ment short of resection of the useless and dilated loop, as was so brilliantly carried out by Treves.

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THE AFTER-HISTORY OF PATIENTS UPON WHOM GASTRIC OPERATIONS HAVE BEEN PERFORMED.

[SECOND SERIES.]

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IN the BRITISH MEDICAL JOURNAL of February 20th, 1904, I published an account of the subsequent history of eighteen patients upon whom I had operated for various affections connected with the stomach prior to the end of 1902, and whose cases I had been able to trace. The object that I had in view was to collect and record, not the immediate results of these operations, which are sufficiently well known already, but those that follow later, after the patients have returned to work and to their ordinary diet and mode of life; to find out whether the relief they obtained was permanent, or whether the improvement that followed the operation may not have been merely of a temporary character, due, perhaps, quite as much to the rest in bed, and quiet, and good feeding as to the operation itself. I propose now to continue the series with the cases operated upon in 1903, as the time that has elapsed, though not so long as in most of the previous ones, is long enough to show whether the benefit obtained is likely to last or not. The question is one of great importance, especially in connexion with gastro-enterostomy, which is regarded by many as more or less upon its trial. It is acknowledged that very great relief is obtained in many cases; but on the other hand, it is asserted that in many the old symptoms persist; that in some new lesions are caused in the shape of peptic ulcers in the bowel below; and that there is no certainty that the artificial opening will not contract. (In connexion with this I may mention that I have recently seen a specimen taken *post mortem* from a patient upon whom gastro-enterostomy had been performed twelve years before, and who had died from some trouble in no way connected with the stomach, in which the artificial communication was as perfect as could be wished and apparently had performed efficiently all the duties required of it.) As might be expected in an inquiry of this kind, a considerable number of the patients cannot be traced. Still, out of twenty-nine operated upon in 1903 (excluding all cases of carcinoma and those in which perforation had taken place already), I have been able to obtain a record of twenty-four.

The questions asked were the same in all. Have you any pain after meals? If so, is it severe? Are you often sick? Have you brought up any blood since the operation? Is your general health better than it was?

In forming an estimate of the value of gastro-enterostomy and pyloroplasty in cases of unperforated gastric ulcer, one point that is not usually taken into consideration is the question how much is it reasonable to expect of them? This depends partly upon the extent of the changes that have already been allowed to take place in the stomach, partly upon the opportunity the patient may have in the future for avoiding the causes that led to those changes. If the ulceration has been allowed to continue for many years without any effective treatment, so that instead of there being merely a single limited lesion the stomach is reduced to the condition of an irregular misshapen sac, distorted by cicatrices and hampered in every direction by adhesions, it is not reasonable to expect that the formation of an artificial opening into the bowel could restore everything to its normal state, nor is it reasonable to expect that patients who have suffered from severe dyspepsia for years before the formation of the ulcer will henceforth be freed from all pain and inconvenience, unless at the same time they avoid the causes that led to their dyspepsia.

It sounds a trite thing to say, but apparently it is often forgotten, that if the conditions of living after the operation remain the same as they were before, the consequences will

be the same, except in so far as the stomach is able to empty itself more rapidly and more thoroughly into the bowel. All that surgery can do is to enable the stomach to pass its contents on rapidly and without effort; to drain it thoroughly and give it rest; and to prevent its dragging violently and painfully upon the intensely sensitive parietal peritoneum around it. Neither gastro-enterostomy nor pyloroplasty claims to be a panacea, or an operation that can undo the mischief caused by years of inefficient treatment, especially when the conditions that gave rise to that mischief are allowed to continue at work unchecked. They must be judged by the results they give in cases which are operated upon before they have reached the hopeless stage so freely illustrated in our museums.

Taking these 24 cases in conjunction with those which I have already published, it appears to me that there is sufficient evidence to form at least a provisional opinion as to the permanent relief afforded by this operation.

Pyloroplasty (of which the first three in this series are examples) can only be regarded as a very qualified success. The pain returned more or less in all the cases. The scar left seems to have contracted again. It is a great pity, for the operation is a most ingenious one, is easy of performance, and takes but a very short time; but in my own mind there is no doubt that it should be reserved for cases in which the condition of the patient will not allow anything more to be attempted, and perhaps for those in which the chief feature is hypertrophy of the pyloric muscle. Free division of this muscular band, causing complete cessation of contraction for a time, may possibly lead to a sufficient degree of wasting to prevent any recurrence of the stenosis.

