A Lecture ON CARCINOMA OF THE COLON.

DELIVERED AT THE CANCER HOSPITAL,

BY

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THERE are certain clinical aspects in the study of carcinoma of the colon which I propose to bring before you.

In the first place, let me say that the stage of complete obstruction is still unfortunately the most common at which the surgeon meets it. A typical instance is the following case:

A patient was admitted to the Royal Free Hospital with a distended abdomen, persistent vomiting, and inability to pass either faeces or flatus. The abdomen was opened in the mid-line. A hugely distended caecum presented, and on it was a patch of gangrene about half the size of one's palm. There was just sufficient time to pack around it with gauze before the caecum burst, flooding the wound with pints of liquid, offensive colon contents and running on to the floor. A Paul's tube was then fixed in the opening, and the patient made an uninterrupted recovery. Some weeks later the abdomen was reopened and a carcinoma of the sigmoid excised. At a third operation the caecal fistula was closed.

The most striking lesson to be derived from this case has always seemed to me that the gangrenous condition of the caecum and its early rupture, thus preventing any further abdominal exploration, was the means of saving his life. This brings me to the point. What should be done when a patient's abdomen is very distended and obstruction is complete? If a growth can be felt from the rectum or vagina, colostomy of the sigmoid may be performed. If not, the abdomen should be opened to the right of the mid-line, and if the caecum presents it should be opened without further exploration. If it does not, the first distended coil found should be used for the purpose of drainage.

You may say that without a proper exploration of the abdomen a strangulation under a band, or some other form of intestinal obstruction, may be overlooked. Even so the chance of the patient living is greater the less the intestines are handled, for consider their condition. They are filled with offensive liquid faeces, their walls are oedematous and brittle, the elasticity is diminished, the peritoneal covering cracks and splits even with gentle handling, allowing toxins and germs to invade the peritoneal cavity. Colostomy without an exploration for the cause of the obstruction, in very distended cases, brings about far better results than when a search is made.

The safest method of performing a temporary colostomy for drainage purposes is by using the curved clamp invented by Sir Thomas Smith (Fig. 1). A portion of the lumen

Fig. 1.

of the distended colon is emptied and then clamped. An incision is made and a purse-string suture inserted around it. A Paul's tube is now slipped in and the purse-string stitch tied around it. The clamp is then removed, and the gush of fetid faecal matter is carried well clear of the wound into a receiver by means of the rubber tube attached to Paul's apparatus.

We now come to the case of carcinoma of the colon in which obstruction has not become complete.

Here we have very typical symptoms, but which are often overlooked, either because the patient does not go to his doctor, or because the symptoms are improperly recounted, or because the symptoms are treated without any attempt at finding the cause.

Let us look at a typical specimen of the commonest type of growth, that of the sigmoid, and you will notice there is very little to be seen on the outside. The appearance is that of a string having been tied around the bowel. If we look at the interior we will see that the growth is of both an ulcerative and a cicatrizing nature.

Now any form of ulcer in the colon gives rise to frequency in the calls to empty the bowel. The excessive secretion of mucus and the call to get rid of it makes the patient think he has diarrhoea.

As the colon becomes narrowed by the shrinking of the growth, colicky pain is induced by taking food or drinking hot fluids, both of which stimulate peristalsis. This the patient attributes to "wind."

The most typical symptoms, then, of the early stage are the frequent passage of loose motions and mucus with blood occasionally, and colicky pain on taking hot drinks or food.

If these symptoms persist in spite of diet, bismuth, and rest in bed, an examination with the sigmoidoscope is called for. Failing definite evidence with that, the only means of settling the diagnosis is by exploration of the abdomen. I must here admit that in four cases of those I have explored with these symptoms the disease has been chronic appendicitis and not growth; but as their troubles have disappeared with the removal of the diseased appendix, the mistake was a good one.

A still later stage, and one during which no mistake should be made, is that in which there is gradually increasing constipation and *visible peristalsis*.

The picture of visible peristalsis once seen is never to be forgotten. If the abdomen is watched during one of the attacks of pain, coils of hypertrophied intestine will be seen standing out and raising the abdominal wall in waves. Visible peristalsis always means obstruction, and there should be no hesitation in opening the abdomen when this sign is present.

