weeks after the attack beginning in March. The first abnormality noted was a swelling exactly in the middle line at the back of the abdominal cavity, under a tightly bound down coil of small intestine which lay transversely at and rather overhanging the brim of the pelvis. The anatomical right side of the mesentery of this coil was above and anterior and free from adhesions, but the left, posterior, side was fixed. The appearances have been very well, but of course somewhat diagrammatically, reproduced by Mr. M. H. Lapidge in the accompanying drawing. The condition at first suggested to me the existence of a mass of caseating glands causing adhesions of only one side of the mesentery. It was at once clear that the flatulent condition of the intestines had prevented the examining hands from palpating the abnormal condition now discovered, and that neither I nor any of the medical men who examined the patient with me had detected evidence of mischief in this situation. On passing my finger into the pelvis I found the oval swelling which had been defined and which proved to be a cystic mass. On separating it, several cavities containing clear fluid were opened, but it was not certain whether the abnormal part was a collection of thin-walled ovarian cysts or of serous fluid in connective adhesive tissues. When separated little was left except shreddy material, which, together with a ragged but otherwise healthy Fallopian tube, was hastily removed at the end of the operation. Some adhesions of the left ovary and Fallopian tube were not disturbed. I again examined the centre of the abdomen, and was able to trace the displaced vermiform appendix under the bound-down coil of intestines, where it was firmly fixed by adhesions, except about $\frac{1}{2}$ in. or rather more of its base which appeared fairly healthy externally. The mass, which at first I supposed to consist of caseating glands in the mesentery, was obviously the appendix inflamed and adherent behind it. On separating the attachments I suddenly opened an abscess cavity about the size of a pigeon's egg containing thick pus. The walls of the abscess were formed by mesentery and small intestine, the peritoneum of the posterior wall of the abdomen being only slightly involved. When separated and spread out the suppurating surface was so extensive, and the bowel wall in places seemed so deeply ulcerated, that I thought it safer to perform a resection of intestine than to attempt to clean and drain the foul surfaces. It seemed easier to remove also the part between the abscess and the caecum, and accordingly about 12 in. of the lower part of the ileum (9½ in. when shrunk by spirit) and the vermiform appendix were removed, a considerable opening being made in the wall of the caecum into which the remaining lower end of the small intestine was inserted and fixed by catgut sutures supported by one or two of fine silk. With the bowel the whole of its mesentery and some adjacent suppurating peritoneum were taken away, and the abdomen was closed without drainage. The proximal portion of the appendix was patent in this case also, so that the abscess cavity would appear to have been draining through it at the time of the operation. The patient suffered severely from shock, causing Mr. Davis much anxiety towards the end of the operation, and I felt greatly indebted to him for the perfect way in which he managed the anaesthesia.

Result.—The patient complained of great pain for several days, but apart from this and the shock her recovery was uneventful and complete. For some weeks she seemed to be conscious of the passage of flatus or faeces from the small to the large intestine. I saw this patient in February. The abdomen was then soft and free from any tenderness, and the general condition was in every way satisfactory. The latest account is also good.

REMARKS.

It seems fairly certain that in the first of these cases a sufficiently prolonged care of the health would have led to a practical, if temporary, cure by a process of granulation with discharge of pus into the appendix, the small abscess cavity being gradually replaced by cicatricial tissue.

In the second case, also, there appeared to be a discharge of the contents of an abscess through the remaining portion of the appendix, for there can be no doubt that the abscess formed during the illness in which I first saw the patient. In both cases the escape was so free that symptoms of confined pus ceased to be obvious, and the patients were able to get about for a time apparently quite convalescent, each, nevertheless, having a distinct though small abscess within the peritoneal sac. How completely either case could have been cured without operation is an interesting speculation. In the first case an absolute closure of the minute abscess cavity would not directly have given rise to further trouble, but in the second the abscess could only have been closed by binding together the surfaces of the coil of intestine around it. Such a result would have been very likely to induce chronic attacks of colic, with the possibility of acute intestinal obstruction supervening. In fact, it is probable that as much discomfort and danger would have arisen from this as from the liability to further attacks in the remaining part of the appendix. Moreover, a recurrence and possibly a much more serious illness would have been practically

certain to follow sooner or later in both cases even if obliteration of the abscesses had occurred.

The fact that patients may apparently become completely convalescent when an intraperitoneal abscess is still unhealed, is especially interesting and important in connexion with the question of diagnosis. When an abscess penetrates the wall of the vermiform appendix it may be considered certain that the natural passage of its secretions into the caecum is closed for the time. The relief of tension brought about when the ulcerative process passes beyond the walls of the appendix into looser tissue is one of the causes of the abatement of symptoms—the period of repose—which is often so deceptive in these cases.