With regard to the twenty-one cases of gastro-enterostomy, twelve may be regarded as cured and five as very much benefited by the operation. But the true result is better than this, for, of the latter, several are as well as they could ever expect to be under the conditions of the life they lead. No. 16, for example, so long as she lives in the country, has only light work to do, and is reasonably careful as to diet, is perfectly well. But, unfortunately, this is not always possible, and the result is a relapse. So it is with others. The attacks of pain from which they occasionally suffer are brought on by some definite cause, of which by far the most common is indiscretion in diet. They cannot grasp the fact that the causes which led to the formation of the ulcer before the operation will, if they are allowed to continue at work, lead to trouble again, in spite of the operation. Gastro-enterostomy cannot confer upon the stomach greater digestive power than it possessed before the patient was ill at all. Two patients in whom no definite lesion was found—no ulcer and no scar—have not benefited in the least. What may have been the cause of their symptoms I cannot tell. Apparently it was not gastric ulcer, and the diagnosis, not the operation, is to blame. The remaining two are very perplexing. One, the last on the list, a martyr to some form of progressive osteo-arthritis, is gradually growing weaker and weaker for no known cause. Vomiting before the operation was incessant. The pylorus would hardly admit a probe. For a time there was considerable improvement. Then the patient gradually began to fail, growing weaker and weaker, with attacks of occasional vomiting and pain, but not sufficiently frequent or severe to account for the failure. The other was an exceedingly complicated case, in which laparotomy had already been performed, and in which there was good reason for thinking that the disease was not confined to the stomach.

The posterior transmesocolic operation was performed whenever practicable, but so far as the stomach is concerned, it seems to be immaterial whether the opening is made upon the anterior or the posterior wall. In either case it soon becomes the most dependent part. In addition to the gastro-enterostomy, in all but two a lateral communication was made as well between the contiguous sides of the jejunal loop. I have adopted this plan for the last four years, and I have never had the slightest trace of what is known as the "vicious circle." Indeed, it is impossible to understand how such a condition of things could be produced. The additional operation takes a very short time, and it is a great safeguard against the possibility of the rest of the small intestine ascending through the opening in the transverse mesocolon and lodging itself in the lesser peritoneal cavity, a complication which has been stated to occur occasionally after this method of operation. In several instances in which the patients were suffering from chronic starvation, I have made use of the opening in the jejunum to introduce a pint

