CASE II.—*Perforated Chronic and Subacute Gastric Ulcers.*

W., 40, male, Cingalese, was admitted with a history of pain in the abdomen for the last six months. The present illness was of six days' duration, during which time the patient had experienced increasing pain and discomfort. No vomiting.

Present Condition.—Abdomen distended, tympanitic, and tender. Both pain and tenderness were specially marked down the right side of the abdomen and in the epigastric region to the right of the middle line; this was also the case with rigidity. Liver dullness normal. Right flank dull; left tympanitic. Expression anxious. Tongue glazed. Pulse rapid and feeble, 154 per minute. Breathing thoracic. Scanty response to soap and castor-oil enema.

The symptoms referable to the stomach (pain aggravated soon after ingestion of food and relieved on vomiting, etc.) and the site of tenderness and rigidity enabled me to come to a diagnosis of perforated ulcer of the stomach rather than one of the duodenum, although symptoms simulating appendicitis more often accompany perforations of the duodenum. Against appendicitis were the facts that the rigidity was not confined to the right iliac fossa and its environment, but encroached significantly on the epigastric region; added to this was the history of marked digestive disturbance.

Operation.—An incision was made through the right rectus, and disclosed at the very outset dense adhesions between the stomach, liver, colon, and small intestines, disfiguring considerably their normal relations. On cautiously separating the more superficial and tractable of these, gas was heard to escape, and a large opening was found high up and far back against the under-surface of the liver to which its edges were firmly fixed. No attempt was made to close this opening for fear of breaking through adhesions which seemed to shut out the general peritoneal cavity. A drainage tube was inserted into the stomach through the perforation and brought out at the abdominal wound to which it was fixed. The area round the perforation and tube was packed with gauze and a suprapubic drain inserted. The patient expired ten hours after operation.

Post-mortem Examination.—Dense adhesions of stomach to liver, colon, small intestine, and pancreas. Two perforated ulcers were found: (1) Chronic perforated ulcer with indurated edges and dense adhesions to under-surface of liver; situated on the lesser curvature midway between cardia and pylorus. The floor of the ulcer was partially formed by the liver and pancreas about their tuber omentale. It admitted the index finger. This was the ulcer into which I had introduced the drainage tube. (2) A subacute perforated ulcer, admitting index finger, situated on anterior stomach wall in the lower segment of the antrum pylori about 1 in. from the greater curvature. This ulcer was subacute in type, presented no indurated edges or stable adhesions, was the ulcer which I failed to detect at operation, and was, I have no doubt, responsible for extravasation down the colon, and death.

The extravasated stomach contents were shut in by adhesions which limited them to the epigastric region except for a leakage which had tracked down to the right kidney pouch of Morrison, and thence down the ascending colon to the region of the caecum; both the latter were gangrenous, putrid, and perforated, and were responsible for the tenderness and rigidity simulating appendicitis. The appendix itself was neither inflamed nor adherent.

CASE III.—*Perforated Duodenal Ulcer.*

S., 37, female, Tamil, was admitted in an exceedingly serious condition. The pulse was quick, feeble, and scarcely perceptible. The extremities were cold; facial expression very anxious; respirations hurried and thoracic; temperature 98°; vomiting not present. The abdomen was rigid and tender all over; when asked to show painful and tender area, she passed her hand above, below, and around the umbilicus.

I was only able to gather the following meagre previous history: Duration of illness two days; the onset did not appear to be strikingly sudden. No previous history of gastric pain or dyspeptic symptoms. Pronounced constipation, not relieved by enema.

In view of the general tenderness, rigidity, and pain, and the absence of a definite localizing sign or symptom, I could arrive at no definite diagnosis as to the cause of the peritonitis.

Operation.—I made a subumbilical median incision and encountered, free in the peritoneal cavity, a large quantity of grumous bile-stained fluid redolent of a native decoction of offensive odour called a "Kassaye." There was some plastic peritonitis and lymph flakes were adherent to coils of intestine. The omentum was invisible. I next explored the stomach by an incision through the right rectus and found the omentum tucked away and adherent in the direction of the pylorus and duodenum. The omentum was easily dislodged, and a perforation about $\frac{1}{2}$ in. in diameter was noticed on the anterior surface of the duodenum about $\frac{3}{4}$ in. from the pylorus, and through it bile-stained fluid and gas escaped. The tissues round the perforation were much indurated and tore through when I began suturing; however, with great care I succeeded in placing a continuous Lembert in the direction of the long axis of the gut, doubling in the edges of the perforation. On this an

omental graft was secured. The patient was in a bad way, and I was constrained to mop up quickly the extravasated contents of the stomach, to insert drains into the pouch of Douglas and the vicinity of the perforation, and to close the greater part of the abdominal wounds. The operation lasted twenty minutes. The patient succumbed one hour after operation. Saline proctoclysis, adrenalin, and stimulants proved of no avail.

Post-mortem Examination.—Perforation on anterior wall of the duodenum. Looked at from inside (see illustration) the ulcer presented the appearance of a longitudinal fissure situated in the midst of an elevated and indurated ridge which not only encroached on, but also extended across the pyloric sphincter. In this connexion W. J. Mayo's finding that often pyloric ulcers are found to have their origin in the duodenum and differentiation between the two is difficult, is of interest.

