MALIGNANT DISEASE OF THE COLON ASSOCIATED WITH ABSCESS SIMULATING APPENDICITIS.

By G. GREY TURNER, F.R.C.S.(Eng.),
Assistant-Surgeon, Royal Victoria Infirmary, Newcastle-upon-Tyne.

I have previously drawn attention to the way in which malignant bowel growths may simulate appendicitis,¹ and in a paper in the Lancet for 16th September 1905, on "A Case of Tuberculous Ulceration of the Colon Simulating Appendicitis," I summarised these several ways as follows:—

"1. A growth in the caecum may be associated with attacks like appendicitis. These attacks may be due to obstruction or to inflammation of the parts around, and this may go on to the formation of an abscess which may exactly simulate one due to appendicitis.

"2. A growth in any part of the large intestine beyond the caecum may get blocked, and, if there is a competent ileo-caecal valve, the caecum is the first part to feel the stress of the obstruction, and at first all the pain is referred to this region. It is only as the attack passes off that the falling distension enables the lump elsewhere to be felt.

"3. Primary malignant disease of the appendix may be the cause of the symptoms."

Since that time a specimen of carcinoma of the caecum has come under my notice, which suggests at least one of the ways in which an abscess may form about such a growth. The patient from whom the growth was removed was a man of 49. His symptoms were entirely obstructive, and there was nothing to suggest that he had ever had an inflammatory attack. On examining the removed caecum I found that the growth completely surrounded and obstructed the orifice of the appendix, and that the remainder of the organ was distended with pus from which a pure culture of an organism very similar to the bacillus coli, if not identical with it, was obtained. It is easy to see how such a condition might give rise to an abscess resulting from a perforation of the appendix, but really secondary to the presence of the growth in the bowel.

Often the diagnosis is not made before opening the abdomen, and I am afraid usually from want of care in the consideration of the history, for in those cases that are recorded in this paper,
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and in the others that have come under my notice, the previous history has been suggestive of the condition found, but it is often not obtained until the unexpected findings at the operation prompt a careful analysis of the early symptoms. A diagnosis of appendicitis is usually so well founded as to make error excusable, but it may be none the less unfortunate, as the condition under consideration may demand a very extensive operation, for which one may not be prepared unless forewarned, and, indeed, even at the operation the condition underlying the presence of the abscess may be easily missed unless suspected.

The patient invariably dates the illness from a recent attack, but a careful cross-questioning will usually elucidate a history of a long period of general ill-health with colicky abdominal pain, much rumbling with irregularity of the bowels, and perhaps the passage of mucus and traces of blood.

I cannot say that the age of the patient is anything more than suggestive, for I have seen malignant disease of the bowel give rise to the suspicion of appendicitis in patients of only 23 and 31 years of age; and, on the other hand, I have operated on six cases of appendix abscess in patients whose ages varied from 45 to 67, a period at which carcinoma is common.

A hard mass in the caecal region would undoubtedly raise the suspicion of cancer in the elderly, as it would of tubercle in younger subjects, but I have several times diagnosed the one or the other when nothing more than an acute infection has been the explanation. The most suggestive feature is undoubtedly the presence of such a mass at the outset of the attack, especially if it gets larger without much pain, and if it is associated with evidence of intestinal obstruction.

When a caecal growth is associated with an abscess the treatment becomes a matter of difficulty. On most occasions the abscess is merely drained, perhaps even in ignorance of the presence of the growth. As a rule this gives immediate relief, though it is but temporary, for a faecal fistula is very likely to form, while the onset of intestinal obstruction may add to the patient's misery. In two cases of this kind, in which drainage only was employed, the patients died on the seventh and ninth days respectively.

To endeavour to anticipate the onset of such distressing complications, I determined to make a short circuit in the next case which presented itself, and the notes which follow illustrate my efforts.

