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THE IMMEDIATE AND LATER RESULTS OF GASTROJEJUNOSTOMY FOR NON-MALIGNANT LESIONS OF THE STOMACH OR DUODENUM.

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By R. P. ROWLANDS, M.S.,

AND

HERBERT FRENCH, M.D.

Introduction.

The cases recorded in this paper embody all those that could be found in the Guy's Hospital Ward Reports up to the year 1905. They were collected together, and as many of the patients as possible were traced, with the object of ascertaining the late results of the operation, as a contribution by one of us to a special discussion on the subject at the Royal Medical and Chirurgical Society, in November, 1906.

The results are mainly of historical interest, and should not be taken too seriously as a measure of either the immediate or late results of gastrojejunostomy at the present time. Even in the last two years great improvements have been made in the technique of the operation; moreover, the general and local conditions of the patient are not allowed nowadays to deteriorate to a very low ebb before surgical treatment is adopted.

It must not be thought that the past results at Guy's Hospital have been either better or worse than those at other large hospitals which are situated in the midst of the London poor; the statistics brought forward at the above discussion proved this.

There can be little doubt that the greater the experience of the operator in gastric surgery, and the better the status of his patients, the more favourable will be his results. For these reasons, statistics based upon the work of picked surgeons are of less general utility than are those derived from a large hospital, in which the operations are performed by many different surgeons upon consecutive cases in whom the operation is only decided upon after consultation and great deliberation. The truth probably lies between the rosy picture drawn by a few surgeons of special experience and the more gloomy one below. When the Guy's Hospital statistics for the decade 1906–1915 are collected they will be much more favourable than those given here; but in the history of gastrojejunostomy the earlier results must necessarily be of value. It has been by studying the causes of failure in some of the earlier cases that physicians have recognised the wisdom of operating comparatively early in suitable cases, and surgeons have devised great improvements in the technique of the operation. (*Vide* p. 203.)

The following record must be regarded, therefore, as only applying to the results obtained in hospital practice previous to 1905; it will at least serve as a basis of comparison with a similar and much more favourable record that may be published in ten years time.

THE CASES.

The following are notes of the forty-seven cases that can be found in the Hospital Ward Reports up to 1905, arranged in groups according to the result:—

A. *Cases of Gastrojejunostomy for Non-malignant Conditions of the Stomach, in which death resulted within a fortnight of the operation.*

Case 1.—Male, aged 28, admitted in April, 1895. The history was indefinite, except that there had been no hæmatemesis, and that for seven weeks there had been repeated vomiting of large quantities of fluid food.

The man was very thin. A lump was felt at the pylorus. This was thought to be carcinoma, so laparotomy was performed, and a posterior gastro-jejunostomy by direct suture done. The patient died six days later of exhaustion. At the autopsy there was no peritonitis; the lump was not carcinoma, but a chronic simple ulcer with much matting, and partial stenosis of the pylorus.

Case 2.—Male, aged 46, admitted in April, 1897. Two months previously he had swallowed two ounces of spirits of salts; he recovered from this, but soon after symptoms of pyloric obstruction set in. He was repeatedly sick every day. Anterior gastrojejunostomy was performed, a Murphy's button being used; vomiting was worse after the operation than it was before, and the patient died exhausted on the fifth day.

Case 3.—Male, aged 52, admitted in January, 1898. There had been no trouble till twelve months previously, when persistent vomiting and signs of pyloric obstruction with dilated stomach set in. There was never hæmatemesis nor melæna. At the operation fibrous stenosis of the pylorus was found; posterior gastrojejunostomy, with Halsted's method of suture, was performed. The patient did not gain strength after this, but sank and died on the thirteenth day. At the autopsy all the organs seemed healthy; there was no obvious dilatation of the stomach, no peritonitis, and no real obstruction to the pylorus.

Case 4.—Male, aged 42, admitted in September, 1899. He had a fibrous cicatrix of the pylorus. Posterior gastrojejunostomy was performed, a Murphy's button being used. The patient died of shock within twenty-four hours.