I was once asked to go to the country to fix a movable kidney which was causing pain in a patient whom I had never seen but who had been recommended to have the operation by a surgeon who devotes a good deal of attention to kidneys. While examining the lump which she had in the right kidney region she had one of her attacks of pain, and I was able to observe very well-marked peristalsis. I received permission to open the abdomen instead of fixing the kidney, and the condition I found was a chronic intussusception lying in the ascending colon and forming a lump which had been mistaken for the kidney. I was able to reduce the intussusception, which originated from a tumour of the ileum, causing the intestine to be invaginated into itself, and so producing chronic obstruction. The growth, with a good length of intestine, was excised, and the patient is now well, some eighteen months later.

Cases are not all of a straightforward character. An ulcer of the intestine, from whatever cause, may lead to an attack of localized peritonitis, and this is not uncommon in connexion with the chronic cases, especially in the region of the caecum. Invasion of the wall of the intestine occurs through the base of the ulcer, and what follows is exactly the same as in a case of appendicitis—namely, adhesions, a localized abscess, or general peritonitis. Most of the lumps found in these cases are due to this complication, the mass consisting mainly of inflamed adherent omentum and not of actual infiltration of the growth.

These cases may exactly resemble attacks of recurrent appendicitis, and one very interesting example, whose caecum I show you, was like that.

The patient was the wife of a doctor, and the subject of chronic phthisis. Some months before she was taken ill with pain in the right iliac fossa, vomiting, and constipation. A lump appeared in the region of the appendix, and for a day or two it was doubtful whether she had not an abscess, but all her symptoms cleared up in the course of a few days, and the lump gradually vanished. Two or three months later a second attack came on resembling the first. It was deemed advisable, as soon as she had recovered from this attack, to remove the appendix. On opening the abdomen and exposing the region of the appendix and caecum it was found that instead of a merely diseased appendix there was a much more formidable condition to be dealt with, namely, tuberculous disease of the appendix, caecum, and ascending colon. In this case there is no doubt that her attacks of localized peritonitis were not due to tubercle, but to

secondary infection by the *B. coli*. A portion of the ileum, the caecum, and the ascending colon were removed; the ileum was then joined to the transverse colon, and I am glad to say she is now going about feeling perfectly well.

The interest of a case of hyperplastic tubercle of this kind is that it may very easily be mistaken for carcinoma.

Another case I will relate to you illustrates very well the condition of a localized abscess in connexion with carcinoma of the colon.

A woman of 53 was admitted to the Royal Free Hospital complaining of abdominal pain. She soon developed a lump in the region of the sigmoid flexure which quickly became adherent to the abdominal wall and was clearly inflammatory in origin, but it was recognized that there was something more behind it—either a new growth or possibly a foreign body which had perforated the intestine. The abscess was opened, and a quantity of foul-smelling pus was let out. The major portion of the cavity was in the muscle of the abdominal wall, but there was a small sinus leading deeper into the abdominal cavity. This was allowed to drain for about two weeks, during which time no faecal matter escaped, and the discharge became very small in amount.

I then opened the abdomen by incisions which surrounded the abscess cavity. The lump which could be felt before the operation proved to be what I show you—a carcinoma of the colon with an ulcer which has perforated its wall, the great omentum, which has exercised a protective influence by becoming stuck over it. The abscess has then progressed through the omentum into the abdominal wall. An interesting feature is that the portion of colon involved turned out to be the transverse, although it was fixed in the region of the sigmoid. I was able to remove the whole mass, including practically the whole of the great omentum, 8 in. of the transverse colon, and the corresponding portion of the mesocolon.

Another case of similar interest was the following:

I saw with Mr. Boyce Barrow a lady suffering from pelvic peritonitis. Her symptoms rapidly cleared up when an abscess discharged itself through the vagina; but ten days or so later she developed intestinal obstruction of the mechanical type. On opening the abdomen the cause of all her troubles was found to be a carcinoma in the last six inches of the ileum, which had perforated, forming a localized abscess at the bottom of Douglas's pouch; this it was which had discharged itself through the vagina. We were able to excise the growth with the caecum, ascending colon, and glands, and she went home well.

One other case of mine was of interest. The abdomen was opened for a growth causing chronic obstruction, which proved to be in the ascending colon, but she also had an entirely separate and irremovable growth in the stomach.

TREATMENT.

In the treatment of cancer of the colon, apart from those with complete obstruction and very distended abdomens, dealt with at the beginning of this lecture, there are various problems to be solved when the abdomen is opened.

