which she was keeping the catheter surrounded by healthy skin. She had been running in only a small amount of olive oil and soap and water daily, but the growth was advancing and the amount required to be increased. She was under the observation of Dr. Glegg of Datchet.

(b) Male, aged 58, with inoperable cancer of the rectum at the level of the promontory, of which there had been symptoms for more than a year. Appendicostomy was done on November 2nd, 1910. A year later he came to the hospital to see me; he had been working meanwhile as a packing-case maker. He had passed a catheter through the fistula for three months, then, finding he could regulate his bowels by aperients through the mouth, he had omitted to pass it, and the fistula had become covered by a thin skin. He had latterly felt himself getting weaker, and proposed to work half time; the growth had made some advance. He attended again on November 25th, 1912—that is, two years after the operation; he had continued at work, and only complained of what he called “chronic diarrhoea.”

(c) Male, aged 63, bachelor. A large fixed mass occupied the left inguinal region, in the centre of which was an abscess coming forwards to the surface, and upon this intestinal obstruction had supervened. Appendicostomy was performed on October 9th, 1909, and at the same time the abscess incised; it seemed to be situated in the middle of a mass of cancer round the sigmoid flexure. On November 28th he was able to leave the nursing home with the abscess healed. On February 10th he had recovered sufficiently to resume his previous active life, the bowels acting well when fluid was run into the fistula, and from which there was no regurgitation. He could manage this himself, and had only a manservant to attend on him. The mass in the left inguinal region had shrunk to a hard fixed mass. He continued under the observation of Dr. C. P. Sampson. In September, 1911, a friend who travelled with him on the Continent described him as in magnificent health.

Perhaps time may prove that in this case the disease was really inflammatory.

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² Discussion on Cancer of the Rectum and Pelvic Colon, by Mr. W. E. Miles and others, at the London Meeting of the British Medical Association (*BRITISH MEDICAL JOURNAL*, 1910, ii, 941), and by Mr. Harrison Cripps and others at the Liverpool Meeting of the Association (*BRITISH MEDICAL JOURNAL*, 1912, ii, 843).

GANGRENE OF THE VERMIFORM APPENDIX AND OF A COIL OF SMALL INTESTINE: OPERATION: RECOVERY.

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THE conditions in the case related below seem sufficiently unusual to be put on record:

A single woman, aged 31, gave the following history: In May, 1911, she had an attack of pain in the right side of the abdomen, which ceased after a few days. Six months later, on November 2nd, at 2 a.m., she was again seized by a similar but more severe and continuous pain. Dr. D. M. Mackenzie of Southall saw her, and diagnosed acute appendicitis. The bowels acted, but the pain increased rather than diminished. The woman, who was in domestic service, was taken in a cab to her own home on November 2nd, and was admitted to the Samaritan Free Hospital at 7 p.m. on November 4th, sixty-five hours after her illness began.

She was then flushed, and looked very ill. The temperature was 100° F. The abdomen, which moved only slightly in respiration, was tender and distended, there being marked resistance to pressure over the caecal region. The rectum was loaded, and an enema caused the bowels to act, after which the distension of the abdomen subsided, and all pain ceased.

When I saw the patient, about two hours later, she still looked very ill, but the flushed condition had given place to extreme pallor, the pulse was feeble (140), and the abdomen was flaccid, there being neither pain nor tenderness nor resistance to palpation anywhere. By combined pelvic and vaginal examination an ill-defined soft mass of tissue was felt in the upper part of the pelvis on the right side. The woman was not collapsed, and she felt very much better when the pain ceased. The relief was so great that I hesitated about operating, but the history and the conditions observed seemed to indicate that an examination by incision was necessary.

At 10 p.m., sixty-eight hours after the first onset of pain, a short incision was made parallel to Poupart's ligament on the right side, and immediately several ounces of bluish-black fluid of the consistence of serum escaped from the wound. This fluid had no resemblance to pus. It was apparently free in the peritoneal cavity, and my first impression was that a ruptured extrauterine foetus existed, and that the indefinite mass in the pelvis was blood clot. Further examination showed that a piece of intestine was gangrenous, and a second incision was made in the middle line to allow free access to the parts. A loop of small intestine in a necrotic condition was partially and lightly adherent round the lower end of the caecum. This coil after

being easily separated was wrapped in swabs, and placed out of the way in the middle of the abdomen. It was then seen that the vermiform appendix was gangrenous and perforated. It was adherent to the inner side of the caecum, and had been surrounded by the dark coloured fluid most of which had already escaped or been swabbed away. The appendix was removed by crushing and ligaturing its base and inverting the stump by a purse-string suture.

Then the unhealthy portion of small intestine was again exposed. It had a faintly putrid odour, and its surface over a length of about 12 in. was dead, being in some places quite black, in others having various shades of grey. The junction between the diseased and healthy parts was well defined. The bowel was double-clamped and divided above and below the necrosed portion and the mesentery of the isolated piece was cut away. There was just enough small intestine left attached to the caecum to allow a lateral anastomosis to be made after inverting and securing the retained divided ends of the bowel.