Case 5.—Female, aged 51, admitted in September, 1900. She was found to have a cicatrising ulcer of the pylorus. Gastrojejunostomy was performed, a Murphy's button being used. The patient died on the sixth day of general peritonitis. At the autopsy it was found that no union between stomach and jejunum had taken place; the button was free within the stomach.

Case 6.—Male, aged 43, admitted in November, 1900. He was found to have a cicatrising pyloric ulcer. Anterior gastrojejunostomy by direct suture was performed. The patient died on the ninth day of syncope. At the autopsy it was found that the jejunum had become doubled round a peritoneal band.

Case 7.—Male, aged 67, admitted in January, 1902. He was found to have a cicatrising and leaking pyloric ulcer. Anterior gastrojejunostomy was performed, a Murphy's button being used. There was continual vomiting after the operation, and pneumonia supervened. The patient died on the thirteenth day. At the autopsy the button was found in the duodenum.

Case 8.—Male, aged 46, admitted in June, 1902. He was found to be suffering from peri-pyloritis. Anterior gastrojejunostomy by direct suture was performed. The patient developed broncho-pneumonia, and died on the fifth day.

Case 9.—Male, aged 42, admitted in February, 1903. He was found to have a cicatrised pyloric ulcer. Posterior gastrojejunostomy by suture was performed. Vomiting after the operation was so extreme that a second operation was performed next day, and jejunostomy done. The patient died the day after. At the autopsy there was no peritonitis, and no obvious obstruction to the bowel.

Case 10.—Female, aged 25, was admitted in March, 1904, for dilated stomach, and apparent pyloric obstruction. At the operation the trouble was found to be due to a cicatrising duodenal ulcer. Posterior gastrojejunostomy by means of a Murphy's button was performed. Symptoms of acute peritonitis set in on the second day, and the patient died on the third day after the operation. At the autopsy the gastrojejunostomy was found to be all right, but the duodenal ulcer had itself perforated and caused the peritonitis.

Case 11.—Male, aged 47, was admitted in January, 1905, for traumatic cicatrix of the pylorus. Antero gastrojejunostomy was performed by means of a Murphy's button, and entero-enterostomy was done at the same time. The patient died of shock and collapse on the third day.

Case 12.—Female, aged 44, was admitted in November, 1902, for excessive and repeated hæmatemesis. Anterior gastrojejunostomy was performed by means of a Murphy's button. The hæmatemesis persisted after the operation as badly as before; a second operation was performed, gastrotomy done, and search made for the bleeding point. The patient died on the sixth day exhausted and blanched from further hæmorrhage. At the autopsy the intestines were full of blood; the stomach contained no ulcer, nor could any erosions or other abnormality be seen.

Case 13.—Male, aged 18, was admitted in January, 1905, for repeated hæmatemesis and blanching. Anterior gastrojejunostomy by means of a Murphy's button was performed. When the stomach was opened general oozing from the gastric mucosa was seen, but no ulcer. The patient died on the second day collapsed from further hæmorrhage. At the autopsy the intestines were full of blood; there was no ulcer; on careful searching multiple minute hæmorrhagic erosions were found in the gastric mucosa.

B. *Cases of Gastrojejunostomy for Non-malignant Conditions of the Stomach in which Recovery from the Operation occurred, but in which no Relief to the Symptoms Resulted.*

Case 14.—Male, aged 53, was admitted in October, 1895. He had been quite well till February, 1891, when he first had severe epigastric pain lasting on and off for four months. At that time he had neither hæmatemesis, melæna, nor vomiting. In December, 1894, the pains recurred; a week later he brought up three pints of vomit containing altered blood. Since then he had had copious vomiting at intervals; as much as sixty-eight ounces were measured at a time. On November 12th, 1895, posterior gastro-

jejunostomy by means of a Murphy's button was performed. The diagnosis of cicatrised pyloric ulcer was confirmed. He passed the button *per rectum* on December 6th. The vomiting persisted after the operation, occurring on November 13th, December 2nd, 6th, 12th, 13th, and 23rd, in hospital, and at similar intervals since discharge.

