lucidly before the surgical world. Neither have I written this article with the idea of bringing out any new or unusual things. It is merely my observation as one of the workers in the Smith clinic.

A Mirror of Hospital Practice.

THE INDICATIONS FOR GASTRO-JEJUNOSTOMY BASED UPON EIGHTEEN CASES IN THE KASHMIR MISSION HOSPITAL.

BY A. NEVE, F.R.C.S.E.

IT has been quaintly said by Mayo that a gastric patient should have nine medical cures before gastro-jejunostomy is performed. There is a trifle of sarcasm, perhaps, as to the value of these successive cures. If really cured why was not the undertaker called in? But smiling apart, and cured or not, the medical procedures to establish the need of an operation are somewhat extensive. I need hardly mention the ordinary clinical methods by which a very dilated or proptosed stomach is recognised. Palpation and auscultation percussion have their value and limitations. The use of the stomach tube and test meals is essential. But it may be misleading even in skilled hands. Some years ago, gastroscopy was in vogue among specialists. But the real gastroscopy is that with the Rontgen rays. It has been systematised during the last few years, and may be relied upon to show:—

1. The physical relation of the stomach to the meal from the cardiac orifice to the duodenum.
2. The position of the stomach in the abdomen.
3. The shape of the stomach when empty, except for a little barium, and when distended.
4. Its motility.

It has been aptly said that the Rontgen rays revealed a new abdominal anatomy. To justify this claim one need only compare the anatomical drawings of the text-books with the skiagrams of a stomach after a barium meal.

To the Rontgenologist the stomach is not a bag suspended somewhat horizontally in the epigastric region, but it is a tube hanging almost vertically from the diaphragm to the umbilicus, in a state of tonic contraction and of a shape which depends upon the amount and position of the food. When food enters a normal stomach it does not drop down at once to the lowest portion but is upheld in the pars cardiaca, and in the later stages of gastric digestion the upper two-thirds of the organ are in tonic contraction, and the food is held in the pars pylorica.

1. If the food is held up in the pars cardiaca for many minutes and can then be seen trickling down in a narrow stream an ulcer of the contracted part is indicated: or an indentation, technically called an incisura, may be seen or photographed pointing towards the ulcer.
2. If the contraction is circumferential and permanent in the pars media, it constitutes the hour-glass stomach long familiar to pathologists.
3. When contraction of this type occurs in the pars pylorica the body of the stomach becomes dilated, and food is long retained.
4. Atonic conditions are responsible for many downward displacements, and for most moderate dilatations.

In such the food rendered visible by the barium or bismuth at once sinks to the lowest level; for the organ is no longer a tube but a flaccid bag. Gastroptosis may supervene, although this is not necessarily associated with atony. (Barclay.)

In the typical atonic dilated stomach, when the patient is vertical the shadow comes down to or below the brim of the pelvis. And in such cases the upper margin of the shadow is horizontal. This is a not uncommon condition in Kashmir, for in one week I have seen three such cases, none of them, however, requiring gastro-jejunostomy.

Such cases should be watched with the screen at intervals of an hour, and the motility will often be seen to be normal, a light meal passing out in four or five hours.

Pyloric obstruction may depend upon—

(*a*) organic obstruction by a tumor, or cicatrix;

(*b*) spasm due to the consistency, or hyperacidity of the food;

(*d*) mechanical displacement or kinking.

Peristaltic action should be noticed, and if not otherwise evident may be evoked by gentle massage. It is most marked towards the pars pylorica, and if violent is suggestive of obstruction. An immense lot has been done by Rontgenologists during the recent years, not merely studying the movements or positions with the screen, but even taking cinema photos.

Cole, Barclay, Handek, and others have done remarkable work. It is, however, true that even in cases of gastric ulcer with cicatrization skiagrams may reveal nothing, while in persons free from special symptoms surprising misplacements may be observed; hence the rays are but an additional means of investigation, and must not be interpreted dogmatically, except by men of wide clinical experience.

During the last year I have made large numbers of screen examinations in cases with symptoms of dilatation or ulceration, and in some of these the operative findings had been anticipated by the rays. During the last four months we have done four gastro-jejunostomies, and in three of them the diagnosis of pyloric obstruction was confirmed. In one the drawing made upon the screen of a marked *incisura* at the middle of the greater curvature was explained by finding an ulcer of the lesser curvature opposite that place.