CASE IV.—*Traumatic Perforation of the Stomach.*

J., 10, male, Cingalese, came in with an oblique wound in the epigastrium, said to be the result of an accidental impalement on a stick which he happened to be carrying in his hand, and on which he fell over whilst running. His appearance gave not the slightest clue to a severe abdominal injury. However, as the wound was penetrating, I had the patient anaesthetized for exploration.

Operation.—At the inception of anaesthesia a large quantity of undigested rice was vomited, which I afterwards ascertained he had partaken of just before the accident occurred. I did not wash out his stomach for obvious reasons. The wound was enlarged upwards, and on exploration with the finger I found it enter easily into an opening in the anterior wall of the stomach a little above the attachment of the great omentum. The abdominal and stomach wounds did not correspond in position, the former being placed at a higher level, owing to the oblique direction of the injury. There was not the slightest trace of leakage of the stomach contents, although the stomach had received a large meal of rice and curry just before the receipt of the injury, and had remained full until a few minutes prior to operation.

The opening in the stomach was carefully closed by a double row of sutures, and a cigarette drain was inserted down to it. The greater part of the abdominal wound was closed—at the time I did not think further interference indicated. Twelve hours later, however, when tympanitis began to appear, I made a suprapubic incision, and removed a small quantity of clotted blood which had gravitated down to the pouch of Douglas. The pelvis was drained, and saline proctoclysis administered. Evening temperature, 102°. The next day it came down to 99°, and from that time onward convalescence was uninterrupted, and the patient made a good recovery.

The most feasible explanation I can offer for the absence of escape of the contents of the stomach through a hole which admitted the index finger easily is that the rice was welded into a plastic coherent mass; also, owing to the obliquity of the wound, the aperture was perhaps valvular. The meal had been taken ten hours before the operation, and had apparently remained in the stomach for that time; whether Nature had suspended gastric motility and function as a means of protection is a point open to speculation.

RUPTURE OF THE ABDOMINAL WALL, POST-OPERATIVE AND SPONTANEOUS.

BY

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RUPTURE of the abdominal wall is a post-operative sequel of which little mention is made in the textbooks of surgery, although it is not a very rare occurrence. I refer to the cases in which the approximated edges of the abdominal wound completely separate, and the intestines are extruded through the opening, not to the common presentation of a knuckle of bowel after removal of a drainage tube.

It is most commonly found after suppuration, and frequently after a stitch abscess which burrows amongst the muscles. It would appear that the omentum, in addition to its many other uses, tends to prevent such an accident. In a series of experiments on cats, Wilkie¹ found that when sepsis developed after abdominal operations, 5 per cent. died from rupture and prolapse of the viscera; where, however, he had removed the omentum, 85 per cent. died from prolapse. He therefore advises that when an abdominal wound has been exposed to infection the omentum should be spread out behind it before suturing up the abdominal wall.

Other causes are too early removal of stitches, and too great hurry in getting the patient up after operation. Sir Alfred Pearce Gould¹ has drawn attention to this latter danger, and has pointed out that the integrity of the abdominal wall cannot be judged by the mere appearance of the skin union. In one case I saw the prolapse occurred about half an hour after the removal of the stitches on the tenth day, although at the time of removal the union was apparently firm. It is rather surprising that in nine cases which I have come across the accident has usually occurred in the second week, and not in the days immediately following operation, the average being on the tenth day.

It frequently occurs in stout individuals with much subcutaneous fat (one of the cases being in a woman of 18 stones), and in those debilitated, for example, by carcinoma. Straining for any reason, such as post-operative vomiting or bronchitis, tends to favour the accident, while, lastly, the use of catgut as an abdominal suture has been said to favour its production.

As regards the usual site, in one case the incision was through the right rectus in a gall-bladder operation, in another in the middle line above the umbilicus, while in the remaining seven it was in the middle line below the umbilicus.

In all 9 cases secondary suture was done as soon as possible under general anaesthesia. Of the 9, 6 recovered and 3 died.

Spontaneous rupture of the abdominal wall is a very rare occurrence, and I have been unable to discover any similar case to the one I now report.

E. H., aged 74, an inmate of Paddington Workhouse, had a severe attack of coughing on the afternoon of June 15th, 1911. A few hours later she complained of feeling faint, and I was called to see her. She had been put to bed, and I found her underclothing drenched with blood, and several coils of small intestine and omentum protruding through a wound about 2 in. in length in the middle line, rather nearer the umbilicus than the pubis. Bleeding was proceeding from a wound in the mesentery.

I had her transferred immediately to the infirmary, and anaesthetized her with C.E. mixture. It was interesting to note that peristalsis, which was exceedingly active in the extruded coils of intestine, came to a complete standstill during the administration of the anaesthetic. A piece of omentum was ligatured and cut off; the rent in the mesentery, which was about 3 in. long and at right angles to the long axis of the bowel, ran close up to but did not involve the bowel, and was closed by a continuous catgut suture, which checked the haemorrhage. The intestines were washed with warm saline, and easily replaced after slightly enlarging the opening in the abdominal wall. The linea alba was very thin and broadened out, the opening being exactly in the middle line. The recti were widely separated, their inner edges being about 5 in. apart, and as the patient was rather collapsed I made no attempt to approximate them, but closed the abdomen by superficial and relaxation sutures, after removing some redundant skin.

