it is then reduced to twice a day. After this, the powder is left off during the day, but a dose is taken at bedtime. This is continued for several months, and some patients take this nightly dose indefinitely.

(5) The patient is told to smoke as little as possible. Directions as to food are given, and he is warned that if any symptoms appear he is to go on to milk for a day or two and take the powder three or four times a day for a few days.

This short sketch of the intensive alkaline treatment of gastric ulceration merely tends to indicate the general nature of the method, and the results of the treatment. There is little doubt that the plan yields results hitherto unknown in the medical treatment of gastric and duodenal ulcer.

GASTRO-JEJUNOSTOMY VERSUS PARTIAL GAS- TRECTOMY IN THE TREAT- MENT OF GASTRIC ULCER.

SUMMARY OF LECTURE DELIVERED

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ON THE OCCASION OF THE VISIT, ON AUGUST 2, 1927,
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(Under the Auspices of The Fellowship of Medicine.)

To some it may appear to be old-fashioned and out of date to suggest gastro-jejunostomy for the treatment of gastric ulcer. By many it is considered an obsolete operation, and to a considerable extent it has been supplanted by partial gastrectomy. My reason for choosing this subject is that I am still firmly convinced that in the majority of cases gastro-jejunostomy is a thoroughly satisfactory treatment both for gastric and duodenal ulcers, provided it is

properly performed and that prolonged and appropriate after-treatment is carried out. When I say properly performed, I mean not only that the surgical technique should be correct, but that the operation should be performed for definite recognizable ulcers. While it is probably true that no operation in surgery has added more to the sum of human happiness than gastro-jejunostomy, it is equally true that in a great many cases it has brought discredit on surgery owing to its failure to relieve the patient, either because it has been performed without proper indication, or because the after-treatment has been defective.

Let us consider for a moment some of the arguments which are put forward in favour of partial gastrectomy. First, that it is a more certain cure. This has still to be proved. The operation of partial gastrectomy in the treatment of gastric ulcer is on trial, but the interval which has elapsed since it became a fashion is not long enough for us to judge as to the permanency of the cures. It is already certain that partial gastrectomy is not infallible. It is also certain that the mortality-rate is higher. I am well aware that in the hands of a few experts the death-rate may be but little higher than that of gastro-jejunostomy; nevertheless, few will be prepared to deny that partial gastrectomy is a more severe operation than gastro-jejunostomy, and that it is necessarily attended with a higher mortality.

If all the deaths and failures following gastro-jejunostomy were added together, I doubt whether they would even approximate the number of patients who die as the direct result of partial gastrectomy, apart altogether from the failures. I shudder to contemplate the probable mortality-rate if gastrectomy became the operation of choice in all cases by all operators.

Secondly, it is alleged some 60 per cent. of chronic gastric ulcers show malignant changes, and therefore that all gastric ulcers should be removed. The teaching that the common fate of a gastric ulcer is to become

cancerous is, in my opinion, a most dangerous and insidious heresy. The clinical evidence is based on the hypothesis that many patients who are the subjects of gastric carcinoma have had a gastric ulcer of long standing. The grounds for this statement are very inadequate. While it is indisputable that in a considerable number of cases of gastric cancer there is a history extending over years suggestive of gastric ulcer, nevertheless suggestion is not proof, and a careful scrutiny of such histories indicates that the symptoms are the symptoms rather of intestinal stasis than of gastric ulcer. Be this as it may, we must admit that a positive diagnosis of gastric ulcer cannot be made on the history alone, and it is utterly unscientific to assume from such a history that the carcinoma has originated in an ulcer. So far from the clinical evidence being in favour of the origin of carcinoma in an ulcer, it is absolutely against it. The clinical evidence may be stated as follows: If it be true that 60 per cent. of chronic gastric ulcers are or become malignant, then it follows that frequently we perform gastro-jejunostomy for ulcers which we believe to be innocent, but which are in reality malignant. It follows, therefore, that a large number of such patients ought to die subsequently from cancer. We know that this is not the case. Several observers who have investigated this subject have reported that the proportion of those who die from carcinoma after gastro-jejunostomy for supposed simple ulcer is about 2 per cent. In my own cases 2.5 per cent. of the patients are said to have died later from carcinoma. Further investigation into these cases has made me sceptical as to whether the proportion is as high even as 2 per cent. In the main the conclusion as to death from cancer is based on statements by the patients' relatives, and the term cancer is used in a vague way to cover a multitude of diseases. At any rate, although death was attributed to cancer in 2.5 per cent. of those on whom I have performed gastro-jejunostomy for ulcer, in