The practical conclusions may thus be summed up as regards indications *against* operation—

(1) if the stomach after a barium meal does not extend more than an inch below the umbilicus;

(2) if the meal has left the stomach in four hours;

(3) if there are no special indentations of outline, nor flecks of shadow, then as far as the Rontgenologist is concerned there are no indications for operation.

In several recent cases the stomach was much dilated, but a study of the motility deterred me from pressing for operation. Such cases improve fast with lavage and suitable diet, etc. Our own practice has been decidedly conservative. In Kashmir there is a common form of dilated stomach connected with atonic fermentative gastritis owing to the copious rice diet of the people. This is usually amenable to medical and dietetic treatment. Too often such cases cease attendance long before a cure can be claimed, but on a diet of minced meat and bread they continue to improve.

In only eighteen cases has gastro-jejunostomy been performed, and with two deaths. We usually do the no-loop non-reverse posterior operation. The pyloric obstruction proved in most cases to be due to duodenal ulcer. In one case the pancreas was enlarged, in another there was also a gall-stone, in another extensive adhesions all round, and in one case a carcinoma. There were other cases of carminoma which were not submitted to operation.

All the cases operated upon were in a very emaciated weak condition. One patient sank on the 9th day, having had much vomiting.

The other fatal case had undergone no less than four operations at his own urgent request. In the first an hour-glass stomach was found and the lower part united to the jejunum. His symptoms were but little relieved, so six weeks later, the stomach was again examined and finding the hour-glass condition accentuated and a kink in the jejunum below the well-healed line of union, another loop of jejunum was united anteriorly with the larger stomach pouch. He thrived for a time, but again pressed for operation lower down, referring his pain to the region of the appendix. So three months later this was explored, but found healthy: a chromic catgut ligature was then applied to occlude the pylorus. Again there was some improvement, but he was an expert in producing vomiting, and still urged surgical relief. Six months later his chief symptoms were due to intense constipation. A bismuth meal was seen to pass quickly out of the stomach by the artificial route: so an ileo-sigmoid-ostomy was performed, with difficulty, owing to adhesions. He sank, however, on the tenth day after.

It is outside the scope of this article to describe the technique of the operation. There is a precision and a simplicity about it that compares favourably with most of the alternative procedures. The whole operation should seldom take over fifty minutes.

Complications sometimes ensue. In two of the earlier cases, there was some vomiting at intervals. In one, pneumonia gave trouble, and in two others a little bronchitis. Usually they have been on plain ordinary diet within ten days.

As to the final results, many have been very satisfactory, for the patients have returned, months or years afterwards, sturdy and stout to show themselves, in others the local symptoms and digestion improved but general debility remained, while others have altogether disappeared from our view. I have examined some with X-rays some time after and noted the satisfactory passage of the food through the new outlet. The operations, numbering eighteen in seventeen individuals, have been shared by Drs. E. F. Neve, Rawlence and myself with the assistance of Drs. Clark, Jeffries, Starr and Hoffmann.

SUMMARY.

Gastro-jejunostomy is indicated when there are signs of a chronic ulcer.

(2) Especially when associated with evidence of a dilated stomach.

(3) The X-Ray study of a Barium meal throws great light on the shape, position and motility of a stomach.

(4) But it must be interpreted by a broad clinical view of the case.

An operation is not always indicated for an acute ulcer, and but seldom for atonic dilatation and proptosis.

AN INTERESTING SEQUELA IN A CASE OF CHOLERA.

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ENGINE-driver H., of the East Indian Railway, had taken his train to Tundla; there he got very ill, vomiting and purging, he was sent back by passenger train and arrived at Cawnpore about 3 o'clock in the afternoon of the 25th April.

I saw him at 5 o'clock, he appeared then to be in the algide stage of cholera, motions every minute, as his wife said, skin cold and clammy as the dead. As the E. I. Railway Hospital at Cawnpore is only a hospital in name as far as Europeans are concerned, and has not the necessaries and accessories for treating a case of cholera, I decided to have him removed to the District Hospital, a distance of four miles. To this end I gave him (*pace* L. Rogers) a hypodermic injection of morphia, and he was taken to the hospital, where he arrived at 8 P.M. His condition, though bad, was not dangerous; and I ordered rectal salines to be frequently given, and plenty of water by the mouth. Also I ordered him to take