That this method of operating has much to recommend it I think there can be no doubt, as the time occupied in the operation is reduced, according to Dr. Senn, to from fifteen to twenty minutes.

Surgeons in this country doubtless will decline to adopt this method of operating until such time as they have convinced themselves of its feasibility, as, in the first place, the method of passing the sutures through the whole of the coats of the stomach and intestine is directly opposed to all rules of intestinal surgery of the present day. Dr. Senn, however, illustrates his paper with numerous cases in which he has operated in this manner successfully on dogs, under the most adverse circumstances; and, if his reports are to be relied upon, I see no reason why similar operations should not be performed upon the human subject.

These operations on the dead body are perfectly easy of performance, and the time occupied is not a tithe of that consumed in the ordinary operation. In any case I think the subject is well worthy the most careful consideration of surgeons who practise in this department.

A CASE OF INTESTINAL OBSTRUCTION TREATED BY LAPAROTOMY: RECOVERY: REMARKS.¹

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EMMA D., a housekeeper, aged 34, who had previously enjoyed good health, except for occasional dyspepsia, was suddenly attacked with intense abdominal pain immediately after an action of the bowels on the 8th of last November. With great difficulty she crawled up to bed, and when seen, half an hour afterwards, by Dr. Qualtrough, of Upper Holloway, was still complaining of very severe pain, persistent in character, but aggravated by frequently recurring paroxysms. There was neither tenderness nor distension of the abdomen. Pulse and temperature normal. Dr. Qualtrough gave her a hypodermic injection of morphine, and ordered her a little ice to suck, and a small quantity of milk and soda-water occasionally. Six hours later she vomited the half digested contents of the stomach. For the next four days, during which she was seen also by Dr. Kesteven, she remained in much the same condition. Vomiting occurred twice or three times each day; there was no action of the bowels, but flatus was passed. She still complained of considerable griping pain, and there was fullness of the abdomen, with slight tympanites; the temperature was not raised, and the pulse remained under 90. She presented no appearance of general illness, and said that, except for the pain, she felt well enough to be up. I first saw her on the 13th, five days after the commencement of the attack. She then looked rather pinched and anxious, and was becoming weak; the temperature was normal, and the pulse 85. Sickness had occurred several times during the day, and was increasing in frequency; the bowels had not acted, but flatus was still passed; the abdomen was distinctly, but only moderately, tympanitic; it was tender on pressure in the neighbourhood of the umbilicus.

On the 14th, after a consultation at which Mr. Thomas Smith, who had been previously sent for, was present, and who gave me his valuable assistance, I opened the abdomen in the middle line, below the umbilicus, and on following the small intestine—by tracing it onward from the distended loop which presented itself in the wound, and returning each three or four inches before another portion was drawn out of the wound—I came to a part that seemed fixed. Passing my finger along this, I could feel that a loop had slipped through a hole, apparently about three-quarters of an inch in diameter, in the mesentery. The mesentery in this spot seemed of normal thickness and pliability, and the edge of the opening was so yielding that I could readily stretch it with my finger-nail sufficiently to allow the loop of intestine to be drawn out. The loop was somewhat congested, and the lines above and below, at which it had been constricted, could be distinctly seen, but evidently strangulation had been only partial. The abdominal cavity, which contained a considerable quantity of blood-stained serum, was thoroughly sponged out with weak

carbolic lotion (1 in 80), and the wound was closed with China silk sutures.

After the operation the patient was allowed nothing by the mouth but small fragments of ice, amounting in the first twenty-four hours to less than two ounces. She was fed by the rectum, and kept slightly under the influence of morphine by hypodermic injections. A soft enema tube was passed about six inches into the rectum, and retained there to facilitate the escape of flatus. Twelve hours after the operation the pulse was 84, quiet and regular, and the temperature was 98.4° F. The patient occasionally ejected, without straining, a little bilious fluid. She was tranquil and free from pain.

November 14th. Pulse and temperature normal, tongue clean and moist, no abdominal distension, flatus passed freely from the tube in the rectum; no sickness. Diet: one teaspoonful of beef-tea or peptonised milk alternatively, every hour, and a little ice to allay thirst.

November 15th. A quiet but almost sleepless night. General condition as yesterday, but she was wasting quickly, and complained of intense thirst. To take food in rather larger quantities every hour.

November 16th. Very restless, and in great general distress; very prostrate. Was now frequently sick, ejecting bile-stained fluid. Pulse 100, temperature 101°. Had passed a small green motion, with severe griping pain referred to the umbilicus. At 7 P.M. an enema of warm soap and water was given. This produced a large evacuation of green-coloured soft faeces. The result was remarkable. Before the enema vomiting was frequent, and the patient was so exhausted that her case seemed hopeless, and it was thought that she would not live through the night. Directly after the bowels had acted she fell asleep, and slept quietly and soundly for three hours, and the vomiting entirely ceased.