many of the cases there was no certain evidence of the existence of cancer, and in others, some of which I have been able to verify, there was a primary cancer elsewhere than in the stomach. In my own experience I have met with only one instance in which the cancer was indubitably gastric, and in that case it was not at the site of the original ulcer.

There is another strong argument against the allegation that cancer is frequently grafted on ulcer, which is this: If it be true that in 60 per cent. of the cases of chronic gastric ulcer there is evidence of malignancy, then logically the conclusion is inevitable that in course of time *every* gastric ulcer will become malignant; which, as Euclid would say, "is absurd."

For many years I have been asking this plain and straightforward question: If it be true that gastric ulcer is so frequently the precursor of gastric cancer, why is it that so few patients who have had gastro-jejunostomy performed for a gastric ulcer die later from cancer? So far I have received no reply. This is not surprising, for the only two possible answers put the propounders of the ulcer-carcinomatous hypothesis in a dilemma. Patients rarely die from cancer after gastro-jejunostomy for supposed simple gastric ulcer because, either gastric ulcers are rarely in fact malignant, or, if they are malignant, then gastro-jejunostomy cures cancer.

The pathological evidence has been based on the findings of small down-growths of epithelium near the edge of the ulcer, which down-growths are regarded as evidence of malignancy. In an admirable paper, Dr. Dibble has given cogent reasons against these assumptions. Therefore, neither clinically nor pathologically is there any adequate ground for this hypothesis, and certainly it is not one which should influence us in our choice of operation.

What about the cases in which we are doubtful as to whether the ulcer is simple or malignant? My experience is that the usual

mistake is to consider an ulcer malignant which is really innocent. The converse is rare. I have many times removed part of the stomach for what I believed to be a cancerous growth, which microscopical examination proved to be innocent, but so far as I know I have never left a removable growth behind in the belief that it was innocent. My experience as to doubtful cases may be summed up thus. A doubtful ulcer believed to be malignant usually proves to be innocent; a doubtful ulcer which is really malignant is irremovable.

Thirdly, it has been alleged that partial gastrectomy is less likely to be followed by jejunal or gastro-jejunal ulcer. This may or may not be true. I am old enough to remember that in the early days of gastro-jejunosomy a reason urged in favour of the posterior operation was that it was never followed by a jejunal ulcer. Indeed, it was a good many years after its introduction before a jejunal ulcer was reported as following this operation. Now we know that secondary ulceration is at least not less frequent after the posterior operation than after the anterior method.

THE REMOTE RESULTS OF GASTRO-JEJUNOSTOMY.

What are the remote results of gastro-jejunosomy? I have reviewed my cases of gastric and duodenal ulcer for the ten years ending 1923, and the results are tabulated in Table I.

STATISTICS OF GASTRO-JEJUNOSTOMY, 1913-23.

Recovered	...	...	495	
Died	...	...	4	
Died since ¹	...	33	410 = 82 per cent.	
Fairly well	...	61		
Quite well	...	316		
Bad result	...	...	37	
Untraced	...	...	48	
Gastric ulcer	...	...	172	
Duodenal ulcer	...	...	323	
Gastric—duodenal	...	...	4	

¹ Cured of gastric trouble.

Adding together those who are quite well, those who are fairly well—that is, are well so long as they take some care in their diet—and those who have died from other diseases, but were quite well after their operation, it is seen that 82 per cent. may be regarded as cured.