Malignant Growth in Ascending Colon with Retrocolic Abscess
simulating Appendicitis—Short-Circuiting—Drainage.—The patient was a man of 50, admitted to the Newcastle Infirmary in October 1905, complaining of pain in the right iliac fossa, with stiffness of the right leg. During the whole summer he had now-and-again some soreness in the iliac fossa, and had lost flesh and strength. There was also constipation with rumbling in the bowels, but no sudden attacks of pain and no vomiting. He dated his present illness to 5 or 6 weeks before admission, when he began to suffer from pain in the right iliac fossa and down the leg—the pain was not severe enough to make him lie up, and he never vomited. Three weeks before admission the pain got so bad that it prevented him sleeping, and he was bound to give up work. He began to be troubled with some looseness of the bowels, and once or twice noticed blood in the motions, and it was about this time that he first became fevered, and his doctor advised him to poultice the side. About two weeks before admission the right leg became flexed, and during the week preceding admission the temperature varied between 99° and 101°. There was no history of any previous abdominal illness.

On admission the patient looked thin and ill, the temperature was 100° and the pulse 120, while the tongue was coated and moist. He lay in bed with his leg drawn up to an angle of 45 degrees. In the right iliac fossa, and extending into the corresponding loin, there was a large, very tender mass, but nothing could be made out elsewhere in the abdomen or on pelvic examination. A diagnosis of retrocolic appendix abscess was made.

On October 17th I opened the abdomen by an oblique muscle-cutting incision about 6 inches long in the right iliac fossa, as for appendix abscess. On opening the peritoneum the appendix was found to be normal, but there was a malignant growth in the commencement of the ascending colon and a large inflammatory mass in the position of the psoas muscle and extending down into the right iliac fossa behind the peritoneum. It did not appear a suitable case for excision even had the patient's condition warranted the attempt. In the hope of avoiding a faecal fistula or the onset of obstruction, I made an anastomosis between the ileum and the transverse colon. The small intestine was divided about a foot above the ileo-cecal valve; the lower end was closed and the upper implanted into the transverse colon, the anastomosis being made with the Murphy button. The front part of the incision was then closed, and the abscess opened
Carcinoma of the ascending colon involving the ileo-coccal valve. There was an intraperitoneal abscess behind the growth leading to the simulation of appendicitis. The bowel as shown in the illustration was successfully removed from a woman of 54.
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posteriorly by working in the retroperitoneal tissue behind the colon, and, by this means, fully half-a-pint of very foul pus was evacuated. The patient was a good deal collapsed after the operation, but soon picked up, and made a good immediate recovery. At the end of a fortnight the button was passed per rectum, and in another week he was able to travel a distance of 40 miles to his home. When he left the hospital he had no pain, he took food well, and the bowels were regular. The mass was much less but stony hard, and there was still a free discharge of pus. This patient gradually became exhausted, and died three months after leaving hospital. There was always a discharge of pus, but the operation certainly spared him both the inconvenience of a fecal fistula and the pain and danger of intestinal obstruction.

It is quite obvious, however, that if circumstances are favourable the best thing for the patient would be to remove the growth even as a palliative measure, and in the following case I was able to carry this out.

**Malignant Growth of the Ascending Colon associated with Abscess simulating Appendicitis—Resection—Drainage.**—This patient was a woman of 54, who came to the hospital complaining of pain in the right side of the abdomen, which she attributed to a small femoral hernia. The pain came on suddenly two weeks before she applied for admission, but it was not very severe, and did not make her vomit, though she felt very ill and had no appetite. The bowels were confined in spite of opening medicine. On closer enquiry, prompted by the disclosures of the operation, the patient admitted that for months she had not been well, being much troubled with rumblings in the abdomen which made her “stomach swell up with wind.” The bowels only moved every two days, but she never had diarrhea, nor was there blood in the stools. She did not take food well.

On admission she looked a healthy old woman. The temperature was 99.4°, and the pulse 108. The tongue was furred, but moist. The abdomen was neither distended nor rigid, but in the right iliac fossa, just internal to the anterior superior spine, there was a very hard mass about half the size of the patient’s fist, and extremely tender. It felt as if close under the abdominal wall, but was deeply fixed.