But a relief of tension is beneficial in all forms of inflammation, and in the cases under consideration it may be fairly concluded that, either by altering the direction of the lumen of the appendix or by causing the inflammatory thickening of its mucous membrane to subside, the relief of tension led to, or at least was accompanied by, a reopening of the passage of communication between the appendix and the caecum in each case. If this had not happened the abscesses, although released from the strong bounding walls of the appendices, would have again tended to become tense after a very few hours, and would then have caused a recrudescence of the symptoms, a rise of temperature and pulse, and an increase of the size of the pus cavities. As it turned out in these two cases, the period of repose became a period in which a cure was possible, at least temporarily, by healing of the abscess cavities from the bottom, but in which extreme danger would have arisen immediately if the communication between the appendix and the caecum had again become occluded. There was, in fact, an indefinitely prolonged "period of repose." The danger showed itself, though in a mild form, in the last attack in the second case. As I interpret the symptoms there can be no doubt now that this patient suffered from appendicitis for at least six years, possibly from childhood, and that her Fallopian tubes were never at fault.

When the ovary and appendix are in contact, as in the first case above recorded, a definite diagnosis is obviously very difficult, and may even be impossible. In the second case, although my inclination to diagnose appendicitis was founded on a correct interpretation of the symptoms, the physical signs, so far as they were discovered, were decidedly against this view.

THREE CASES OF GASTRO-JEJUNOSTOMY.

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THE operation of gastro-jejunostomy is nowadays such an everyday occurrence that, unless it were thought that some special point was being brought out, one would scarcely be justified in bringing forward the following three cases.

The first is of sentimental interest in that the patient was a lady aged 91, who had lived in five reigns, and remembered being carried in a sedan chair in the Strand.

The other two cases are, I venture to think, of extreme practical interest, in that in both cases chronic inflammatory growth around an ulcer simulated carcinoma so closely that the latter diagnosis was made in each instance.

CASE I.

A female patient, aged 91, whose life-history was excellent except for an attack of general eczema twelve years previously. Beyond this and occasional bilious attacks, she had never had any illness.

Previous History.—At the commencement of 1905, the patient had all the signs of a dilated stomach—vomiting large quantities of fluid which was on various occasions of coffee-grounds character, tenderness over the pylorus, no cachexia, no great loss of flesh.

Progress and Diagnosis.—In March, 1905, Dr. Hale White saw the patient in consultation with Dr. Grigg, and it was agreed that there was evidently pyloric obstruction, and as the patient was suffering, and going downhill, it was decided that in spite of the great age of the patient, an operation was urgently needed for her relief.

Operation.—A posterior gastro-jejunostomy was carried out on March 31st. Extensive thickening and ulceration of the

pylorus was found, and the liver and pyloric end of the stomach were all matted together. The stomach itself was much dilated.

Result.—The patient made a good recovery, and from April to December, 1905, regained weight, had a good colour, and was able to take out-of-door exercise. She could take her ordinary diet, but, as heretofore, had occasional bilious attacks. At the end of December patient had cerebral thrombosis, and died about fourteen days ago.

CASE II.

A male patient, aged 57, was admitted to Charing Cross Hospital on December 4th, 1905, suffering from gastric pain.

Fig. 1.—The darkened outline shows the growth as seen at the first operation.

Symptoms.—The pain came on about four months previous to admission. It was of a sharp shooting character, always starting in the same place and radiating across the abdomen. The pain became more and more severe, and lasted for longer periods, much worse after food, always bad at night, keeping the patient awake. No vomiting and no nausea, considerable

Fig. 2.—Showing the condition at the second operation.

loss of weight, and great tenderness on pressure over the stomach region. The patient was profoundly anaemic.

Operation.—The abdomen was opened on December 11th, and on the stomach being pulled forward a large growth was exposed, involving the lesser curvature and extending to the pylorus, but not to the cardiac end (Fig. 1). It was thought that the growth could be removed, but having regard to the general

Fig. 3.—The inner dotted line shows the position of the ulcer situated on the posterior wall and adherent to the pancreas.

condition of the man, it was considered best to do a gastro-jejunostomy now, and leave the major operation until later. This was accordingly done.

After-progress.—The patient made a good recovery and got up on the tenth day. He left the hospital at the end of the third week, and was readmitted a week later. All pain had

disappeared within thirty-six hours of the operation and there had not been any return of it. The patient was eating and sleeping well, had put on weight, and was obviously greatly improved in health.