The peritoneal cavity was drained through both incisions, and there was a very free discharge of yellow serum for a few days, but except a looseness of the bowels, which continued for rather more than a week, there was no complication of any kind during convalescence, the highest temperature being below 101° F.

The patient came to the hospital on March 22nd, 1912, four and a half months after the operation, to report that she was quite well and that the bowels gave no trouble. She wished to know if she might emigrate to Canada, and I thought she might safely do so.

The necrosis of a coil of small intestine which occurred in this case is a condition which I have not seen before in association with gangrene of the appendix. Some years ago¹ I suggested that gangrene of the appendix frequently occurred without any symptoms until after a portion of its wall had died. I published a case² in which profuse haemorrhages from an opened appendix abscess cavity were associated with areas of gangrene.

These were seen when the apposed and apparently healed surfaces of the wound were separated with a view to finding the bleeding point. They consisted of dark-coloured superficial areas, about a quarter of an inch in diameter, scattered over the freshly exposed cut surfaces, exactly like cultivations of an organism upon a solid nutrient material. No bleeding point was found, but there was no further haemorrhage, and the visible necrotic areas gradually separated after the wound was laid open and drainage of its deep part was made very free. It seemed certain, therefore, that the necrotic areas were caused by the action of an anaërobic microbe which destroyed the wall of some vessel or vessels in the deep part of the abscess cavity. As there was no sign that the abscess would not heal well in that case until the first haemorrhage took place, it may be inferred that the cause of the necrosis did not induce any irritation or inflammatory reaction.

The gangrene of the intestine in the case now related seems also to have been due to some microbe in the fluid around the gangrenous appendix. It is hardly possible that the intestine could have been in the condition described for the three days, or very nearly three days, of the patient's illness. I am inclined rather to think that the pain was due to tension within the appendix; that relief was due to rupture of the appendix; and that the necrotic change in the bowel was very recent, being caused by an exceedingly rapid action of some micro-organism in the fluid that escaped into the peritoneal cavity after the patient's admission to hospital. Serous fluid of a yellow colour, and more or less clear, is often seen collected in a pool around a gangrenous appendix, although not held there by adhesions. In the case now recorded the fluid was of a very dark colour, and apparently it had a necrogenic effect upon the bowel.

It is, of course, conceivable that the condition of the bowel was the cause of pain, and that the cessation of pain was due to the emptying of the intestine by the action of the enema and to the consequent relief of tension within it; but it is very difficult to believe that an enema would act if the bowel had been even for a very few hours in the condition above described; and the pain was of very nearly three days' duration.

Pain is undoubtedly sometimes due to the escape of the contents of a vermiform appendix into the peritoneal cavity; but there is quite commonly a stage, as in this case, in which after the appendix has ruptured, and apparently immediately after its rupture, there is for a time complete freedom from pain.

It is a question whether an enema should have been administered when the patient was admitted to the hospital. In this particular instance the effect was good, for the operation was easier with the intestines collapsed than

it would have been if they had remained dilated. But if acute appendicitis requiring operation is diagnosed, it is usually better to operate first and to clear the bowel afterwards. The enema seemed to determine the onset of the condition in which alarming symptoms subside, and therefore its effect was to help the patient not to a cure but to a further stage of the disease, to that dangerous state in which the practitioner is tempted to believe that his patient is better, and that operative interference is not necessary. If this view had been adopted in the case now recorded, it is certain that a few hours' delay would have made the conditions very much more serious, if not altogether hopeless. An operation then, or a *post mortem* examination, would have shown an intense general peritonitis affecting the parts around the appendix region most severely.

Whatever the exact interpretation of the symptoms may be, the case illustrates (1) the imperative need for operative treatment in certain cases of appendix mischief, and (2) the importance of sudden cessation of severe pain as a sign that the conditions have become not less but more urgent. I do not believe that appendix cases can be understood until it is recognized that there are two distinct forms of mischief—one, inflammation commencing in the mucous membrane; the other, gangrene brought about by the action of a necrogenic microbe which causes no inflammation until the dead part is separating, or has separated. Each of these conditions may complicate the other, but typical cases are easily defined. There can at least be no question that, in many cases of gangrene, operative treatment is alone of use, whilst there are other cases in which even severe inflammation causes little real danger.

But the difficulty of recognizing which condition exists is sometimes so great that the surgeon thinks the safest course is to assume the worst, and operate at once, believing that if the patient would recover without operation, an operation will not prevent his recovery, and knowing that if the appendix is ruptured without adhesions having formed, delay in removing it is exceedingly dangerous, whilst a sufficiently early removal is almost always successful.

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TWO CASES OF GANGRENOUS APPENDICITIS WITH UNUSUAL HISTORIES.

BY

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THE two cases of appendicitis the histories of which are given below were met with within twenty hours of each other, and, showing as they do several points of interest, are, I think, therefore worth recording.

CASE I.