Case 15.—Male, aged 36, was admitted in March, 1902, for symptoms which suggested perigastric adhesions. He had previously been successfully operated upon for perforated gastric ulcer. Posterior gastrojejunostomy was performed. It is not stated whether a Murphy's button was used or not. No relief to his symptoms followed the operation.

Case 16.– Female, aged 40, was admitted in August, 1903, for the usual symptoms of pyloric obstruction. Gastrojejunostomy was performed by means of a Murphy's button. It is not stated whether the gastrojejunostomy was anterior or posterior. The diagnosis of cicatrising ulcer of the pylorus was confirmed at the operation. There was no relief to the symptoms even at the time, and the patient died of exhaustion six months later.

Case 17.—Female, aged 45, was admitted in March, 1905, for the usual symptoms of pyloric obstruction. The diagnosis of cicatrising gastric ulcer was confirmed at the operation. Posterior gastrojejunostomy by means of a Murphy's button was performed. The symptoms persisted after the operation as badly as before.

Case 18.—Female, aged 40, was admitted in March, 1905, for the usual symptoms of pyloric obstruction. The diagnosis of cicatrising gastric ulcer was confirmed at the operation. There were extensive perigastric adhesions, and great dilatation of the stomach. Posterior gastrojejunostomy by means of a Murphy's button was performed. On discharge the dilatation of the stomach was no less than before the operation, and the symptoms persisted as before.

Case 19.—Female, aged 42, was admitted in June, 1902, for the usual symptoms of pyloric obstruction. At the operation the diagnosis of cicatrising gastric ulcer was confirmed. The stomach was moderately dilated. Posterior gastrojejunostomy by means of a Murphy's button was performed. There was no relief to the symptoms after the operation, and the patient died five months later of exhaustion. At the autopsy the cicatrised ulcer was found to have nearly, but not quite, occluded the pylorus; *the gastrojejunostomy opening had become completely closed by cicatrisation*, and the Murphy's button was free inside the stomach.

C. *Cases of Gastrojejunostomy for Non-Malignant Conditions of the Stomach in which Recovery from the Operation occurred, with Relief for a short time, but subsequent Recurrence of the former symptoms.*

Case 20.—Male, aged 47, was admitted in March, 1900, with all the symptoms of dilated stomach from pyloric obstruction. The trouble began

eighteen months previously, when he first suffered from acute epigastric pains, which were worst one hour after meals, but lasted as much as six or eight hours after the last meal of the day, so that he was kept awake at night. Later he vomited copiously two or three times a week. He had had no hæmatemesis, and had noticed no melæna. At the operation a chronic duodenal ulcer was found, and a much dilated stomach. Anterior gastrojejunostomy by means of a Murphy's button was performed. There was great relief for a short time, but, within a month of his discharge, the symptoms were all back again. He was re-admitted in September, 1900, but declined further operative measures, and was discharged two days later *in statu quo anteâ*.

Case 21.—Male, aged 43, was admitted in March, 1903. Fifteen years previously he began to suffer from acute epigastric pains after food, relieved by vomiting. He had had neither hæmatemesis nor melæna. For one and a half years he was quite unable to work; he attended as an out-patient, and ultimately, by careful dieting and medicinal treatment, became quite well, and for thirteen years had no return of the symptoms, and was able to work hard. In 1902 vomiting and pain recurred; a gastrojejunostomy was performed, and the diagnosis of pyloric cicatrix confirmed. Slight relief followed, but then the symptoms all recurred, and grew worse and worse. When seen in 1903, five months after the operation, he could not stand up straight on account of the pains in his abdomen, and there was a large ventral hernia of the scar, which bulged extremely on coughing. It was decided that nothing more could be done.

Case 22.—Female aged 36, was admitted in February, 1904, for the symptoms of cicatrising ulcer of the pylorus. The diagnosis was confirmed at operation. Gastrojejunostomy by means of a Murphy's button was performed. On discharge she seemed relieved, but shortly afterwards the old symptoms returned, and she has been re-admitted several times since for lavage of the stomach, which temporarily relieves her.