A diagnosis of appendix abscess was made, and operation decided upon. I made an oblique muscle-cutting incision in the right iliac fossa, which was subsequently enlarged so as to extend from the outer border of the rectus in front to the right flank behind. The
parietal peritoneum was not adherent, but the sulcus on the outer side of the cæcum was glued up by inflammatory material, and, on separating this, a foul abscess was opened, two or three ounces of pus escaping. The appendix was found with difficulty being closely adherent behind the outer edge of the cæcum—it was separated and removed. On attempting to tuck in the stump with a purse-string suture, I found the wall of the bowel so rigid that I could not invert it. This confirmed my original suspicion, and at this stage I enlarged the incision forwards, and explored the cæcum with a couple of fingers in the peritoneal cavity. I found a new growth occupying the bowel, with a large mass of glands in the mesentery. The involved bowel and the glands were brought outside, and I found that, though extensive, it was possible to remove it, for there were no deposits in the liver or peritoneum. The posterior part of the cæcum, the lowest part of the mesentery, and the last inch or two of the ileum, formed part of the abscess wall, and enough bowel had to be removed to get wide of the infected area, as well as to remove the mass of involved glands with the area of probable lymphatic invasion.

As it subsequently turned out when the specimen came to be examined, the ileum was divided about two feet from the cæcum; its end was ligatured and inverted, and a lateral anastomosis made by direct suture between it and the transverse colon. The mesentery was then dealt with, being divided right up to the origin of the ileo-colic artery; and although the glands were enlarged up to the highest point, one lying on the duodenum, all appeared to have been removed. As a last step, the transverse colon was divided just beyond the hepatic flexure, its extremity being ligatured and the stump inverted. A drain of gutta-percha tissue was brought from the remaining part of the abscess cavity out of the posterior end of the incision. The abdominal wound was closed in layers with catgut, silkworm-gut being used for the skin.

The patient stood the operation well, and made a good recovery, except for a mild attack of cystitis. She was sufficiently recovered to leave the hospital on the twenty-fourth day. The drain was removed on the fifth day, and the sutures at the end of a fortnight. Except for the drainage-tube area, from which there was very little discharge, the wound healed throughout by first intention, the temperature only once or twice reaching 100°. By the twenty-fourth day the patient was sufficiently recovered to leave the hospital, and when I saw her three months after the operation she
was looking exceedingly well, and had gained weight considerably. The bowels were regular, she had none of her old symptoms, there were no signs of recurrence, and the scar was sound.

The drawing gives a very good idea of the growth, which was really a constricting carcinoma surrounding the bowel just at the level of the ileo-caecal junction, both segments of which were involved. There had evidently been a good deal of obstruction at the valve, for the lower few inches of the ileum were considerably hypertrophied, and in this part of the bowel there was quite a collection of potato skins, fruit seeds, &c. The caecal wall was much hypertrophied, and, as the mouth of the appendix was unobstructed, it is most probable that the appendix would be distended by the contents of the caecum. An examination of the posterior surface of the specimen showed that the abscess cavity lay behind in the ileo-caecal angle, its walls being formed by the caecum, the mesentery, and the last few inches of the ileum, while it lay on the peritoneum of the iliac fossa. The extent of the glandular involvement is not apparent in the drawing, but it formed a considerable part of the mass felt at the operation. The ileum removed measured 23 inches and the colon 10. Microscopically, Dr. Stuart M'Donald reports the growth to be a columnar-celled carcinoma.

To my great chagrin the appendix was mislaid before I had an opportunity of examining it, so that whether the abscess really arose from a lesion in the appendix or by an extension from the caecum, I am unable to say, though there is no demonstrable perforation in the growth which might have communicated with the abscess cavity, while, on the other hand, the appendix lay in it.