No.	Name.	Sex and Age.	Date.	Condition, etc.	Remarks.
1	A. R.	F., 30	Oct. 3, 1903	Haematemesis five years before. Stomach dilated. Pyloroplasty. Patient discharged on October 31st with the note that the stomach, the walls of which were more or less atonic, did not appear to empty itself so well as it would have done through a gastro-jejunostomy	Recurrence of very severe pain at times. Patient recommended to come into hospital again for gastro-enterostomy.
2	H. H. R.	M., 30	Oct., 1903	History of indigestion for years past: of frequent vomiting, and of an attack of haematemesis and melaena. Pylorus thickened, contracted, and fixed by adhesions. Pyloroplasty	Had a little pain some time ago, but not severe. Has twice brought up some blood. Is not sick. General health much better.
3	A. M.	F.	Nov., 1903	Haematemesis on two occasions. Vomiting frequent for nine months. Cicatricial stenosis of pylorus. Pyloroplasty	Was much better after the operation, until two months ago. Then pain and vomiting returned for some weeks. Is much better again now. Has not brought up any blood since the operation.
4	A. P.	F., 33	Jan. 13, 1903	Severe pain for many years. Copious vomiting. Haematemesis on one occasion. Chronic ulcer at pylorus with many adhesions and enlarged glands in mesentery. Posterior gastro-jejunostomy with lateral anastomosis	Had improved very much until six months ago, when she was confined. Since then has had severe pain after meals. Is never sick. General health much better than it was.
5	A. L.	F., 31	Mar. 29, 1903	History of continued dyspepsia with two attacks of haematemesis. Slight dilatation of stomach. Recent erosion at cardiac end. Anterior gastro-jejunostomy	Complains of a "slight rather heavy feeling after meals." Is sick on an average once in three months. Has not brought up any blood. General health better.
6	A. R.	F., 27	April 15, 1903	Two attacks of haematemesis. Pain beginning two hours after food, relieved by vomiting. Cicatricial contraction at pylorus. Posterior gastro-jejunostomy with lateral anastomosis	Sometimes suffers from pain after meals, but it is never severe. Is not sick, and has not brought up any blood. Very anaemic still.
7	A. P.	F., 28	May 25, 1903	Severe indigestion for fifteen years. Pain very severe of late half an hour after food. Slight haematemesis once. Pyloric stenosis. Posterior gastro-jejunostomy with lateral anastomosis	No pain now and general health very much better. Has had two attacks of pain and sickness brought on by indiscretion in diet. Feels much stronger in every way.
8	S. M.	F., 33	May 13, 1903	Pain and vomiting for four years, growing more severe. Haematemesis once. No ulcer or scar found. Posterior gastro-jejunostomy with lateral anastomosis	Symptoms returned about October. Suffers from pain and sickness. Once brought up a little blood. Is better when she can keep in bed.
9	A. C.	M., 37	May, 1903	Severe pain after meals, occasionally relieved by vomiting. No haematemesis or melaena. Stomach dilated. Thickening around pylorus. No scar or ulcer. Posterior gastro-enterostomy with lateral anastomosis	Suffers from severe pain at times. Is not often sick. Has not brought up any blood. General health only slightly better.
10	L. L.	M., 25	June, 1903	Frequent vomiting. Severe haematemesis on several occasions. Pain not severe. Deep crater-like ulcer on the anterior surface of the stomach near cardiac end of lesser curvature. Anterior gastro-jejunostomy with lateral anastomosis	Suffers from a heavy feeling after meals, but does not call it pain. Has been sick, but not for the last four months. General health very much better than it was.
11	E. B.	F., 50	June 18, 1903	History of indigestion and vomiting for many years. Seven weeks before admission is reported to have brought up twelve pints of blood. No tumour to be felt. Old scar upon wall of stomach near pylorus. Excised. Anterior gastro-jejunostomy with lateral anastomosis lower down	No pain. Has been sick once, due to the food taken. Health better than it has been for seven years. Has put on a stone in weight.
12	S. R.	F., 45	July 4, 1903	Pain after food for many years, relieved by vomiting. Haematemesis and melaena two days before admission. No tumour. Old, densely-indurated scar occupying lesser curvature of stomach. Excised. This affected the shape of the stomach so much that it was thought advisable to perform a posterior gastro-jejunostomy as well. No lateral anastomosis was made	Has severe pain sometimes under right shoulder. Is sick every three or four days. Has not brought up any blood. General health better.
13	J. P.	M., 36	Sept., 1903	Dilated stomach, with copious vomiting. Old ulcer, with adhesions about pylorus. Posterior gastro-jejunostomy, with lateral anastomosis	No pain whatever. Is sick occasionally, but not like he used to be. General health a great deal better.
14	M. K.	F., 50	Sept. 29, 1903	Haematemesis twice eight years before, with continuous pain and frequent vomiting since. Hard mass to be felt between umbilicus and ensiform cartilage. Stomach dilated. Dense, hard scar, involving lesser curvature and pylorus, with a great deal of infiltration. Posterior gastro-jejunostomy, with lateral anastomosis	No pain after meals. Is never sick. Has never brought up any blood. General health "much better than it was before the operation."
15	M. H.	F., 42	Oct., 1903	History of pain after food relieved by vomiting, and of haematemesis and melaena on several occasions. Laparotomy had already been performed at another hospital. Numerous adhesions, especially to transverse colon and on posterior surface of stomach. No ulcer found. Anterior gastro-jejunostomy and lateral anastomosis. During convalescence suffered from repeated attacks of vomiting which bore no relation to meals. An hour after food had been taken patient would bring up large amount of fluid, which did not show a visible trace of the last meal	A few weeks after operation a faecal fistula formed, which closed spontaneously. Some months later a gastric fistula developed, so large and so direct that dressings of considerable size found their way into the stomach (? were forced in by patient) and were vomited. This was closed by operation. Later a small faecal fistula again developed, but this one, too, closed of itself. Patient writes: "I am much better, and able to take more food without so much sickness." (February, 1905.)
16	L. R.	F., 23	Oct. 30, 1903	History of six years' duration. Incessant vomiting with severe pain for the last four months. Old scar puckering up lesser curvature. Omentum adherent to scar, and tying down the stomach into an hourglass shape. Posterior gastro-jejunostomy with lateral anastomosis	Up to last July had felt better than she had done for years. Since then has been much overworked, and has suffered from pain after meals, but it is not severe. She is never sick and her general health is certainly better.
17	C. L.	F., 36	Nov. 9, 1903	Pain and vomiting for fifteen years, becoming worse. No haematemesis but probably melaena. Has been living on peptonized milk. Stomach contracted into hourglass shape from a scar involving lesser curvature. Anterior gastro-jejunostomy was performed as the stomach was so tied down. Lateral anastomosis also	"Since the operation I am really much better in health than I have been for the last ten years. I have very little pain or sickness, and am able to enjoy my food, which is a wonder to me at times, considering the years I suffered before I went to hospital."
18	M. G.	F.	Nov., 1903	For last six years severe pain, relieved by vomiting at first, constant now. No haematemesis. Cicatricial stenosis of pylorus. Posterior gastro-jejunostomy with lateral anastomosis	Has no pain after meals, but is sick occasionally. Has not brought up any blood. General health much better than it was.