Case 23.—Female, aged 26, was admitted in February, 1905, for perigastric adhesions after a perforated gastric ulcer. It was also thought that there was some pyloric obstruction. Posterior gastrojejunostomy was performed by means of a Murphy's button. She experienced great relief at the time, but three months later all her symptoms had returned as badly as before.

Case 24.—Female, aged 33, was admitted in January, 1904, having never passed a week since April, 1900, without vomiting. After food she had severe pain at the umbilicus. The vomit occasionally contained blood. She was operated upon; an old fibrosed gastric ulcer was found, the pylorus not being stenosed. Posterior gastrojejunostomy by Murphy's button was performed. The patient vomited incessantly for eleven days after the operation, and nearly died. The button was passed *per rectum* on the twenty-fourth day. On discharge she still had severe pains in the abdomen; she was kept awake at night by them, and she was sick as before.

D. *Cases of Gastrojejunostomy for Non-malignant Conditions of the Stomach, in which great relief resulted, and in which either cure or great improvement is maintained.*

Case 25.—Male, aged 30, was admitted in December, 1901. At the operation peritoneal adhesions around the pylorus were found. Posterior gastrojejunostomy was performed with the aid of a Murphy's button. Relief to the previous symptoms was complete, and the patient reported himself "cured" four and three quarter years later.

Case 26.—Male, aged 39, was admitted in January, 1902, for symptoms of pyloric obstruction. At the operation a cicatrised ulcer of the pylorus was found. Posterior gastrojejunostomy was performed by suture. The patient remained "cured" for three and a quarter years, and then died of acute phthisis.

Case 27.—Female, aged 23, was admitted in December, 1902, for symptoms of gastric ulcer. The trouble began in 1898 with epigastric pains after food, beginning immediately after a meal, and lasting two hours. A little later vomiting occurred repeatedly, the amount of vomit being the food just taken. The symptoms came and went. Hæmatemesis occurred once in 1899 and twice in 1902, the attack being very severe, one month before admission. She was vomiting everything she took, so posterior gastrojejunostomy by suture was performed. At the operation the diagnosis of pyloric cicatrix from simple ulcer was confirmed. There were many peritoneal adhesions around the pylorus, but the stomach was not dilated. On discharge, one month after the operation, she was able to take full diet without the least discomfort, and two and a half years later she reports herself "cured."

Case 28.—Male, aged 46, admitted in May, 1904, for pyloric obstruction and dilated stomach. The trouble dated from seventeen years previously, since when he had always been liable to acute "indigestion" pains, and occasional vomiting. He had never had hæmatemesis nor melæna. Latterly the pains had been acute and almost continuous even upon milk diet, and he had begun to vomit great quantities of fluid at intervals. He was wasted, thin, and anæmic. At the operation many adhesions were found around the pylorus; the condition of the ulcer is not stated. Posterior gastrojejunostomy was performed by the aid of a Murphy's button, which was passed on the fourteenth day. On discharge he was still very weak, and had some pains even on careful diet, but he was much better. One and a quarter years later he reports himself as "improved, but not free from pains after food."

Case 29.—Male, aged 65, was admitted in July, 1904. At the operation a cicatrised pyloric ulcer was found. Anterior gastrojejunostomy was performed with the aid of a Murphy's button. Relief to his symptoms was immediate, and one year later he reports himself as "cured."

Case 30.—Male, aged 64, was admitted in November, 1904, for symptoms of pyloric obstruction. At the operation a chronic ulcer was found; it is not stated whether it was in the duodenum or at the pylorus. The stomach was

moderately dilated. The symptoms dated from only two years previously, and consisted mainly in acute pains "in the chest" coming on from two to three hours after food. Vomiting had been slight; neither hæmatemesis nor melæna had occurred. Gastrojejunostomy was performed by direct suture, and jejuno-jejunostomy was done at the same time. Relief was immediate, and nine months later he reports himself "much improved."

Case 31.—Male, aged 40, was admitted in January, 1905, for chronic duodenal ulcer. The diagnosis was confirmed at operation. Posterior gastrojejunostomy was performed with the aid of a Murphy's button. Relief was immediate, and one year later he reports himself "cured."

