of a cyst is exaggerated. These symptoms are usually described as the onset of sudden abdominal pain, together with vomiting or other alimentary disturbances. On examination some degree of shock is found and muscular rigidity of the abdominal wall.

Analysis of the cases of actual or supposed torsion of the pedicle of a cyst which I have seen leads to the conclusion that the more urgent the symptoms of internal strangulation the less probably is the case one of a strangulated cyst, but more probably of some other intra-abdominal catastrophe, accompanied by the presence of an ovarian cyst.

The explanation offered that when at laparotomy a cyst is found which had undergone torsion the occurrence of the twist was gradual rather than sudden in onset is, in the absence of any clinical signs suggesting it, equally difficult of proof or disproof. It must remain an open

question until more is known concerning the mechanism of the torsion, which is certainly very obscure.

In conclusion, I wish to draw attention to two points only, which have impressed themselves upon me, and they are these: (1) the need for a thorough examination of the whole abdomen and pelvis in the matter of diagnosis, and (2) in treatment such an operative exposure as will allow of a thorough exploration of all the organs that may be diseased. In hospital out-patients we quite frequently see women with a small incision in the right iliac fossa through which an appendicectomy has been performed, still presenting a pelvic syndrome, and requiring a further operation on their pelvic organs. These "button-hole" incisions do not offer suitable exposure for the surgery of the female pelvic organs, and their use may be discontinued with advantage.

A CASE OF COMPLETE GASTRECTOMY FOR CARCINOMA OF THE STOMACH.

BY

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(With Special Plate.)

THE patient whose case is here recorded is a labourer, aged 44, who was under the care of Dr. Broughton of Batley; he was admitted to the Batley Hospital on May 24th, 1927. His complaint was painful indigestion, with loss of weight and appetite. He had been in good health up to two and a half years before, when the indigestion started. The pain came on within half an hour of taking ordinary food, was felt in the epigastrium, and gradually passed off before the next meal. At first the pain was relieved by lying down, and sometimes by pressure over the pit of the stomach. The attacks lasted some three or four weeks, and were followed by periods of several weeks of almost complete freedom from symptoms. During the attacks flatulence was a very troublesome feature, and in attempts to relieve himself of this by belching small risings of food occurred into his mouth; apart from this there was never any vomiting of food or blood, and no melaena had been noticed. The bowels were rather constipated. The last attack began in December, 1926, and was continuous up to the time of operation; it was during this period that his appetite failed and the main loss of weight occurred. He had lost about 1½ st. during this time.

On admission to hospital the patient was in fairly good condition, but anaemic and rather flabby. His weight was 8 st. Abdominal examination showed the abdomen to be thin and rather hollowed, and though there was nothing definitely abnormal on palpation, there was a suspicion of an ill-defined lump in the epigastrium. A diagnosis of carcinoma of the stomach was made, and it was thought it might have become implanted on a chronic gastric ulcer. Operation was advised and was performed on May 26th, 1927. The usual right paramedian incision was made, and a growth was found occupying the greater part of the stomach, which was small, thick, and nodular. There were thin adhesions to the pancreas, and several glands were noted along the lesser curvature, especially close to the oesophagus at the origin of the gastric artery. No secondary deposits could be felt in the liver or pelvis. It was quite obvious that nothing could be done to rid this man of his disease other than a complete gastrectomy, and I decided that it was worth while giving him his chance.

The pyloric artery was ligatured and two Payr's clamps applied to the first part of the duodenum. The duodenum was divided between the clamps and the two cut ends cauterized by heat, and the distal one infolded over the clamp; this was slipped out, the suture tightened, and then infolded by a second line of stitching. The gastro-colic omentum was divided along the whole length of the

stomach about 2 in. from it, and the lesser curvature was similarly treated, the gastric artery being ligatured at its origin from the coeliac axis; this enabled me to remove the last palpable gland. Fortunately there were very few of the pancreatic glands involved. The whole stomach could now be lifted up, giving a very clear view of the lower end of the oesophagus. A clamp was applied across the cardiac orifice of the stomach, and by using this as a retractor enough oesophagus could be drawn down to enable me to suture it with reasonable ease to the jejunum. The jejunum was drawn up in front of the transverse colon so that there was no loop left between the part selected for suture and the duodeno-jejunal flexure. The stitching was carried out in the same way as for gastro-enterostomy without clamps, the stomach being cut away little by little as the sutures were inserted. By using the stomach as a retractor until the suturing was practically finished no great difficulty was encountered in uniting the jejunum to the oesophagus.

