TWO CASES OF ENTEROSTOMY.

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CASE I. *Gastro-Enterostomy.*—A man, aged 50, was admitted into the Cancer Hospital on January 22nd, 1887, suffering from intense pain in the pyloric region, accompanied by most violent vomiting and retching shortly after taking food. He had experienced considerable pain in the epigastrium for more than two years; this had not increased very much until within the last few months, though he had from time to time vomited what he described as "coffee-grounds." He had had gastric fever two years ago; he had not been able to eat any solid food for over a twelve-month. In October, 1886, the pains in the epigastrium very much increased, so much so that he was almost afraid to take anything. In December he was seized with most violent vomiting, which lasted almost without intermission for three weeks, the vomited matter consisting of mucus, froth, and "coffee-grounds," and a substance which he described as being like green paint.

The pain continued to increase until his admission into the hospital, but the vomiting had nearly ceased, only occurring occasionally, and during his stay in the hospital before the operation there were no "coffee-grounds" present, the vomited matter consisting nearly entirely of the food he had taken, mixed with a little mucus. He had lost flesh very much of late, and was in such terrible pain that he begged to have something done to endeavour to relieve him. He at present suffered from great tenderness over the pylorus, and although there was no distinct tumour to be felt, yet on deep pressure there appeared to be a good deal of thickening, probably fibrous thickening, of the pylorus, possibly of a malignant character.

It was decided to perform laparotomy, with a view of making a more careful examination of the parts; accordingly, on February 6th, 1887, the patient being placed under the influence of ether, I proceeded to open the abdomen by a median incision extending for about three inches between the ensiform cartilage and umbilicus. The stomach and omentum were discovered to be in their normal condition, but the pylorus appeared to me to be abnormally thickened, and, there being no other cause present to account for the violent pain and vomiting, it was decided to proceed to perform gastro-enterostomy.

This was accomplished by pushing the omentum on one side and drawing out about four inches of the jejunum, at the same time withdrawing a portion of the stomach. These parts were supported all round by warm carbolic sponges. Two small apertures were made in the mesentery, close to the intestinal attachment, about three inches apart, and a piece of india-rubber tubing was passed through either opening and made to encircle the gut, thus preventing all circulation of the contents of the bowel. The loop of gut was now laid upon the portion of the stomach to be opened, and a longitudinal fold of the latter, about an inch and a half from the great curvature, was pinched up between the finger and thumb of the left hand, together with a corresponding piece of the gut.

I now cut through the serous and muscular coats of both the stomach and gut, and, still holding the parts between my left finger and thumb, I united the posterior edges of the wound by a continuous suture, the suture passing through the two outer coats of the divided viscera. In this way the serous surfaces were closely united from end to end before either viscus was opened; this row of stitches was carried about a quarter of an inch beyond the incision in the coats of the bowel. I next opened the stomach and intestine by dividing the mucous coat with scissors. All bleeding points were taken up and ligatured with fine catgut as divided. A small quantity of mucus and fluid escaped, which was caught in the sponges. After carefully cleansing the cut surfaces, I proceeded, by means of interrupted sutures of fine silk, to unite the anterior edges of the opening, adopting the Czerny-Lembert stitch. The opening was now securely fastened, but to make it more secure I inserted another row of sutures outside the first, and about an eighth of an inch from it; this row of sutures was introduced with great care through the serous and muscular coats only.

The parts were now dropped back into the wound, and the "toilet" of the peritoneum being complete, I closed the external wound, and replaced the patient into bed. The wound was dressed with iodoform wool.

The patient bore the operation fairly well, and passed a tolerably good night; there was very little retching, and he slept at intervals. He complained of a good deal of pain the next day in the epigastrium; the temperature remained normal. He was fed with enemata of peptonised beef-tea and brandy, and forty minims of liq. opii every four hours. As he complained of a sharp pain in the epigastric region, a hypodermic injection of morphine was given. All went on well until the 10th, three days after the operation, when the patient complained of pain and a feeling of nausea, and slight tenderness on pressure over the wound.

February 10th. Wound dressed for the first time; union appeared to be complete; at midnight of this day he complained of great pain, was slightly confused when awake, and began to vomit thick brown fluid of a most offensive odour; the vomiting lasted until 5 A.M., and at intervals all the next day. Half a pint of warm water, with Condry's fluid, was administered by the mouth and retained. Brand's essence, a teaspoonful every hour, was given. The vomiting now ceased, but the patient got gradually weaker, and died on the night of the 16th, rather more than ten days after the operation.