Case 32.—Male, aged 32, was admitted in June, 1905. He had recovered from a perforated duodenal ulcer two months before, and was now admitted for pains which were thought to be due, in part at least, to adhesions. Gastrojejunostomy was performed, and he reports six months later that he has remained quite free from the pains.

E. *The following cases complete the list of all the Gastrojejunostomies that have been performed in Guy's Hospital up to* 1905 *for Non-Malignant Conditions; but none of them have been traceable since discharge from the Hospital.*

Case 33.—Male, aged 34, was admitted in October, 1900. At the operation a cicatrised pyloric ulcer was found, with many surrounding adhesions. Gastrojejunostomy, with the aid of a Murphy's button, was followed by great relief up to the time of his discharge.

Case 34.—Male, aged 39, had for nine years suffered from very bad epigastric pains at intervals of three or four months. He had had but slight vomiting and no hæmatemesis. Medicinal treatment and dieting had always given relief until three years ago, since when the pains had been frequent and very acute. In 1898 he was operated upon for gallstones, but none were found. In July, 1899, he was admitted with a view to further operation. He improved so much with rest in bed, that laparotomy was postponed. Immediately on going out the pains returned. In October, 1899, he was readmitted. Partial stenosis of the pylorus from perigastric adhesions was found on operating; the pylorus was digitally dilated, after opening the stomach. Relief followed, but it was temporary only. Pains began to recur six weeks later. In June, 1900, the pains were so bad that gastrojejunostomy was performed. Relief followed at once, but the patient has been lost sight of since.

Case 35.—Male, aged 50, was admitted in May, 1901, for the usual signs of pyloric obstruction. At the operation, a cicatrised pyloric ulcer was found. Posterior gastrojejunostomy was performed by means of a Murphy's button. The patient recovered, with considerable relief, but has been lost sight of.

Case 36.—Male, aged 37, was admitted in May, 1901, for simple pyloric obstruction. Pyloroplasty had been performed fourteen months previously, after he had suffered from repeated abdominal pains and vomiting on and off for ten years. The symptoms rapidly recurred after the pyloroplasty, so posterior gastrojejunostomy was performed with the aid of a Murphy's button. The patient was "cured" on discharge, but has not been traced since.

Case 37.—Male, aged 50, was admitted in December, 1901, for pyloric stenosis. At the operation posterior gastrojejunostomy was performed with the aid of a Murphy's button. The symptoms were "much improved" on discharge.

Case 38.—Male, aged 39, was admitted in April, 1902, for pyloric stenosis, the result of swallowing corrosive acid. Gastrojejunostomy was performed with the aid of a Murphy's button. The patient was "cured" on discharge.

Case 39.—Male, aged 36, was admitted in September, 1902, for cicatricial stenosis of the pylorus. Posterior gastrojejunostomy was done with a Murphy's button. He was apparently cured on discharge.

Case 40.—Male, aged 32, was admitted in December, 1902, for persistent vomiting. The cause was not found. At the operation it was noted that there was no pyloric stenosis, and no ulcer either in the stomach or in the duodenum. The stomach was moderately dilated. Posterior gastrojejunostomy with a Murphy's button was performed. Very severe vomiting persisted for four days afterwards, but then ceased, and the patient on discharge was apparently cured.

Case 41.—Female, aged 30, was admitted in March, 1903. Two years previously she had been successfully operated upon for perforated gastric ulcer. Since then she had had three bouts of acute epigastric pain, and it was for one of these that she was now re-admitted. The ulcer, which had previously perforated, had been on the anterior surface of the stomach near the cardiac end. There was no pyloric obstruction, and the pains seemed due to the many perigastric adhesions rather than to the ulcer. Posterior gastrojejunostomy by suture was performed; the patient was discharged free from pains.

