendix vermiformis, I exposed it by retracting the intestines, and decided from its size and appearance that it probably was the appendix. However, the appendix, when looked for, was found perfectly healthy, and it was then clear that strangulation was kept up by the end of the ileum itself, and that the loop of volvulus had passed through a hole in the mesentery. The ileum encircling the base of the loop was no thicker than many appendices, and looked pale and stretched, while the loops of strangulated gut were very dark, and in places hæmorrhagic. The hernia, for such it was, was easily reduced by dragging on the entering bowel, and squeezing the distended loops so as to empty them.

While the operation was going on liquid blood, or rather blood mingled with serum, was freely welling up out of the abdomen, and was mopped up as it came to the surface. The peritoneum everywhere was blood-stained, and the bleeding doubtless arose from the strangulated bowels or mesentery. The boy made an easy recovery.

The condition found I have endeavoured to depict in the accompanying diagram. For the sake of clearness the amount

of twisting and the number of loops involved are shown as being less than they actually were.

Slight degrees of volvulus round the mesenteric axis are described as being fairly common in cases of strangulation by bands and through apertures. In an experience of well over a hundred operations for obstruction I cannot say that I have found it so. I think I have met with it only four or five times. In one case of partial strangulation by the appendix vermiformis operated on for Dr. Fred. Evans, of Cardiff, a single loop of bowel was twisted once. In another, of strangulation through an opening in the left broad ligament operated on in the Bristol Infirmary, the bowel, lower

ileum, was twisted on itself several times. In a third case, where the Fallopian tube was the direct cause, but in a manner which I have never understood, there was volvulus of the sigmoid, but not to a marked degree. None of these cases were of the most severely acute type, and all got well. Simple uncomplicated volvulus has been, in my experience, a more grave condition than volvulus accompanied by internal hernia.

This case suggests an explanation. The first element in the obstruction was doubtless the passing of a loop of gut through the hole in the mesentery. This loop was close to the cæcum, where one end of it was fixed. Now the intestine being fixed at one extremity, new bowel could be passed through the opening only from the free side, and as the bowel passed through it it tends to cause volvulus, as the coils are piled up at the end of the holding mesentery. Perhaps the diagram will explain the process more readily than a written description.

Now this twisting, by keeping the gut on the stretch and preventing ballooning, may actually obviate complete obstruction, and may conceivably prevent excessive venous engorgement. The amount of blood found in the abdomen suggests that it may have escaped from the thin mesenteric veins by the twisting, just as water is wrung out of a wet cloth. I have never seen so much blood associated with internal strangulation of the bowels, although it is usual to find any serum present stained with blood.

PRESIDENTIAL ADDRESS

ON

SOME EXPERIENCES OF A COLONIAL SURGEON

*Delivered at the First Quarterly Meeting for 1897 of the
British Guiana Branch of the British
Medical Association.*

BY THE HON. D. PALMER ROSS, M.D., C.M.S.

GENTLEMEN,—I have in the first place to thank you for the honour you have done me in electing me to the Presidential chair of this important Branch, this being the second occasion in which I have had the honour of occupying the chair of a Colonial Branch of the British Medical Association, having been elected President in Jamaica in 1880. Composed as this Branch is of so many members of the profession, some of whom belong to the service of the Colony, and others who pursue the more peaceful path of private practice, I trust that this year we will have the pleasure of hearing many useful and instructive papers.

In the second place, I have to confess to you the difficulty I have experienced in selecting a suitable subject to form the theme of this address, for holding as I now do a purely administrative office, I am to some extent out of touch with the active practice of the profession; and I therefore propose to draw your attention to reminiscences of thirty-two years' hospital and private practice by citing some interesting medical and surgical cases which have fallen to my lot during that time, and which I have never published.

1. *Right Irreducible Inguinal Hernia.*—The first case I will mention is that of a blacksmith who had an irreducible inguinal hernia of enormous size and weight, and to my own knowledge of many years' standing. The tumour reached as low down as the man's ankles, and measured about 18 inches across the centre, the lower half being in an elephantiac condition. He applied at the hospital on account of acute pain and urgent vomiting of a stercoraceous character. On examination it was found that the abdomen was distended and tympanitic, and acutely painful and tender to the touch, the pain and tenderness descending into the upper part of the scrotum. On operating at the situation of the external ring it was found that the pyloric end of the stomach had been dragged down and become tightly strangulated at the external ring, together with a portion of the large intestine. Free division of the ring immediately relieved the strangulation, and it was then found that extensive purulent peritonitis was present, and that the scrotum contained the cæcum, the ascending colon, the pyloric end of the stomach, the omentum, and all the small intestines, the two latter being adherent and incarcerated with scrotum. The patient died, and the *post-mortem*