No.	Name.	Sex and Age.	Date.	Condition, etc.	Remarks.
19	J. B.	M., 42	Nov., 1903	Very severe haematemesis and melaena on many occasions. Pain very severe. Has lost 2 st. in weight. Large hard mass at cardiac end of lesser curvature with many enlarged glands. Doubtful whether malignant or not. Posterior gastro-jejunostomy with lateral anastomosis	"Is able to digest his food, which he could not do for fifteen years." Has not been sick or brought up any blood since the operation. Suffers from much distension for two hours after meals. Feels better than he did, but is too weak to do any work. Much troubled by bronchitis.
20	W. R.	M., 50	Nov., 1903	Severe pain after food, relieved by vomiting. Brought up blood once. Slight dilatation of stomach, with old scar at cardiac end of lesser curvature. Posterior gastro-jejunostomy with lateral anastomosis	Is quite a different man since the operation. Enjoys any food without the least pain, and has never been sick.
21	G. B.	M., 43	Nov., 1903	Profuse haematemesis twice. Severe pain after food. Has lost 2 st. Old gastric ulcer, with much induration on lesser curvature. Posterior gastro-jejunostomy with lateral anastomosis	No pain after meals. Never sick. General health very good.
22	E. A.	M., 58	Nov., 1903	History of ulcer of stomach for 9 years. Large mass at pylorus adherent to anterior wall of abdomen. Anterior gastro-jejunostomy with lateral anastomosis	No pain. Never sick. Has put on 1½ st. The mass can no longer be felt.
23	E. B.	F., 24	Nov., 1903	Six years' constant pain after food. No vomiting, melaena, or haematemesis. Hourglass stomach with adhesion to anterior wall. Posterior gastro-jejunostomy with lateral anastomosis	Free from pain if careful about diet. Is much stouter. Has married since.
24	E. H.	F., 28	Nov., 1903	Persistent vomiting after food for six months. Greatly emaciated. Dilated thin-walled stomach with nodular cicatricial pylorus. Same operation	Patient, who was suffering from a peculiar form of osteoarthritis, improved very much for about a year, and then began to fail again, with occasional attacks of pain and vomiting; cause uncertain.

of peptonized beef-tea into the bowel during the course of the operation with much benefit. As regards the position of the opening in the wall of the stomach, in many cases there was no option. It had to be made where it could. But it is very significant that some of the cases in which, owing to the force of circumstances, it had to be made quite at the cardiac end did the best, so far, at any rate, as freedom from pain is concerned. The pain felt in dyspepsia and gastric ulcer is not due to the contact of the food with the lining membrane of the stomach, for this is quite insensitive, nor to the increased acidity of the gastric juice, but to the movement of the stomach during digestion dragging upon the parietal peritoneum, the exquisite sensitiveness of which is still further increased (in cases in which there is an ulcer) by irritation spreading to it from the ulcer along the lymphatics. If pain is to be avoided after gastro-enterostomy, the opening in the stomach must either be at the cardiac end, and very free, so that the pyloric end has no work to do; or if it is placed at the pyloric end, there must be for the same reason free division of the circular muscular fibres in the prepyloric portion. In either case adventitious adhesions, the result of past inflammation, must be dissected away, or the stomach will continue to drag through them upon the parietal peritoneum, and the pain will continue.

