A METHOD OF PERFORMING GASTRO-JEJUNOSTOMY.*

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I SHALL endeavour to explain a method, slightly different from the ordinary one, of performing the operation of gastro-jejunostomy—a method adopted in 26 consecutive operations for the following lesions:

	Operations.
Gastric ulcer, with or without adhesions ...	11
Pyloric stenosis and gastric dilatation the result of simple ulceration ...	6
Gastric dilatation associated with enteroptosis ...	1
Severe haematemesis from simple ulceration ...	1
Duodenal ulcer ...	1
Carcinoma of the stomach ...	1
Carcinoma of pylorus ...	5
	26

Of these operations two only had fatal results. In one case (of very advanced carcinoma of the pylorus) the patient died from exhaustion, two days after the operation; and in the other (of duodenal ulcer) the patient, who had previously undergone an operation for some pelvic disease, died, three weeks after an apparently successful gastro-jejunostomy operation, from the effects of an abdominal abscess, the cause whereof was not ascertained, but which, it is believed, was unconnected with the gastro-jejunostomy operation.

Method of Operating.

After the abdomen had been opened in the usual way, and the diseased area examined, the stomach, transverse colon, and great omentum were turned over on to the abdominal wall, so that the posterior wall of the stomach lay uppermost. The transverse mesocolon was then cut through and the stomach drawn through the opening

made in it. Two short-bladed forceps were then applied, one to each end of the portion of stomach selected for junction with the jejunum. This portion of stomach—that is, the portion lying between the two forceps—was not “clamped” with a forceps, but was left “free.” The omission to check, by clamping it, haemorrhage and gastric contents, was a special feature of the modified method of operating which I am attempting to describe. The edges of the cut in the transverse mesocolon were fastened, with a few stitches, to the stomach wall—an important step as a provision against the possibility of the small intestine subsequently passing through the opening and becoming strangulated.

The next step was to select a portion of the jejunum for junction with the stomach. Each end of the selected portion was grasped with a short-bladed clamp forceps of the same kind as had been previously applied to the stomach. Thus there were four clamp forceps in use, two grasping a portion of the stomach and two grasping a portion of the jejunum. By means of these two pairs of forceps the portions of stomach and jejunum which were to be connected were brought close together and held side by side. Sponge cloths were then packed round the exposed portions of stomach and jejunum.

With a Lembert suture the outer coats of the stomach and jejunum were then stitched together for a length of about $4\frac{1}{2}$ in. Openings of the requisite length ($3\frac{1}{2}$ in. to 4 in.) were made in both the stomach and the jejunum. When the stomach was opened its larger vessels were secured and ligatured. This was a special feature of the operation, the objects being to check haemorrhage during the operation and to prevent post-operative haemorrhage.

The next step was by stitching to join the opening in

the stomach to that in the jejunum. There were four rows of stitching. The first row, already mentioned, was simply peritoneal stitching. The second row, just in front of the first row, joined one side of the opening in the stomach to the corresponding side of the opening in the jejunum; this row of stitches secured the whole thickness of the stomach wall to the jejunum. And, similarly, the third row, joining the other side of the opening in the stomach to the other side of the opening in the jejunum, extended to the whole thickness of the walls of the stomach and jejunum. This third row closed the openings in and completed the junction of the stomach and jejunum. The fourth row of stitches, similar to the first row and corresponding to it, on the other side of the openings, was simply a Lembert peritoneal continuous suture. In doing this stitching a straight non-cutting needle was used, and, with the object of facilitating the work of the operator's assistant, care was taken that all the stitching should be “towards” the operator.

The sponge cloths were then removed and the stomach turned down and replaced in the abdominal cavity, which was then closed in the usual way.

Advantages.

The essential difference between this method of operating and that usually described and practised is that in the latter, with the object of checking haemorrhage and stomach contents, the portion of the stomach selected for the opening is clamped throughout its entire length with the blades of a long-bladed forceps, whereas in the former only the two ends are grasped with forceps, and the portion of stomach lying between these two forceps is not clamped at all.

The method described by me seems to have the following advantages:

1. In the ordinary method reliance has to be placed solely on the tightness of the stitching for the prevention of post-operative haemorrhage into the stomach, which not infrequently occurs and has even proved fatal. In the method described by me, on the other hand, it is possible, when opening the stomach, readily to see and ligature the larger vessels in the stomach wall; this overcomes the risk of post-operative haemorrhage.