The *post-mortem* examination revealed that the union between the stomach and jejunum was perfect. There was no peritonitis, and no fluid had escaped from the junction of the intestine and stomach into the peritoneal cavity, notwithstanding the violent retching he had. The cut edges of the mucous membrane had quite united, and there was no other cause discoverable to account for the vomiting than the "kinking" of the gut, which caused all the biliary and pancreatic secretion to be pressed back into the stomach instead of passing by the natural channel.

There was a cicatrix of an old ulcer just at the pylorus, which was somewhat constricted and thickened, probably cicatricial stenosis, but there was no malignant disease. Possibly this was a case in which Loreta's method of dilating the pylorus might have been practised with advantage.

CASE II. *Case of Duodenostomy for Cancer of Pylorus. Death One Month after the Operation.*—E. W., a married woman, aged 43, eleven children, the youngest 9 months old. No history of cancer nor of phthisis in family; had had much domestic trouble. Patient was admitted into the Cancer Hospital on May 23rd, 1887. She had suffered considerable pain after eating since the birth of her last child nine months ago. During the last three months she had vomited after everything she had taken; during this period she had taken pills and aperients of different kinds frequently. The bowels were never open more than once a week. She vomited about half an hour after everything she took, food returning much as when swallowed; the vomit was very brown, and "all of a boil." Two weeks before admission it was of a very dark colour, like dark blood.

Present Condition.—The abdominal parietes are very atrophied, the movement of the intestines being quite plainly visible. The stomach is seen to be much distended, reaching nearly to Poupart's ligament. In the median line, occupying a position just above the umbilicus and slightly to the left, is a hard, nodular, freely movable growth, the size of a Tangerine orange, continuous with the dilated stomach. After a consultation with my colleagues, at the patient's urgent request that something might be done for her, it was determined to perform laparotomy with a view of attempting to remove the diseased mass, and failing that, either to perform gastro-enterostomy, jejunostomy, or duodenostomy.

On June 4th, the patient being placed under the influence of ether, I proceeded to make an incision about three inches long midway between the umbilicus and xiphoid cartilage. All bleeding points were stopped by pressure-forceps before opening the peritoneum; when this membrane was divided the mass of disease about the size of an orange presented itself in the wound. The mass was freely movable, and had contracted no adhesion whatever to surrounding parts. The disease extended about two inches along the lesser curvature of the stomach. The mesenteric glands were found to be enlarged, the lumbar glands free, the liver healthy.

Owing to the very exhausted condition of the patient on the table, and the state of the mesenteric glands, it was not deemed advisable to subject her to the major operation of pylorotomy, although it was scarcely conceivable to imagine a more suitable case so far as the disease was concerned. From the weight of the growth the attachments of the duodenum were much stretched so as to allow of the portion of gut just beyond the disease being easily drawn into the wound. This was done, and the duodenum

stitched to the parietes, the abdominal wound closed in the usual way, and the patient returned to bed.

The patient bore the operation very well and passed a good night.

June 5th. The patient comfortable; complained of thirst: to have small pieces of ice to suck; temperature normal; pulse 96; to be fed entirely by peptonised beef tea enemata.

June 6th. Complained of slight pain over epigastrium; abdomen soft and flaccid; no tenderness. Tongue moist and clean; temperature normal. The enemata had been administered in three-ounce doses every four hours, and the urine drawn off every six hours. She slept fairly well during the night.

June 7th. The bandage was removed, the wound looked quite healthy, and as the bowel seemed to be firmly attached to the parietes I made an opening into it with a tenotomy knife, large enough to admit a No. 14 catheter. Three ounces of peptonised beef-tea were injected into the duodenum and retained; this was ordered to be repeated every six hours. Abdomen quite flat; no pain; temperature normal.

June 9th. Removed stitches from abdominal wound; powdered starch ordered to be dusted over the abdomen around the opening into the gut.

The patient progressed favourably until the 13th, when the beef-tea returned through the wound shortly after being introduced, and there was a considerable flow of bile from the wound; five grains of sodæ carb. were now added to each injection of beef, and an ounce of port wine was ordered with each enema of beef-tea.