The patient bore the operation well, and on returning to bed was put on to continuous rectal saline at once. He began sipping small quantities of water at the end of twenty-four hours, and the quantities were gradually increased with the addition of milk and tea, until at the end of ten days he was taking as much as he asked for. Solid food was begun in a fortnight, and steadily increased. He was up within a month, and eating ordinary food in small quantities and often. Although he had lost all desire for food before operation he was now thoroughly enjoying his meals, but had to take them slowly, otherwise he felt a sensation of distension, and almost as soon as he had finished one meal he was feeling hungry again. This is rather a curious occurrence, for we are led to believe that the sensation of hunger is due to gastric contractions.

I had this man treated subsequently with deep x rays, but I am unable to say whether it did him any good or not. He had a kind of lenteric diarrhoea for some months after operation, which gradually disappeared. The man is now (October, 1928) back at work, eating well, enjoying his food, feeling well, and apart from a little anaemia has a normal healthy appearance.

The pathological report on the excised stomach was kindly made for me by Dr. M. J. Stewart, and is as follows:

"The specimen as received consists of the entire stomach, with about 1 in. of the duodenum. The pyloric three-fifths of the organ is largely occupied by a deeply cratered, ulcerated carcinoma, measuring 4½ by 4 in. in its two chief diameters. The centre of the lesion is on the posterior wall, 2½ in. from the pylorus and exactly midway between the lesser and greater curvatures. The growth has extended across both curvatures so as to encircle the organ, only an inch or so on the middle of the anterior wall escaping. The lower margin of the tumour extends to within ¾ in. of the pylorus. The appearances suggest a primary carcinoma with secondary ulceration. The margins are much thickened, undermined, and overhanging, and the contour, while generally circular, is very irregular. The floor, everywhere obviously composed of growth, is irregularly nodular and ulcerated. Externally there are extensive dense adhesions in the lesser sac between the stomach in the region of the growth and the pancreas and retroperitoneal adipose tissue. Pale masses of growth can be seen beneath the serosa, but there is no

evidence of actual peritoneal invasion. Several glands along the lesser curvature are slightly enlarged.

"Histologically the tumour is a carcinoma of great cellularity. In general the structure is spheroidal-celled ('encephaloid cancer'), but there is occasional acinar formation, and in places there is an abundant fibrous stroma. The tumour tissue has completely penetrated the muscular coat over large areas, but nowhere is there a cancer-cell-free sclerotic mass indicative of pre-existing simple ulceration. Many nerve fibres are embedded in the surface layers of the growth subserosally, where there are also some touch-corpuscles in close relation to it. Three lymph glands examined microscopically show extensive invasion."

On November 1st, 1927, I admitted this man to the Leeds General Infirmary for investigation, as I was curious to find out, if I could, how he had compensated for the complete absence of his stomach. At this time he had gained about 1 st. in weight, was feeling fit, and eating ordinary food, though slowly and in small quantities. If he ate hurriedly or large amounts he felt distended and uncomfortable; however, he soon became hungry again. He had a craving for sugar and salt.

FIG. 1.—Showing the extent of the growth after laying open the stomach.

The following results were obtained from various investigations, and I wish to express my thanks to Dr. Scargill, radiologist at the Leeds General Infirmary, and to Dr. Fowweather and Dr. Hartfall, pathologists at the same institution, for their valuable help in this respect.

X-ray Report, November 3rd, 1927.

1. A solid cachet was given. This passed straight into the jejunum; no delay at the anastomosis.
2. Fluid meal. This floods the upper small intestine at once; none is seen to pass backwards into the duodenum.
3. Four hours after giving the barium meal, all the barium is in the lower ileum.
4. Six hours after giving the barium meal, caecum filled; some still in the lower ileum (normal findings).

Blood Examination, November 2nd, 1927.

The blood count showed red cells 4,500,000 per c.mm., leucocytes 2,900 per c.mm., haemoglobin 76 per cent., colour index 0.84.

Film: The red cells show slight variation in size and shape, but they stain well and evenly. The leucocytes show nothing for special comment beyond leucopenia.

Differential count: Eosinophil polymorphs 1 per cent., neutrophils 59.5 per cent., large mononuclears 5 per cent., lymphocytes 34.5 per cent.

Blood sugar: 0.11 per cent. (normal 0.08 to 0.12 per cent.).