In this patient there were so many enlarged glands that I fear the whole disease was not removed, but the operation gave the patient the greatest amount of relief, with the possibility of freedom for a considerable time. I had hoped that a good many of the glands might be merely inflammatory, but they all appeared to be infiltrated with growth when submitted to more careful examination.

To some it may appear to be tempting Providence to freely open the peritoneum and resect bowel in the presence of an intraperitoneal abscess, but for several years I have operated on appendix abscesses by the method of Mr. Rutherford Morison, and I know that the peritoneum can be safely opened and packed off just before evacuating a stinking appendix abscess. I have
operated altogether on 300 cases of appendicitis, and of these 93 were localised abscesses which accounted for 3 deaths, two due to acetonuria and one to an undiscovered secondary abscess. In no case have I seen infection of the peritoneum arise. Last year I opened a large appendix abscess in a little boy of 4, and, in endeavouring to find the appendix, the ileum was so much torn that I had to enlarge the opening into the peritoneum, resect a foot of intestine, and make a lateral anastomosis, but, in spite of this, there was never a symptom of peritoneal involvement, and the boy made an uninterrupted recovery.

In conducting these operations it is of the greatest importance to open the peritoneum sufficiently freely to enable one to reach healthy intestine for the resection and anastomosis, and it may be said that the risk is lessened by the magnitude of the procedure.

I have always employed the oblique muscle-cutting incision of Rutherford Morison, for it gives ready access, and the abscess can be packed off posteriorly and the remainder of the operation conducted from the anterior part of the wound. At the conclusion of the operation the drain can be most conveniently brought out behind, for in this position gravity comes to our aid and there is much less risk of hernia.

An enquiry into the after-history of a consecutive series of 41 of my cases operated on by this method for appendix abscess resulted in replies being obtained from 34 without any complaint of hernia or weak scar, though none of the cases had been operated upon less than two years and several as long as eight and seven years, while most followed the laborious occupations common in this district.

I lay great stress on ample provision for drainage by tube or gutta-percha tissue, but not by gauze, which soon acts as a plug or becomes so incorporated with the tissues as to make its removal excessively painful, while, if in proximity to the anastomosis, it may interfere with union or tear it away when removed.

In another case, if it were not possible to excise the growth

| Group | Description | Cases | Deaths |
|-------|-------------|-------|--------|
| I.    | Acute Appendicitis without Peritonitis | 18 | 0 |
| II.   | with local Peritonitis | 46 | 1 |
| III.  | with flank or pelvic Peritonitis | 41 | 1 |
| IV.   | with Diffuse Peritonitis | 29 | 15 |
| V.    | with Residual Abscesses | 20 | 2 |
| VI.   | with primary Localised Abscess | 93 | 3 |
| VII.  | Interval Appendicitis | 58 | 0 |
| VIII. | Appendicitis with primary Complications | 4 | 2 |

Totals | 300 | 22 |

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* Group
I should certainly make an anastomosis as in the first patient, but I would draw attention to the necessity of cutting across the bowel leading to the growth, and not relying on a lateral anastomosis alone, for it seldom succeeds in diverting the intestinal current. This has been abundantly proved in many cases that have come under my notice, and I especially remember one in which a lateral anastomosis was made between the ileum and the transverse colon for the cure of a faecal fistula associated with a tuberculous caecum. A catgut ligature buried with Lemberts of silk was tied round the ileum between the anastomosis and the caecum, with the result that there was no leak for seven days, but, at the end of that time, the fistula began to discharge as freely as before, necessitating further measures to bring about cure.

References.

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   "Surgical Guide Posts," Durham University College of Medicine Gazette, vol. vii. p. 2.
2 "Excision of the Cæcum and Ascending Colon with the Corresponding Lymphatic Area," J. F. Dobson and J. Kay Jamieson, Lancet, 18th January 1908.
3 "The Diagnosis and Treatment of Abscess in Connection with the Vermiform Appendix," by Rutherford Morison, Lancet, 23rd February 1901.