J. P., male, aged 9 years, was first taken ill on September 1st, 1912, when he complained of pain in the stomach. He had previously been healthy, although from infancy he had from time to time complained of pain on passing water. When seen first he had no objective symptoms; the pulse was 88, and the temperature normal, the belly soft without any tenderness; a bismuth mixture was prescribed. Between September 1st and September 6th he was seen each day. The pulse remained steady and below 90, and the temperature both night and morning was normal. When seen he was generally playing with his toys and free from pain, though there was always the story that he occasionally would cry out with paroxysmal attacks of sharp pain. His bowels were opened each day. On September 6th I was sent for as the child had been attacked with severe pain while passing a motion. On examining him an hour after the pain had commenced I found his belly wall absolutely rigid. The pulse was 80, and the temperature 98.8°. The tongue was moist, but he wore a somewhat worried look. I diagnosed acute abdomen, and had him removed to hospital. On admission the temperature was 101.4° and the pulse 120. I operated immediately and found the belly full of pus. On feeling for the appendix I found it hanging over the edge of the pelvis. It was adherent to the bowel and bladder, but was separated with ease. It was a long one; the first 2 in. appeared healthy, but distal to this it was enlarged to the thickness of one's thumb. It was gangrenous and had a perforation. On opening it I found a

concretion the size and shape of a "monkey nut." The appendix was removed, the pus swabbed out and the belly drained in four places, in each loin and in each flank. The boy made an uneventful recovery.

CASE II.

J. C., male, aged 32, came to consult me on his way home from work on September 5th, complaining of severe pain in his abdomen; the pain was localized and was eased by pressure. I found no tenderness of the abdomen. I was able to feel the outline of the pelvic brim throughout its whole extent, and no tenderness was elicited on deep pressure; the pulse was 80 and the temperature 98.2°. He was sent home to bed with a simple remedy. I was called to see him on September 7th, and found that he had been vomiting all the preceding night. The pulse was 88 and the temperature 98.6°. There was no tenderness on deep pressure in the iliac region nor in any part of the abdomen. The tongue was moist, but his face had a slightly anxious mien.

I think because of the remembrance of the case of the preceding night more than because of any definite signs or symptoms, although the man's expression was suggestive, I determined to explore his abdomen. On opening the belly a little clear fluid escaped. I felt for the appendix and found it lying in exactly the same position as in the case of the boy, hanging down into the pelvis against the bladder. I removed the appendix, and here again found the first 1½ in. healthy, the distal 3 in. gangrenous and enlarged to the size of a small banana. I put in a large drain, swabbed up the fluid in the abdomen, and sewed the rest of the wound up. This patient also made an uneventful recovery.

On incising the appendix I found the dilatation full of pus and containing six tin tacks and eight little shot. To explain the presence of this medley I subsequently discovered that the patient up to eight years ago followed the trade of a joiner, when he was accustomed to hold the nails in his mouth. The nails, he explained, were thrown from a box which contained small bits of lead and other remnants into his mouth, and he remembered that he often got odd bits of lead, etc., in his mouth with the nails.

From these two cases several interesting and instructive lessons, I think, may be gained.

Neither patient had a raised temperature or quickened pulse, although in both cases we must, I think, presume that pus was present in the appendix before the acute symptoms arose. I think the explanation of this lies in the fact that the appendix in each case was chronically thickened by the presence of the foreign bodies and therefore there was no escape of poison into the circulation and no infection of peritoneum.

In the case of the child the perforation occurred obviously while he was straining at stool, which is an interesting point.

The paroxysmal pain which each patient suffered before the acute symptoms was a true appendicular colic, the organ trying to expel the foreign bodies it contained.

Almost all surgeons are now agreed as to the advisability of operating immediately appendicitis is diagnosed, but here were two cases with an appendix enormously dilated which were not diagnosed before acute symptoms supervened, although both cases were examined systematically and thoroughly with one clinical method omitted—that is, examination per rectum. The excuse for this is obvious; there was nothing to lead one to suppose mischief in the appendix, although it was carefully examined, but I feel confident that, had a rectal examination been made, the local tenderness would have thrown light on the condition one had to deal with, and spared the patients the acute termination which so greatly endangered their life. These cases emphasize the importance of this examination being made as a matter of routine in all abdominal cases.

Another point which both these cases illustrated is the importance of the abdominal facies. When first seen, except for the rigid abdomen in the case of the boy, neither patient had any objective symptoms except this worried anxious look.

THE late Dr. Frederic Bagshawe, of St. Leonards, left estate valued at £80,817, of which £78,534 was net personality.

HEARSEY, in his sleeping sickness *Diary* (Part XVIII) for the Nyasaland Protectorate, states that since the issue of the last number 17 additional cases of the disease have been diagnosed by Dr. Shircore. These, added to the 76 previously recorded, make a total of 93 cases. The value of a new drug, "Dye B. S. (Brieger and Krause)," was tested in some of the cases, but Dr. Shircore finally came to the opinion that it was not only useless as a therapeutic agent, but might even be harmful.