2. When long-bladed forceps are used it is in practice by no means easy in some cases to get the stomach “nicely” between the blades. On the other hand, the short-bladed forceps can be applied quickly and with ease. Also, when the long-bladed forceps are used, there is more danger of damaging the stomach walls unless rubber tubing is used to cover the blades.

3. When long-bladed forceps are used it is difficult in practice, owing to the thickness of the stomach walls, to clutch hold of and clamp a sufficient length of the stomach; hence the length of the opening which can be made in the stomach is limited, for obviously the opening cannot be greater than the length of stomach clamped by the forceps. But in practice, even the whole of this length, limited though it is, is not available for the opening, because the “tension” at each end of the clamped portion of the stomach is found to be so considerable as to prevent ease of stitching, and obviously the opening cannot be given a greater length than that which can be stitched up with accuracy. On the other hand, in the modified method of operating described above, an opening $3\frac{1}{2}$ to $4\frac{1}{2}$ in. long can be made with ease. The operation of gastro-jejunostomy has more satisfactory results, and the risk of regurgitant vomiting is obviated if the opening is a large one.

It is easier, and takes less time, to perform gastro-jejunostomy in the way described above than in the way more commonly adopted.

It may be urged that the modified method described by me has some drawbacks. Let us consider them.

1. The flow of blood during the operation may interfere with accuracy of stitching. This is true only to a limited extent, for bleeding from the cut is mostly checked, as already mentioned, by ligaturing the larger vessels in the stomach wall, and the oozing from the smaller vessels is dealt with by the operator's assistant, who wipes away the blood as each stitch is inserted.

2. There is a risk of the patient straining when the stomach is open and forcing out some of its contents. This also is true only to a limited extent, for the stomach

* Read before the Nottingham Medico-Chirurgical Society.

ought to be washed out thoroughly before the operation; and even if anything does trickle out during the operation, it can easily be wiped away. In practice I have never found any harm result. It is suggested that the advantages of the method described by me more than counterbalance its drawbacks.

The short-bladed forceps used were made by Messrs. Down Bros.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SUBACUTE OSTEITIS OF THE EPIPHYSIS OF THE OS CALCIS.

RECENTLY attention has been drawn to the changes that take place at the epiphyses, as the result of an injury, which at the time may appear trivial, but which if neglected may be followed by more serious consequences. In all doubtful cases it is wise to have an x-ray examination made, since the most careful clinical examination often fails to detect an abnormality, which at once becomes revealed when the part is radiographed.

Within the last year I have had two cases, both of which occurred in boys of the age of 13 years, and in both cases the symptoms and signs were similar.

A healthy, well-developed schoolboy was brought to me with a request that I would photograph his foot, which was painful and caused him to limp.

The history was that in June, 1911, he went to London to see the Coronation, and did a great deal of walking and standing. He then noticed a pain in his heel. The pain has persisted off and on up to the present time, was worse after he had been walking, or when his heel was subjected to the slightest blow. It was particularly noticeable whilst he would be in the act of drawing off his boot. From time to time there had been slight swelling of the heel, but he had never noticed any bruising. In consequence of his disability he was unable to take his proper share in the games.

There was some tenderness over the back of the heel, with slight swelling on either side of the insertion of the tendo Achillis. Contraction of the muscles of the calf of the leg caused slight pain. There was no wasting of the muscles, and the movements at the ankle joint were unimpaired. His gait was what one would expect in this condition. To save his heel from impact with the ground he walked on the forepart of the foot, with the heel raised, and the knee slightly flexed.

Radiographic Examination.

The radiographic plates that were taken showed the following condition: The shape and structure of the bones were normal with the exception of the epiphysis of the os calcis. This was seen to be very irregularly ossified, and there was an abnormal gap between the epiphysis and the body of the os calcis. The epiphyseal plate appeared to be displaced upwards and backwards, and there were calcareous deposits in the lower part of the tendo Achillis.

I take it that this condition had originated as a subacute osteitis in the neighbourhood of the epiphysis, due to strain or to excessive walking on hard pavement in one not accustomed to it, and that this osteitis had led to weakness of union between the epiphysis and body, with subsequent partial displacement.