THE VALUE OF THE VERMIFORM APPENDIX IN THE TREATMENT OF ULCERATIVE AND MEMBRANOUS COLITIS.

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AN opening into the caecum has been advocated in cases of chronic membranous colitis, with a double view. In one of the earliest published instances¹ all the motions were passed through the artificial anus for six weeks, so as to give the colon complete rest; the opening was then successfully closed. The patient, however, died two months later from acute peritonitis, the cause of which was not ascertained, as there was no *post-mortem* examination. In a still earlier case, operated upon in 1894,² the caecal anus was left open for over seven months, the patient recovering. In a third case, which also ended successfully, the opening was retained for a year.

The other object with which the surgeon makes an opening into the caecum is to flush the colon through with saline, antiseptic or astringent solutions. Seeing that the inflammation is usually limited to the colon, this is a thoroughly rational proceeding, especially as there is marked decomposition and often suppuration. The drawbacks of a caecal anus are well known. If a colotomy opening in the sigmoid flexure is regarded by some patients as an intolerable nuisance, how much worse is an artificial anus in the right groin! The more

fluid contents of the caecum are constantly being evacuated and are likely to cause much irritation of the skin. The opening into the intestine may be difficult to close when the time comes for this to be done.

If the surgeon employs the vermiform appendix for irrigation purposes, he will find that it possesses the following advantages. In the first place, all leakage of caecal contents can be avoided. Secondly, by means of a rubber catheter inserted and retained in the appendix, the washing out of the colon can be done in an efficient and cleanly way. Finally, it is quite easy by resection of the appendix to close the fistula when the treatment has accomplished its object.

It is difficult to decide who originated the method. Mr. Stanmore Bishop, in reporting a successful case,³ attributes it to Weir of New York. My colleague, Mr. H. L. Barnard, who suggested it to me, believed that Mr. W. G. Spencer was the originator of the modification, which is undoubtedly an improvement on the old method of opening the caecum.

The following case may be briefly narrated in the hope that others will test the value of the proceeding.

A man, aged 36, was admitted into the London Hospital with the diagnosis of malignant disease of the colon.

History.

For a long time he had complained of constipation, which he attributed to his sedentary occupation. During the last twelve months he had lost weight to the extent of several pounds, and had noticed that excessive mucus and later blood had passed with his motions. A sudden desire for an evacuation would come on, which had to be immediately complied with; from time to time there was tenesmus. During the last six months blood had been present with each motion. There was a tendency to haemorrhoids, the rectum was ballooned. In the left iliac fossa I detected nodular thickening along the course of the sigmoid flexure. Nothing abnormal could be felt in the rest of the abdomen. The motions were always fluid and offensive, and contained blood and mucus, with copious shreds of membrane, which were shown by microscopic examination to consist of cellular and epithelial structures.

Operation.

In order to exclude the presence of a malignant growth, I made a median exploratory incision. A small opening was made through the muscles in the right groin; through it the vermiform appendix (which was normal and free from adhesions) was brought on to the surface. It was here fixed at its base by fine silk sutures; it was opened at its distal end and a rubber catheter inserted into its lumen. The other abdominal wound was then closed layer by layer in the usual way.

Treatment by Astringent Irrigation.

The operation was performed on November 11th, 1904, and four days later irrigation was commenced through the tube. Warm boracic solution was at first employed, then nitrate of silver lotion of a strength varying from a quarter to two grains to the ounce. The dresser to the case, Mr. Burne Jones, carried out this treatment daily until December 24th, when it was thought it would be safe to discontinue it. At first blood had been freely present, but this gradually disappeared. It will be understood that a large quantity of the astringent solution was used on each occasion; it came away per rectum about five minutes after starting the irrigation.

On December 28th, that is, seven weeks after the first operation, I