November 17th. Abdomen distended. She complained of very severe griping pains, which made her grind her teeth. To be fed entirely by the rectum. A yellow evacuation was passed after an enema. She was very restless and thirsty.

November 19th. No vomiting or abdominal pain. Delirious at night; trying to get out of bed. Pulse 125, weak and running. She was very prostrate. To have two teaspoonfuls of beef-tea or milk every hour; rectal feeding to be continued. Hypodermic injection of morphine (one-sixth of a grain) about twice a day.

November 21st. Had a severe attack of retching and purging this afternoon. Was very weak, yet she looked better. Copious herpetic eruption about the mouth; aphthae on the tongue. The wound had, with the distended condition of the abdomen, reopened to the width of an inch and a half, and a coil of small intestine covered with granulations was exposed. The abdominal wall to be well supported with strapping and a bandage.

November 26th. Still very weak; frequent hiccough; much retching and diarrhoea. Skin covered with a bright red, very irritating eruption; great emaciation; tongue dry; pulse 120.

November 30th. Too weak to move in bed; hiccough continued; considerable distension of the abdomen; pulse 120; temperature 98°.

December 2nd. Much better; tongue moist; passed solid motions; retched only occasionally. Wound slowly closing; distension subsiding.

From this time she gradually recovered. By January 10th she was taking usual diet; the bowels acted naturally; the wound was nearly healed, and she was steadily gaining flesh and strength. She is now quite well.

REMARKS.—No clearer indication could be given of the progress of abdominal surgery than the doubt that at first presents itself, whether this case contains anything that qualifies it for publication. Numerous examples of completely successful operations, involving much more extensive interference with the intestines, have been reported; and thus, in some respects, this instance is commonplace. Yet I believe it should be recorded. In the first place, it is an example of recovery after laparotomy for internal strangulation. In this aspect it is now happily far from unique. Yet the list of such cases is much less extensive than it ought to be, and the instances in which a fatal result follows mechanical obstruction are much more numerous than they are destined to become when sufficient evidence has been collected to persuade those who still hesitate (a) that when symptoms which clearly point to the existence of mechanical obstruction are present, it is as incumbent on the surgeon to open the abdomen as it is to operate when there is reason to believe that an external hernia is strangu-

¹ Read before the East and West Sussex District of the South-Eastern Branch.

lated; (b) that the operation must be performed early; (c) that the risk which the operation involves is so comparatively small that it cannot be justifiably urged as a ground for delay.

Secondly, the case is of value because it illustrates and emphasises the fact that symptoms which till recently have been ascribed to peritonitis often depend on what may be called "secondary obstruction"—that is, on obstruction due to the paralysed condition of the gut at the point of injury. The recognition of this fact constitutes one of the most important advances that have lately been made in respect to cases of internal strangulation.

The mode of onset of the attack, and the symptoms observed in the first two or three days of the patient's illness, were of doubtful interpretation. The sudden onset of severe pain that followed the action of the bowels and the development of sickness were strongly suggestive of mechanical obstruction, but their meaning was obscured by the fact that flatus was freely passed, and that there was scarcely any distension or tympanites. Evidently if obstruction was present it was not complete. Another feature that increased the uncertainty of the case was that the patient, for the first two or three days, had the appearance of being in almost her usual health.

These apparently conflicting symptoms were explained and reconciled at the operation. There had been little distension, but persistent sickness, because the obstruction was in the small intestine—I think it was as high as the middle of the jejunum. The patient did not look pinched or collapsed, and flatus was still passed, because the opening through which the gut had slipped was placed in the mesentery, where that structure was too thin and membranous to produce complete obstruction, or even at first to cause any serious injury to the intestinal wall. But in the course of three or four days the continuance of sickness, the fact that no faeces were passed, the appearance of distinct though still moderate tympanites, and the gradually increasing distress of the patient forced the conclusion that mechanical obstruction must be present.

The operation itself was easily performed, as there was only slight distension of the intestine. It is now well understood that the state of the intestine in this respect is one of the most important points in regard to laparotomy for obstruction. Distension adds greatly to the difficulty of every stage of the operation. So far is this the case that in any instance of obstruction the amount of tympanites must always be taken fully into account. Few recoveries take place when it is considerable, and in any case in which operative interference is contemplated the increase of tympanites ought to be regarded as a warning against further delay.