Second Operation.—On January 10th, 1906, the abdomen was again opened, and the stomach pulled forward; it was seen that the "growth" had to a great extent disappeared (Fig. 2). Enlarged glands were found in the omentum, but they were not characteristic of new growth. The growth was now entirely on the posterior surface, near, but not quite reaching, the lesser curvature. A circular ulcer with a clear-cut edge was felt through the anterior wall. The ulcer itself was adherent to the pancreas (Fig. 3).

Result.—The wound was closed, and the patient left the hospital twelve days later. He was last seen on March 26th. He takes ordinary diet, has no pain, has gained a stone in weight, and looks well and healthy.

CASE III.

This patient, a woman aged 39, was admitted to St. Luke's Hostel under the care of Dr. de Havilland Hall, on January 29th

Fig. 4.—The growth seen at the operation in Case III.

this year suffering from gastric pain and general nervous depression. She began to have pain about the first week in December, 1905, and had been treated for nervous dyspepsia at Windsor and gastric neuralgia at Brighton.

Condition on Admission.—The patient complained of severe abdominal pain, going through to the back; the pain was better after food; she had been very sick at times, the vomit containing a little blood. She could not sleep nor eat, had bad dreams, and was depressed and constipated. Nothing was made out on examining the abdomen as the patient was hypersensitive, and even slight pressure caused pain. I saw the patient in consultation with Dr. de Havilland Hall on February 6th, and it was decided that a gastro-jejunostomy should be done.

Fig. 5.—Showing the large ulcer on the posterior wall with the perforated vein running across the floor

Operation.—The operation, for various reasons, unfortunately, was postponed until February 13th. On opening the abdomen an extensive growth was found occupying the cardiac end of the stomach, which was considered malignant and quite impossible to remove (Fig. 4). Posterior gastro-jejunostomy was done in the hope of relieving pain by the quicker outlet thus obtained.

Result.—The night of the operation was most satisfactory in that the patient was almost free from pain; this was noticeable all along until, on February 16th, at 12.15 p.m., the patient became collapsed and vomited some blood. Dr. Hubert Roberts did everything possible, but the patient gradually became more exhausted and died twelve hours later. The *post-mortem* examination showed that what was taken for a malignant growth was chronic inflammatory thickening around a large ulcer situated high up on the posterior wall in the lesser curvature towards the cardiac end. Death was due to haemorrhage from an oval opening in a large vessel running along the floor of the ulcer (Fig. 5). It was interesting to

note the perfect mechanical safety of the gastro-jejunostomy on the fourth day of the operation.

Remarks.—Additional interest in the first case, that of the old lady, is that it is a good example of the fact that even very old people stand operations well when their tissues are young, and the number of years a patient has lived is not in itself a bar to even a considerable surgical operation.

In Case II all of those present at the first operation were sure that the growth was malignant, and I regretted at the time that I did not think the man's general condition warranted me doing a partial gastrectomy. It was a matter of great surprise and satisfaction to see, when the abdomen was reopened, how the mass had melted away.

I have been so much impressed with this case and the next that I am strongly inclined to think that in a large number of cases where partial gastrectomy is under consideration it would be always as well to do a preliminary gastro-jejunostomy. The operation in either case is of material benefit to the patient. The pain suffered is much less or entirely disappears, and peaceful sleep is procured. The diet can be increased and the food is digested.

If a partial gastrectomy is ultimately necessary the patient is in much better case after two or three weeks than when the abdomen is first opened, and the time lost makes no material difference in the possibility of removal of the growth.

In the third case when the stomach was exposed the condition looked so hopeless that I nearly closed the wound without doing anything further.

The effect of the operation on the patient was interesting, and most satisfactory during the three days that she lived. The drawn, pain-stricken appearance of her face disappeared, and she lay in bed quite comfortable and placid.

I was fortunately able to procure a *post-mortem* examination—which I was anxious to get—to see whether this case was also only inflammatory growth around ulcer; this, as the specimen shows, it proved to be, and a microscopical section of the tissue near the ulcer is a further proof of it.

The lesson this third case teaches is that delays are dangerous in cases of gastric pain which are well marked, and do not readily respond to medical treatment. Under such circumstances the abdomen should be opened and the stomach examined. A gastro-jejunostomy can be done, and if there has been haematemesis to any marked degree, the stomach should be opened through healthy tissue in the neighbourhood of the ulcer, and the ulcer either cauterized, cut out, or ligatured to prevent further haemorrhage.