A very similar condition affecting the tubercle of the tibia is now well recognized, being known as "Osgood Schlatter's disease of the tibial tuberosity," and it is reasonable to assume that a similar condition may be met with at the epiphysis of the os calcis, which, though to a great extent protected by its dense fibrous covering, is, from its position, liable to injury.

The treatment recommended is to supply support to the heel. This can be done by means of strapping shaped similar to a jaw bandage. The central part is placed over the heel; the ends are then carried forward round the ankle joint and crossed. The patient should also be instructed to wear a soft pad inside the boot.

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IODINE IN CORNEAL ULCER.

WITH reference to the case of corneal ulcer treated by iodine, reported in the BRITISH MEDICAL JOURNAL of January 25th, p. 169, by Fleet Surgeon C. T. Bishop, I wish to mention that for the past sixteen months I have treated all cases of ulcers and ulcerations of the cornea, irrespective of cause, that have come to my surgery, and

also those occurring in my private practice, with daily applications of tr. iodi. In all cases so treated I have had, to quote Fleet Surgeon Bishop's own words, "very striking results."

I am of opinion that this is one of the most satisfactory methods of treatment for nearly all cases of ulcer of the cornea, due attention being paid at the same time to the treatment of the cause, whether local or constitutional or both.

The method I employ is the following—namely: The eye having been previously anaesthetized with a few drops of 4 per cent. solution of cocaine, the end of an ordinary wooden applicator is sharpened to a pin's point and a little cotton-wool firmly wound round it. The point is dipped in the tincture of iodine and the surface of the ulcer gently touched with it. The conjunctival sac is next thoroughly irrigated with distilled water.

May I call Fleet Surgeon Bishop's attention to May and Worth's *Diseases of the Eye* (second edition, p. 120), where the above method of treatment is described?

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INTERNAL TRAUMATIC VAGINAL HAEMORRHAGE.

THE following case of internal traumatic vaginal haemorrhage resulted in the formation of a perivaginal haematoma after a normal labour.

On January 23rd, at 10 a.m., I was called to see a multipara in labour. On examination I found a left occipito-anterior presentation, the membranes not ruptured, the os partially dilated, and an old perineal laceration. The pains were of normal strength and duration. I left the patient and returned at noon. The head was now on the perineum and was carefully conducted out of the vagina, the patient being under light chloroform anaesthesia. The placenta was expressed in due time by Credé's method, and I left the patient quite comfortable to the midwife in attendance.

At 2 p.m. a message came that the patient complained of pain, which I took to be ordinary after-pains, and sent two 1-grain opium pills with instructions. At 6 p.m. I was again called to see the patient on account of pain and faintness. At this time she seemed to be suffering considerably, was pale and cold with a quick pulse. On examination in the cross-bed position the vulva gaped widely; the mucous membrane of the post-vaginal wall was very congested and everted, presenting the appearance of an inverted placenta at the vulvar orifice; the whole posterior triangle of the anatomical perineum was very tense and bulging, and the vaginal canal practically occluded; the cervix uteri could not be reached by the finger. The fundus uteri was globular, firmly contracted, and raised above the level of the umbilicus. Rectal examination disclosed to the left and behind a tense well-defined swelling about the size of a large orange. A hypodermic injection of morphine and ergotinin was administered.

At 9 p.m. the rectal swelling had increased considerably; the pulse became faster, and the patient more collapsed, so I decided to have her removed to the Doncaster Infirmary, where I again saw her at 2 a.m. on January 24th, with Dr. Henry Clarke. At this time there was a well-marked ecchymosis extending from the anus laterally on both sides to the outer limit of the ischio-rectal fossae. Dr. Clarke, in attempting to reach the cervix uteri, caused a rush of blood from the vagina, and consequent disappearance of the vaginal obstruction and of the tumour to be felt from the rectum. Then, with careful examination under the altered circumstances, we found, high up in the vagina on the left side, a tear which, owing to the congested condition, looked like a punctured wound of sufficient size to admit the tip of the little finger. This was stitched in the usual way, and the patient has gone on well.

The foregoing notes I consider interesting and instructive. Interesting because, according to Jellett, "internal traumatic vaginal haemorrhage" sufficient in amount to require treatment is a very rare condition; there were only 10 cases in 20,000 deliveries at the Rotunda Hospital.