Case 42.—Female, aged 37, was admitted in November, 1903. She began to suffer from great pain in the front of the chest and from vomiting twelve months previously. During all that time she had vomited almost continuously, retaining even milk with the greatest difficulty. On one occasion only was there hæmatemesis, one pint. At the operation an ulcer was found on the lesser curvature of the stomach, the base being adherent to the liver. The pylorus was free, and there was no gastrectasis. There were many recent perigastric adhesions. Posterior gastrojejunostomy by suture was performed. On discharge the patient retained simple foods, but required to be most careful with her diet. She has not been traced.

Case 43.—Male, aged 59, was admitted in May, 1902, for cicatrising pyloric ulcer, verified by operation. Posterior gastrojejunostomy was performed; the patient was discharged greatly relieved.

Case 44.—Female, aged 49, was admitted in January, 1902, for pyloric obstruction, which was found, at operation, to be due to a calcified retro-peritoneal cyst. Posterior gastrojejunostomy with Murphy's button was performed. Improvement was great, and the patient was well on discharge.

Case 45.—Female, aged 50, was admitted in January, 1905, for symptoms of pyloric obstruction. Operation showed the condition to be a chronic duodenal ulcer. Posterior gastrojejunostomy, with a Murphy's button, was performed, and on discharge the patient was well.

Case 46.—Male, aged 33, was admitted in February, 1905, for pyloric stenosis. A cicatrised pyloric ulcer was found at operation. Anterior gastrojejunostomy by suture was performed, and the patient was quite well on discharge.

Case 47.—Female, aged 27, was admitted in March, 1905, for abdominal pains after recovery from a perforated gastric ulcer. At the operation peri-gastric adhesions were found; posterior gastrojejunostomy, with a Murphy's button, was performed, and the patient was discharged better, but not quite free from pains.

The Nature of the Operations Performed.

Murphy's button was used in thirty-one cases, direct suture in eleven, and in five the method of anastomosis is not stated. The anterior operation was adopted in ten cases, the posterior in twenty-seven, and in ten it is not known whether the opening was anterior or posterior. In two cases, Nos. 11 and 30, entero-anastomosis was performed at the same time.

If the whole number are arranged broadly into three groups, it will be found that:—

	Murphy's Button.	Direct Suture.	Not stated.	Anterior.	Posterior	Not stated.
Of those who died within a fortnight	8	5	0	7	4	2
Of those who survived, but got no relief	5	0	1	0	5	1
Of those who survived, and got relief for a time at least	18	6	4	3	18	7

The total number of cases is so small that they do not afford any reliable basis for drawing conclusions as to the merits of direct suture as against Murphy's button. It must be remembered that during the years when the above operations were performed it was the custom to make the anastomotic opening very little, if any, larger when direct suture was employed, than the one formed by the Murphy button. It is only recently that the need for a large opening between the stomach and intestine has been fully realised, and the time has not yet come for comparing the results of these large openings by direct suture with those of Murphy's button. A discussion of this question will be found on page 191. As regards the relative merits, or at least the immediate safety or the reverse, of the anterior and posterior operations, the figures seem to argue strongly against the former. Seven out of the ten anterior gastrojejunostomies were fatal, whereas only four out of the twenty-seven patients submitted to posterior jejunostomy died.

A General Summary of the Cases.

It is interesting to note that, whereas the older teaching in regard to gastric ulcer was that females were affected more than males, and that the commonest age for it was under thirty, the above cases include :—

31 males, and
16 females.

And the ages of the patients were as follows :—

Aged less than 20 years	...	...	1
Between 20—30 "	...	...	7
30—40 "	...	...	17
40—50 "	...	...	15
50—60 "	...	...	4
60—70 "	...	...	3

This is an argument in favour of the modern view that gastric ulcer used to be diagnosed in young women upon insufficient grounds, unless it be assumed that ulcers in them heal without the effects that are produced in men.

There were only two cases in which gastrojejunostomy was performed for severe hæmatemesis. The operation failed to arrest the bleeding, and death resulted; in both patients the stomach was actually observed during life to be oozing blood from many points and not from a single focus that could be dealt with by any surgical means. The cases were examples of gastrostaxis of which Dr. Hale White has collected a great many. It is exceedingly difficult to distinguish these cases clinically from those of hæmorrhage from actual gastric ulcer, and it is now the general opinion that surgical measures are contraindicated whilst gastric bleeding is going on. Hæmatemesis, if it recur with increasing severity at diminishing intervals, may demand operation, but the latter should be performed during a quiescent period and not during active hæmorrhage.