THE RELATION OF ULCERATIVE COLITIS TO DYSENTERY.

By A. E. CARVER, M.D., M.R.C.P.,
TORQUAY.

THE brief notes recorded below appear to have some bearing on the views put forward in Dr. Saundby's interesting paper on endemic sporadic dysentery in England. In addition to the case described at length by Dr. Saundby, there is some evidence that the bacillus of Flexner and Shiga does, occasionally at all events, occur in cases of colitis.

In 1903 Mr. Foulerton, of the Middlesex Hospital, very kindly tested for me the agglutinative power of the blood of three patients suffering from ulcerative colitis. One gave a positive result, whilst the other two were negative, the dilution in each case being 1 in 40. A positive reaction had previously been obtained by Mr. Foulerton¹ in six cases of dysentery and in one of acute colitis, and in no other disease was the reaction obtained with a dilution greater than 1 in 10.

It has been pointed out, by Flexner I believe, that the agglutinative reaction is obtained in cases of dysentery comparatively early in the course of the disease, and that it disappears also at an early date. This is hardly to be wondered at considering how great are the chances of a secondary infection occurring from the large bowel, and it seems not unlikely that the nature of such secondary infection may determine the clinical variety of the colitis.

In the autumn of 1902* there occurred in North London

a sharp outbreak of acute colitis, an account of which was read before the Medical Society of London. The disease presented the symptoms and pathological lesions of acute bacillary dysentery, and seemed also indistinguishable from the acute cases of asylum dysentery described by Dr. Gemmel.² I was able to find a published account of only one similar outbreak, that described by Dr. Cautley,³ which occurred in a London barracks during the summer of 1900; but I have been informed that a similar condition prevailed at Aldershot about the same time, and that an account of it was read before the Epidemiological Society.

It will be remembered that shortly after the conclusion of the late Boer war a good deal was heard of "typhoid infected blankets" brought home from South Africa. Now, typhoid fever and dysentery were of almost equal prevalence during the war, and if the one infection were brought home it is not unreasonable to suppose that the other may have been conveyed in like manner. A consideration of the times and places at which the above epidemics occurred would seem to lend colour to such a conjecture.

A sequence of events which occurred at the Great Northern Hospital in 1902, and again at the Westminster Hospital in 1903, seems also to suggest that there is some relationship between acute colitis and the more chronic ulcerative colitis. During the nine months included between October, 1901, and June, 1902, there were admitted into the Great Northern Central Hospital 5 cases of ulcerative colitis, the last of which was followed in three weeks by the first case of acute colitis, and this was in the person of one of the nurses of the hospital. No other cases of either disease had been in the hospital during the previous four years certainly, and possibly not during a longer period.

Again, during April, 1903, two cases of ulcerative colitis were admitted into the Westminster Hospital, and a fortnight later there appeared in the children's ward an outbreak of bloody diarrhoea, of which one patient died. The bowel presented the lesions of acute colitis. These events may well be mere coincidences, but it would be interesting to learn whether any similar sequences have occurred at other hospitals.

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THE EFFECT OF X RAYS UPON THE LEUCOCYTES IN THE BLOOD AND BONE MARROW IN LEUKAEMIA.

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THE extraordinary results which have been obtained from the treatment of leukaemia by exposure to the x rays are well known. Clinically the action of the rays is manifested by a rapid diminution of the enlarged spleen, and a great reduction in the number of leucocytes in the blood, as evidenced by the leucocytic count. From so great a number as 500,000 per cubic millimetre, or about fifty times the normal, the leucocytes may fall gradually to the normal. The large finely granular myelocyte, and the large coarse granuled eosinophile myelocyte, which give the blood in leukaemia so distinctive a character by their presence, and which are not usually to be found in normal blood, are rapidly reduced in numbers, and have been said to disappear entirely.

When one states that the presence of these large myelocytic cells is distinctive of this disease, one is brought face to face with the problem of myelogenous leukaemia as opposed to simpler leucocytosis. They are clinically regarded as different conditions.

Apart from physiological leucocytosis, which is rather of a lymphatic than a myelogenous origin, I consider we are in a position to distinguish two forms of pathological leucocytosis only: (a) one in which the excess is due to an increase of the lymphocytes derived from the lymphatic glands and tissues—a lymphocythaemia, lymphæmia, or lymphocytosis; and (b) one which is due to an excess of cells derived from the marrow—a myelocythaemia, myelæmia, or myelocytosis.

* Abstracted from thesis for degree of M.D., Cambridge.