The patient made an uninterrupted recovery; her temperature once registered 99° F. but otherwise remained normal, and the wound healed by first intention. She got up on the twenty-first day, wearing a support made by the sister of the ward, and was discharged on August 9th.

The patient had had only one child; she suffered from ventral hernia, for which she had formerly worn a truss, but had discarded it many years ago. No sign of a scar could be made out, but the skin of the abdominal wall was very flaccid. Since her discharge she has enjoyed good health and performed light household duties. On examination on April 15th of this year the interval between the lower part of the recti was found to be almost circular, the vertical diameter of the ring measuring 5½ in., and the lateral 5 in.

I am indebted to the Medical Superintendent, Dr. M. F. Squire, for permission to publish the case of E. H.

REFERENCES.

¹BRITISH MEDICAL JOURNAL, October 28th, 1911, page 1103. ²Ibid., December 9th, 1911, page 1517.

DR. ALFRED GREENWOOD, M.O.H. Blackburn, and Dr. J. T. C. Nash, Medical Officer for Norfolk, have been elected Fellows of the Royal Sanitary Institute.

A MEETING to form a South London branch of the Social Welfare Association is to be held at the Horns Assembly Rooms, Kennington Park Road, S.E., on June 3rd, under the chairmanship of the Bishop of Southwark. One of the objects in view is stated to be to promote the health of the industrial community by securing effective administration of the health provisions of the National Insurance Act.

STRANGULATED OMENTAL HERNIA WITH FEW SYMPTOMS:

REPORT ON THE SPECIMEN FROM MR. A. Z. C.
CRESSY'S CASE.

By RUSHTON PARKER, M.B., B.S., F.R.C.S.,
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THIS important and instructive case was related by Mr. Cressy in this JOURNAL on November 5th, 1910. A comment by me appeared on November 12th, and Mr. Cressy's reply on November 19th. In order to form for myself a clear idea of the nature of his specimen I asked him to let me see it, which he promptly and very kindly did. He has also given me permission to publish this report of the same. I found it mounted in first-rate museum fashion, and had it photographed on both sides, while immersed in spirit in a bowl.

The soft unaltered omentum is quite a small portion of the preparation, shown in the upper part of the plate in the form of a narrow tail, of which the free end is that cut from the colon. The rest of the omental mass is swollen, firm, and rounded for the most part, having its surfaces seamed with cicatrices almost everywhere.

The specimen had lost colour during nine months, as he stated, and on coming into my hands the liquid in the jar had already a red tint, which deepened after a few days in the warm room in which I kept it. Having Mr. Cressy's permission, I cut out a wedge and then had the specimen photographed again, showing in the plate the wedge lying loose on the tail and the hole from which it was cut. The dark colour of both gives some idea of the deep purple, almost black, colour of the inside as still existing. That of the outside is already faded.

This deep blackish appearance is due to effusion of blood, tightly distending the greater part of the omental mass, and evidently, as Mr. Cressy says, spreading upwards into the abdomen, but prevented from becoming more diffuse by the inelastic scarred omental surface. Such scarring is not uncommon in old omental herniae, but the degree here is unusual.

Microscopical examination of the wedge shows everywhere closely packed red blood corpuscles with white corpuscles in varying minor proportion, but no atrophy or other change in the tissues, and nothing compatible with either gangrene or inflammation.

The lower edge of the specimen already unfolded by Mr. Cressy and spread out below his horizontal glass rod shows the part that was confined in the hernial sac, the main lump having been the "hard mass extending as far as the middle line like a sausage." (November 5th, p. 1401.)

Remarks.—It is evident from the statement in my letter of November 12th, 1910, p. 1562, and from this report, that the case presents itself to me in two aspects—(1) the clinical emergency, and (2) the significance of the pathological anatomy.

1. I have already spoken definitely in approval of the prompt and effectual way in which the emergency was dealt with. When surgeons undertake emergencies of the kind they cannot always correctly foretell what they are to find. In any case, in hernia a good old rule is: "When in doubt, operate." But Mr. Cressy was not in doubt. He was certain that operation was required, and he was right. Our operations are often right even when the motives differ. Yet even here the motive was the only one possible—namely, to deal with an unreduced hernia in which were present some of the symptoms that may attend so-called "strangulated omental hernia." No prudent surgeon would have refrained. But inside he found something quite unexpected. One of the charms of surgical practice, to those who view it with artistic interest, is the frequency with which "the unexpected happens." He was astonished, very justly, at the black omental mass he found; but that did not prevent him from finishing his operation in first-rate style; and of course his patient got well.

2. Where I do not see my way to agree with him is in the significance of the pathological anatomy. The blackness truly spreads inwards from the stricture at the neck of the sac to the far end of the lump within the peritoneum; and if the condition had been one of "gangrene,"