The condition calling for operation in the remaining forty-five cases was almost without exception a chronic cicatrising ulcer either of the stomach or of the duodenum, in most cases causing obstruction. Thus there were thirty-four with definite pyloric stenosis and six with duodenal ulcers; in only seven was there no actual obstruction, but in six of these there were extensive perigastric adhesions, due in three cases to a former acute perforation. Moreover, in the great majority the symptoms had existed for a long time. These are most important points in connection with the mortality. It is easy to understand that statistics which include any considerable proportion of cases in which gastrojejunostomy has been performed for simple ulcer without pyloric obstruction are likely to be much more favourable.

Eleven cases, or over 23 per cent., died within a fortnight of their laparotomy. The causes of death were as follows:

Simple exhaustion accounted for ...	3 cases.
Continued vomiting	2 "
Shock	2 "
Peritonitis from non-union	1 "
" perforation of the ulcer	1 "
Pneumonia	1 "
Kinking of the small intestine by a band	1 "

And death occurred :—

Within twenty-four hours in	...	...	2	cases.
On the 2nd day in	...	...	1	"
3rd "	...	...	2	"
5th "	...	...	2	"
6th "	...	...	2	"
9th "	...	...	1	"
13th "	...	...	2	"

This high mortality is much the same as that at other hospitals during the same period ; at St. Thomas's Hospital it was 23 per cent. for the same years, and at St. Bartholomew's it was 21 per cent. in nineteen gastrojejunostomies performed for pyloric stenosis between 1903 and 1905.* It must be borne in mind that the patients almost all had had their trouble for years, and that their general health was, therefore, much below par at the time of operation. The mortality for gastrojejunostomy performed in a series of perfectly healthy men would, no doubt, be extremely small. The above statistics overstate the direct risk of the operation, especially if cases be carefully selected ; but the risk of gastrojejunostomy for cicatrisation of pyloric ulcers certainly cannot be called a small one.

Turning next to the remote results, it will be seen that even when the operation is in itself successful the subsequent condition of the patients is not by any means always good. Of the forty-seven consecutive cases collected there remain thirty-four, when those who died at once are deducted. Nineteen of these have been traced; the remaining fifteen were discharged much relieved, and what happened to them afterwards is unknown. For the sake of argument, let it be assumed that they have since remained absolutely well. Six of the nineteen who recovered, and have been traced, got no relief to their symptoms, even for a time, one dying six months after ; five, though they obtained relief for a short time, had all their old symptoms back again within a few months. That is to say, the result is known to have been a failure in *thirty-two per cent.* of the cases who recovered from the

* Vide Roy. Med. and Chir. Soc. Trans., 1907.

operation. The result is known to have remained good in eight only:—

In	1	...	...	for between	4—5 years.
	1	...	...	"	3—4 "
	1	...	...	"	2—3 "
	3	...	...	"	1—2 "
	2	...	...	"	½—1 "

The ultimate results in the remainder are not known, but the 32 per cent. of failures is based on the presumption that the untraced cases all did well.

The net result of these statistics is, therefore, that all the cases died in whom gastrojejunostomy was performed for hæmorrhage; that over 23 per cent. died as the result of the operation; and that at the very least 32 per cent. of the cases who recovered got no lasting relief from their operation.

Some of the reasons why the results of gastrojejunostomy in the last decade are not more satisfactory have already been indicated. The risks at the present time are probably much less than they have been in the past. Nevertheless, taking the cases all round, the performance of gastrojejunostomy, even at the present time, does carry with it a real risk to the patient's life; it is an operation which should not be decided upon with any sort of haste. When it is done for the purpose of making a new passage for the food onwards from the stomach when the proper path through the pylorus is interfered with by an ulcer, by a scar, or by adhesions, one must not give one's patient's friends too bright a picture of the results to be expected, or in many cases there is sure to be disappointment.