Blood cholesterol: 15 per cent.

Urea nitrogen: 19.6 mg. per 100 c.cm. blood (normal 10 to 20 mg.).

CO₂ combining power: 57.5 c.cm. of CO₂ bound as bicarbonate by 100 c.cm. of plasma (normal 60 to 70 c.cm.).

The saliva on November 2nd, 1927, showed alkalinity equivalent to 0.08 per cent. sodium carbonate (normal 0.08 to 0.1 per cent.).

On November 9th an eighteen-hour culture of faeces showed growth of *B. coli*; no pathogenic organisms were isolated; bile salts present. Total solid matter 40.7 per cent. of dried faeces, containing: fatty acids as soaps 17.3 per cent., free fatty acids 16.3 per cent., neutral fats 7.1 per cent. of dry faeces. The faeces contained 17.07 per cent. of dry matter. Fat-splitting appears normal, but there is some deficiency in absorption of the split fat. Microscopic examination showed some undigested muscle fibres present, apparently in greater number than usual. Undigested vegetable material was also present. The urine on the same date was normal.

An attempt was made to recover some of the contents of the jejunum after giving a test meal on the lines of the usual gastric test meal; it was found impossible to get sufficient for examination, I assume because of the rapid passage onward of the food.

I think this case is worthy of publication as the number of cases of successful complete gastrectomy for carcinoma of the stomach is very small. It is remarkable how efficient has been the compensation for total absence of the stomach. Six months after operation, apart from slight anaemia and leucopenia and a little deficiency in fat-splitting, there seems to be no noticeable alteration in the functions of his various systems so far as these can be determined. Possibly the fact that he consumed large quantities of dilute hydrochloric acid at and between meals is partly responsible. It was found impossible to get him to continue this after he had returned to work.

It is now about eighteen months since the operation, and he is apparently quite fit and able to do reasonably hard work, and enjoys his food. He is free from anything which would suggest recurrence, and shows no sign of anaemia, though a blood examination has not been made since last November.

CYSTICERCOSIS OF THE BRAIN:

WITH REPORT OF A CASE.

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(With Special Plate.)

Cysticercus cellulosae is rarely met with in this country, and, so far as we can ascertain, the following case is the only one for many years that has come to necropsy in England.

Description of Case.

History.—The patient enlisted in the army in June, 1918, at the age of 18, and proceeded to India in 1919. In July, 1921, he developed enteric fever, which was complicated by thrombosis of the right leg. In June, 1922, the vision of his left eye became rapidly impaired (vision 6/60), and a report states "atrophy of the retina due to retinitis"; but it is admitted in a note made in the following month (July) that "the diagnosis at present is not definite." Later the eye condition appears to have been attributed to an embolus of the retinal artery, but a further report in October, 1923, states "left vitreous occupied by mass of vascularized fibrous tissue." Eventually the eye was enucleated at the Royal London Ophthalmic Hospital on July 26th, 1924. Dr. H. Coverdale, from the records of this hospital, kindly informs us that the left eye showed ciliary injection, old keratitis punctata, posterior synechiae, and cataract, with no perception of light. The right eye was normal. Unfortunately the pathological notes are missing. In view of his subsequent history, however, it is practically certain that the eye was affected by cysticercus. In April, 1923, his first epileptic fit occurred on the ship returning from India. The fits recurred from time to time at variable intervals; he would have as many as seven in twenty-four hours, but might be free for as long as six weeks; they were both diurnal and nocturnal.

Description of Fit.—A warning usually occurred with loss of power in either hand or in the right leg; unconsciousness followed, and during the attack he frequently bit his tongue and passed urine. The fit was invariably followed by severe headache, and occasionally by paresis of the right arm lasting up to half an hour. After a series of seven fits he once had complete loss of power in

E. R. FLINT: COMPLETE GASTRECTOMY FOR CARCINOMA OF THE STOMACH.

FIG. 1.—Showing the state of affairs one hour after taking a barium meal. This suggests that the upper intestine holds back the meal to compensate for the loss of the stomach.

FIG. II.—Showing the state of affairs five minutes after taking a barium meal.

H. E. SEILER: PNEUMOCONIOSIS.

(See page 982.)

Radiogram of a case of pneumoconiosis, the result of the inhalation of asbestos dust. Showing fine mottling of a silicotic type in both lungs and some evidence of definite fibrosis, especially on the right side.