The patient's strength was well maintained; the temperature continued normal, and she was free from pain, but complained of great thirst. As the skin around the wound was looking red and inflamed, I ordered a powder consisting of equal parts of acid. boracic, powdered starch, and oxide of zinc; the parts to be washed at each feeding with carbolised water.

Fig. 1, representing the jejunum united to the stomach on the anterior aspect, the dotted line showing how the kinking may take place.

On June 14th, instead of the ordinary peptonised beef-tea, I substitute zymïn 3ss; with sodæ carb. gr. x. in a powder to be added to each injection of beef-tea. This powder answered admirably. The remainder of the stitches were removed.

June 16th. The patient vomited four porringersful of fermented fluid. This was evidently the collection of gruel, etc., she had been allowed to take the last few days. She was ordered to take nothing by the mouth in future. The stomach was washed out with a quantity of warm Condy's fluid and water, with much benefit. She seemed somewhat easier after this, but the stomach was enormously dilated, and distinct succussion was perceptible. The patient from this point gradually got weaker, and died on July 3rd, exactly one month after the operation.

Had this patient applied earlier, I have little doubt but what pylorotomy or gastro-enterostomy might have been practised with every chance of success; but, as I have said, she was so exhausted that an operation involving any great strain upon her strength would have been impossible. But there is no doubt that the operation performed gave her considerable comfort during the last few weeks of her life.

REMARKS.—The first of these two cases illustrates well how successfully a gastro-intestinal fistula may be formed so far as the union of the stomach and jejunum are concerned. It also suggests a few not unimportant modifications that, in my opinion, might be with advantage adopted. The vomiting that followed the operation was undoubtedly due to kinking of the jejunum just beyond the seat of union with the stomach, preventing the passage of the gastric and pancreatic fluids, and bile. The operation as performed in this case was planned as is usual, so as to bring up a loop of the jejunum as near its origin as possible, and fastening it to the anterior wall of the stomach (Fig. 1). This, of necessity, causes a great risk of the gut doubling upon itself at its efferent end. Now it appears to me that it would be far better to fasten the gut to the posterior wall of the stomach (Fig. 2). This can be done in one of two ways merely by turning the great omentum and colon up and dividing the transverse mesocolon, and thus drawing a portion of the stomach through the opening, and fastening it to the jejunum close to its duodenal origin, or by dividing the gastro-colic omentum in front, and fastening the posterior wall of the stomach to the anterior portion of the last portion of the duodenum. That these two operations would be attended with slightly more difficulty than the operation at present adopted there can be no doubt; but the advantages to be derived are so obvious, that I think the extra trouble would be well repaid.

I would here draw attention to the practice of Dr. Senn, of Milwaukee. He has made numerous experiments on dogs, and adopted the following plan. Instead of stitching the stomach and intestine together, after the Czerny-Lembert method, which he justly says is most tedious, and prolongs the operation considerably, he provides himself with two plates of decalcified bone about two inches in length, an inch in width, and a quarter-of-an inch thick, with a longitudinal opening in the centre five-eighths of an inch long by one-sixth of an inch wide. Four perforations for the sutures are made near the margin of the oblong perfora-

Fig. 2, representing the jejunum united to the stomach on the posterior aspect, the dotted line representing the union behind the stomach.

tion, one at each end, and one at each side. The sutures are attached to these plates by threading two fine sewing needles each with a piece of aseptic silk, twenty-four inches long, which are tied together. The threads are then fastened to the surface of the plate by another thread passing through the perforation in the shape of a loop, and fastened to the back.

The stomach being drawn forward into the wound, a longitudinal incision is made in the anterior surface, and the perforated disc of bone introduced. The lateral sutures armed with needles are now passed through the entire thickness of the walls of the stomach, half way between the angles of the wound. A similar incision is now made into the intestine at the junction of the duodenum and jejunum. The second plate of bone is introduced, and the margins of the wound punctured by the lateral armed sutures when the two wounds are brought *vis à vis*, and the corresponding sutures tied. The serous surfaces of the stomach and intestine over an area corresponding to the size of the plates are then brought into accurate permanent contact by the tying of the sutures. The animals he operated upon recovered, notwithstanding they were allowed to eat immediately after the operation, and the diet was not selected or restricted.

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 morphia, 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 morphia 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 morphia (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.