I.

If the growth is removable, is there a sufficient amount of obstruction to render it a dangerous operation to immediately resect the growth and unite the divided ends?

This is a point where grave consideration is necessary, and a wise decision may make all the difference between life and death.

If the intestine is distended and contains fluid faeces, and especially if purgatives have been unwisely and

unsuccessfully given shortly before the operation, the intestine above the growth is likely to be oedematous and brittle and hold the stitches badly. In this condition a temporary colostomy is the wisest choice, however aggravating such a measure may be for both surgeon and patient.

If a temporary colostomy has to be performed, what situation shall be chosen? This depends upon the site of the growth. If it is in the sigmoid, descending or transverse colon, then the caecum is the best place in which to make the safety valve. If the caecum is involved (though caecal growths are usually discovered before obstruction occurs), then the fistula must be made into the ileum.

The site of a temporary colostomy should be planned, if possible, as much away as possible from the site of the incision for the subsequent removal of the growth, for the skin in the immediate vicinity of the colostomy is likely to be irritated by the fluid nature of the faeces in the caecum,

and impossible to sterilize when the abdomen is opened again. As a rule, there is not much difficulty in obtaining such a site, but in one of my cases it would have been wiser to have substituted the old-fashioned lumbar colostomy of the ascending colon, such was the uncontrollable irritation of the skin of the whole abdomen.

II.

The next point to be considered, supposing there is no sufficient obstruction to render immediate resection dangerous, is, Can the growth be completely removed? If it cannot, then can any form of anastomosis be planned to short-circuit the growth and so avoid the otherwise inevitable obstruction? If the growth is so low in the sigmoid that this is not feasible, we are allowed no alternative but to leave the patient with a colostomy.

Another point arises here. If the patient has a removable growth, but infected glands extending into such a situation that it is not possible to remove them, should nothing more be done and the abdomen closed? I say No.

The patient is certain to come to a painful end either from obstruction or peritonitis. This may be avoided if the growth in the intestine can be completely removed. Of course, death will ensue from spread to the liver, but an end of this kind much more resembles the "decline" of the novelist, and entails no suffering, but only an increasing anaemia and weakness, ending in death.

The operative measures designed to radically cure by complete excision, not only of the growth, but of the lymphatic areas into which it has spread visibly, or is likely to have spread microscopically, have been much extended of late years. Formerly the bowel was cut across much too near the growth. Now we know that there is no risk in removing many inches of the intestine. The whole colon may even be removed, though this is rarely necessary.

Carcinoma of the Caecum and Ascending Colon.

As will be seen from the diagram (Fig. 2), the caecum and ascending colon are supplied by one artery, the ileo-colic, the right colic usually coming off as a branch from it. The lymphatic vessels and glands follow the course of this artery. The plan adopted is to tie the ileo-colic at its origin from the superior mesenic just at the lower

Fig. 2.—Diagram showing blood supply and lymphatics of caecum and ascending colon. Dotted lines show division of posterior layer of peritoneum, mesentery of the small intestine and mesocolon, with clamps on the bowel. A, Superior mesenteric artery. B, Ileo-colic artery; with right colic artery coming from it. C, Lymphatic glands.

border of the transverse portion of the duodenum. The peritoneum, fat, and glands are then stripped downwards and outwards to the caecum and ascending colon. The ileum is clamped 8 in. from the caecum and divided. Clamps are similarly applied to the transverse colon at a movable and convenient point, and it and the transverse mesocolon severed. It now only remains to divide the peritoneum on the outer side of the ascending colon, and the removal is completed. The cut ends of the divided

Fig. 3.—Colostomy performed by uniting the whole thickness of the abdominal wall through a hole made in the mesentery.

intestine are then closed and a lateral anastomosis performed. The advantages are that the operation is practically a bloodless one, the lymphatics and glands are removed in one piece with the growth, while the subsequent junction is easy as movable portions of the intestine are to be dealt with.

Transverse and Descending Colon and Sigmoid.

Similar measures are adopted, due attention being paid to leaving uninjured the blood supply of the remaining parts of the colon. When the growth is so low in the sigmoid that no junction is possible after excision, then the rectum must be removed as well as the sigmoid by the combined abdomino-perineal operation.

Closure of Temporary Colostomy.

I now come to the question, how to close a temporary colostomy.