I have had several opportunities of testing the value of searching for the obstruction, not by introducing the hand, but by taking the loop that first presents in the wound, and tracing it onward by drawing out three or four inches for examination and then returning them, so that no more than six inches are ever out of the wound at the same time. In this way the intestine may be traced upwards towards the duodenum, or downwards towards the ileum, till the obstruction is reached, with very little delay, and with no danger if the manipulation is gentle. If, having traced the gut up to the duodenum or down to the ileum—for he cannot tell with certainty in which direction he is travelling—he has found no obstruction, the operator must trace his way in the opposite direction, taking, however, very great care that he does not drop the loop and so break the continuity of his examination.

To relieve her as soon as possible from the discomfort and danger of gaseous distension, I availed myself of the practice recommended by ovariologists, of raising the patient's shoulders, so that she could the more easily expel flatus from the mouth; and I also introduced a soft tube about six inches into the rectum. Through this, for some hours, flatus continued to escape, to the great comfort of the patient. Both these expedients for removing gas from the intestinal canal should, I think, be adopted in cases of this kind.

The favourable manner in which she bore the operation was remarkable. When I saw her, about six hours afterwards, her pulse was 84, her temperature was normal, and she showed but small traces either of the operation, or of her previous illness.

The return of sickness on the third day after the operation, and the manner in which it was treated, deserve careful observation. It was due, I think there can be no question, to the fact that the piece of intestine that had been partially strangulated was still paralysed, so that the fecal material that was passed into it from above lodged, and so renewed the obstruction. It then became a question whether the intestine would recover its peristaltic

action, and so overcome the obstruction, or whether the obstruction would persist till death occurred from vomiting and exhaustion. It was when the patient's life was thus in the balance that the enema was given, in the hope that it might be the means—by unloading the lower bowel, reducing distension, and indirectly stimulating the flaccid piece of intestine into action—of restoring the patency of the canal. Fortunately this result was attained, and all the symptoms of obstruction disappeared, and did not return. When sickness, coupled as it is so likely to be, with increasing distension, returns in cases of this kind, three courses present themselves: 1. To give an enema; 2, to give an aperient by the mouth; 3, to fasten a distended loop of small intestine to the edges of the abdominal wound and open it. In the present instance the enema secured all that was required, and put an entirely new aspect on the case. Mr. Lawson Tait and others have shown the excellent result that may follow the use of aperients in intestinal distension following some cases of abdominal section, not directly involving the intestine. Aperients, however, must obviously be used with very great caution when obstruction depends on paralysis of the intestine after strangulation, for the condition of the gut at the seat of injury must be a matter of doubt, and the action of an aperient might be followed by perforation. To open the small intestine in the abdominal wound is a step that will avert death in some cases, and the damaged condition of the gut at the point of strangulation and the necessity for immediate relief from obstruction may fully justify its adoption. But it has some serious drawbacks. The patient is generally so exhausted that an anæsthetic, and the sickness which it may provoke, the reopening of the wound, and the necessary disturbance and exposure are each a source of danger. And there is also the highly important question whether, in the exhausted condition of the patient, and in the presence of vomiting, should this continue, safe union will take place between the intestine and the abdominal wall, so that there shall be no escape of faeces into the peritoneal cavity. There is the further point that we are unable to say what part of the intestine will present at the wound, and, therefore, that we cannot be sure that the opening may not be so high up as seriously to interfere with general nutrition. Which of the three alternatives should be adopted must depend on the circumstances of each case; but there is reason to hope that the timely use of an enema, when the symptoms of obstruction return after laparotomy, will often have a valuable effect—at least, it should be tried before anything more serious is undertaken.

When, in consequence of the weakly condition of the patient, the distension of the abdomen, and the retraction of the edges of the wound, the latter reopened, a coil of the small intestine was exposed over an area of nearly six inches in length by two in width. But no harm followed, for the peritoneum covering the gut had become united with that lining the abdominal wall, and the peritoneal cavity was safely shut off. In two other cases I have met with the same condition. In both, as in this instance, the wound gradually closed, and no intestinal protrusion occurred.

It was apparent at one time that the patient was suffering severely from the want of food. She wasted rapidly, complained of intense thirst, and was so prostrate that she could not move even her legs without assistance; her pulse was weak and thready, her face deeply wrinkled, her eyes dull, and her conjunctivæ congested. But the danger in this direction had to be incurred, for when she was allowed food by the mouth sickness at once returned, and would have been quickly fatal to her. The inability to take food by the mouth persisted till the ninth day after the operation.

JEJUNAL ENTERECTOMY FOR THE CLOSURE OF AN ARTIFICIAL ANUS OF EIGHTEEN MONTHS' STANDING: RECOVERY.

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THERE appears to be less hesitation in adopting the relatively severe measure of resection of the bowel in the treatment of abnormal intestinal openings than prevailed some time ago. Doubtless some of these conditions yield to simpler plans, such as pad and bandage, plastic operations of various kinds, the use of enterotome clamps and the like, but we have too