It will be noted that the percentage is that of all cases submitted to operation, and not the percentage of the recoveries and traced cases. All the untraced cases are included and are counted as “not cured.” If, as is done by some statisticians, the untraced cases be disregarded and the percentage of cures calculated with reference to cases traced, the “cures” would be 91 per cent. Obviously, however, this is a doubtful method of presenting the case. The ascertained unsatisfactory results were 7 per cent. I think it is not an exaggeration to say that in patients who can and do take reasonable care of themselves the proportion of cures is over 90 per cent. I may say in passing that my practice is to perform the anterior operation, because from an experience of twenty-five years, during which I have carefully followed up the results of all my gastric operations, I am satisfied that the remote results of the anterior operation are better than the results of the posterior operation.

My view, therefore, is that gastro-jejunosomy is the operation of choice in all cases of gastric ulcer, except those in which there is a suspicion that the ulcer is a cancerous one. Gastro-jejunosomy in most instances will bring about the healing of a gastric ulcer, even when it has eroded the pancreas. This is not a mere surmise, for in a number of instances I have seen a large excavating ulcer completely healed in patients who have died from some other cause years after the performance of gastro-jejunosomy. The results of gastro-jejunosomy are so satisfactory that more drastic measures may be wisely and safely deferred until the simple operation has been tried and failed.

While there may be difference of opinion as regards the value of gastro-jejunosomy

in the treatment of gastric ulcer, there can be no question that success can be attained by gastro-jejunostomy in over 90 per cent. of the cases of duodenal ulcers. Therefore, in my view, duodenectomy is a totally unnecessary operation: it is one of the most tedious operations in surgery, the difficulties and dangers being far greater than with gastro-jejunostomy, and the remote results problematical.

It cannot be emphasized too often that gastro-jejunostomy should never be performed except when there exists an ulcer which can be seen and felt. It should never be done on a clinical diagnosis, however clear and definite the symptoms, unless the diagnosis be confirmed on the operation table. It may not be amiss to remind you that gastro-jejunostomy will not give good results if a gall-stone or a diseased appendix be left in the abdomen.

Often our failures teach us more than our successes. In the series I have given there are between 7 and 8 per cent. of known failures. Of them, approximately 2 per cent. were due to jejunal ulcer, 3 per cent. to hyperacidity, 2 per cent. to intercurrent diseases, such as phthisis, chronic nephritis, &c., and 0.5 per cent. to adhesions or the complications incidental to abdominal operations. Jejunal ulcer and hyperacidity are, I believe, usually the result of improper diet, and if so are preventable. It is difficult to see how partial gastrectomy would give any better results in the remaining 2.5 per cent. of the cases.

It is, therefore, very problematical whether partial gastrectomy, *per se*, would reduce the number of these unsuccessful results; it would certainly increase the mortality-rate, and on the other hand, the number of unsuccessful results from gastro-jejunostomy would be reduced materially if patients could and would keep to a more suitable diet.

This leads me to point out the supreme importance of after-care. It cannot be emphasised too strongly that gastro-jejunostomy is but an incident in the treatment of

gastric and duodenal ulcers. A prolonged period of restricted diet is imperative, especially in cases in which there is hyperacidity before operation. In all such cases increase in diet should be very gradual, and must be controlled by gastric analysis at regular intervals. Without this aid we are working in the dark. After-treatment is equally as important as operation—if we bear this truth in mind and act accordingly, gastro-jejunostomy will yield even better results than we know to-day.

A CLINICAL LECTURE ON SOME POINTS ON THE DIAGNOSIS & TREATMENT OF THE INFECTIOUS DISEASES.

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DELIVERED AT THE HOSPITAL, JULY 2, 1927.

I PROPOSE dealing with a few of the difficulties which arise in the diagnosis of diphtheria and scarlet fever, and making some remarks on points in the treatment of infectious diseases on which, in my opinion, sufficient stress is not usually laid.

The case of diphtheria you have just seen illustrates one of the difficulties. This case was not notified till the fourth day, although it was seen by a medical man on the first day of disease. As you see, the case is an extremely severe one, and the prognosis is extremely grave, although the patient has been given 96,000 of antitoxin since admission. (The patient later died of cardiac failure on the tenth day of disease.)

The failure to give antitoxin early is the cause of the death-rate being as high as it is