1. The spur may be removed painfully and tediously by crushing with a clamp or enterotome.
2. Excision of the opening or the portion of the intestine into which the opening has been made.

The plan I practise is to incise the skin at a distance of $1\frac{1}{2}$ to 2 in. from the margins of the colostomy (Fig. 4). This

Fig. 4.—A, Colostomy. B, Incision in skin. C, Island of skin sutured over colostomy.

island of skin is dissected up towards the opening, and its edges sutured together with strong silk, so that it forms a watertight converging for the opening. This gets rid of two difficulties:

1. The leakage of faecal matter during the operation.
2. The septic skin around the opening.

The abdomen is then opened at some little distance to avoid the adhesions in the immediate neighbourhood, and it is then easy and quick, by sacrificing a little of the muscle of the abdominal wall, to completely free the opening. Clamps are then applied and the colostomy cut away. If it is the caecum, the edges of the wound are then united by a double row of stitches. If there is so little lumen left that there would be a stricture after repair, then that portion of the intestine is excised and end-to-end anastomosis performed.

It but remains to describe formal and permanent colostomy. Every one has his own plan, and many are

good. The one I like best is to bring the colon through the outer part of the left rectus a little below the umbilicus. A hole is made through a bloodless portion of the mesentery, and the whole thickness of the abdominal wall is then united through this opening. A few days later the colon is opened in the ordinary way.

THE RESULTS OF EXCISION OF THE HIP-JOINT IN 34 CASES OF SUPPURATING TUBERCULOUS DISEASE.*

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This is a consecutive series of 34 cases of excision of the hip-joint with 35 operations (as in one case both hip-joints were excised) for tuberculous disease, but I have performed also 3 other operations on the hip-joint. One was a sequestrotomy of the head and neck of the femur for necrosis, and the other two were arthrectomies for tuberculous disease. The total number of operations for tuberculous disease of the joint is therefore 37. In no case have I operated for tuberculous hip disease until there was evidence of suppuration in the joint, nor do I think it is desirable to operate before suppuration occurs. I recognize, of course, that some surgeons consider that all that should be done in suppurating tuberculous hip disease is to scrape out the abscess sac; but I agree with those surgeons who maintain that it is better, when once operation has to be performed, to do more than this, and remove as much of the diseased tissue of the joint as possible. In my comments on the series of cases I shall point out what bearing the cases have on this view.

I have written to inquire about all the cases there was any hope of reaching that were operated on during the last twelve years. It seemed hopeless to try and get at those operated on longer ago than this. Some of those operated on within the last twelve years I have been able to examine lately; with regard to others, I have had to be content with reports from the mothers. Most of the cases were young children, some were over 12, a few were adults, and 1 case operated on this year (1912) was 57. I have had no death from the operation in the whole series.

THE OPERATION.

All my operations have been performed by the anterior incision, which starts just below the anterior superior spine and runs downwards, passing between the sartorius and the tensor fasciae femoris, and then between the rectus and gluteus minimus. Very often the abscess is opened in reaching the joint by this route. The neck is divided with an Adam's saw, and the soft parts around it cut with scissors. There is often much difficulty in turning out the detached head. I have found that the now almost obsolete perineal lithotomy scoop is a useful instrument for this purpose. Lion forceps crush the soft head too much, but sponge-holding forceps will sometimes be useful.

I then cut away with scissors curved on the flat all the tuberculous tissue I can. Occasionally I have been able to remove in this way quite large pieces, but it is a very different matter from doing an arthrectomy of the knee, in the performance of which it is so easy to see all the diseased tissue. In excision of the hip one has to be very largely content with free scraping of the diseased soft tissues, and scraping and gouging away diseased bone in the acetabulum; and, of course, sequestra are searched for and removed. In my first 24 cases I found sequestra in 10; in most of the cases several were present either in the head or acetabulum, most often in the latter. One sequestrum measured 1 in. by $\frac{1}{2}$ in. The frequency with which sequestra are present in these cases is, I think, one reason in favour of excision rather than simply scraping out the abscess. No doubt many of these sequestra would in time disintegrate and come away, but I am sure their removal would tend very materially to hasten the process of recovery. In all cases the abscess sac, as well as the

* A paper prepared for the discussion on The After-Results of Major Operations for Tuberculous Disease of the Joints, in the Section of Diseases of Children, at the Annual Meeting at Liverpool.