A Clinical Lecture

ON

A CONSECUTIVE SERIES OF 34 CASES OF EXCISION OF A PORTION OF THE RECTUM FOR CARCINOMA.

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GENTLEMEN,—I do not propose to-day to lecture on cancer of the rectum and its operative treatment. You will hear lectures on the subject in the systematic course of surgery, and can read about it not only in your textbooks, but also in recent books and journal papers by Sir Charles Ball and Mr. Harrison Cripps and others. What I propose to do in this lecture is to give you the result of my own experience in a series of 34 consecutive cases of rectal cancer treated by excision, and to discuss questions arising in connexion with these cases.

I find on looking up my case-books that I have removed a portion of the rectum for carcinoma in 34 cases,* and attempted to do so, but had to abandon the attempt, in one case in which I could not safely remove the whole of the growth. Curiously enough, this is the last of the series I have operated upon. I could have removed the growth in the bowel, but found a nodule high up behind the rectum, and too fixed to remove.

I have endeavoured to ascertain the number of cases in which the disease recurred, and I have met with the usual difficulty of tracing old cases, and have received my letter back inscribed "unknown" in several instances, and in 2 cases the relations simply stated that the patient was dead, without stating the cause of death; but I am glad to say that I have been able to examine, or another doctor has examined and reported to me, in 19 out of the 34 cases, and I propose presently to tell you the result. In order to find out if a patient has recurrence after excision of the rectum for malignant disease, nothing short of an examination of the rectum and abdomen will indicate the true condition as to recurrence, for rectal cancer is very insidious, and the patient may seem well although suffering from a recurrence, and it is not always easy to get the patient's consent to so thorough an examination if he feels quite well. In these 19 cases I have found 8 free from recurrence for periods ranging from one to three years after the operation, and in some others in which the growth recurred, it did not do so for some considerable period after the operation, so that the patient's life was considerably prolonged in comfort. In some, however, recurrence was unfortunately pretty rapid.

Now, a very important question is, How many of these patients lost their lives from the operation? There were 4 deaths in the 34 cases, or a mortality of 12 per cent., and one patient committed suicide one month after the operation. One death was due to shock at the time of the operation, another partly to shock, and possibly partly to peritonitis (but no *post-mortem* examination was made), and in this case when the peritoneal cavity was opened (Kraske's operation) I found an ovarian cyst on each side, and removed them both, so that the operation was an excision of rectum and a double ovariectomy; another case probably died of peritonitis, and the fourth died of acute mania three weeks after the operation. I am glad to say I have had no death in my last 18 cases, and 12 of these were what we call Kraske's operation—a portion of the sacrum was removed, the peritoneal cavity freely opened, and usually a circular union of the divided rectum was made.

Taking now the 8 cases free from recurrence from one to three years after the operation, I find 2 were free from recurrence three years after; 3, two and a half years after;

* I have not included in the 34 cases one in which in June, 1905, I did colotomy for intestinal obstruction and then resected a growth at the junction of rectum and sigmoid from the abdomen. Three of the 34 cases were squamous carcinoma starting at the anus.

1, one year and nine months after, and appeared well (though no rectal or abdominal examination was then possible) four years after; another was free from recurrence two years after, but is now not to be traced; and one patient had no recurrence a little more than a year after operation.† In 1 case not included in these 8, there was no local recurrence three years after operation, but there was then a curious ridge-like swelling in the hepatic region. I hear he is now (nine months later) in fair health. In 10 cases the disease recurred: in 8 of these in the rectum, and in 2 in the liver. But amongst these recurrent cases was one in which recurrence did not take place until eighteen months after operation, and in another there was no recurrence for three years, and then only in the inguinal glands.‡ In one case I did not get an opportunity of seeing the patient for six years after the operation (Kraske's), and then found recurrence in the rectum, but for several years after the operation the patient was reported by her doctor to be very well, and leading an active life. This was a particularly unfavourable case, as before operation there had been an abscess between the rectum and uterus. Thus in both these cases life was considerably prolonged in comfort. In all the recurrent cases the disease was extensive; in one case the patient had an ischio-rectal abscess and fistula, and a considerable amount of the tissue in the ischio-rectal fossa had to be removed with the growth.

Another case, not included in any numbers I have given you, because we cannot be certain there is no recurrence, was one of removal of epithelioma of anus and glands, reported well by her doctor one year and nine months after operation, but he had not seen her for some time. One patient wrote in reply to my letter that she had lost flesh and appetite, but it was impossible to say from her letter if there were any symptoms of recurrence.

In the whole series of 34 cases, in 15 the coccyx was not removed, and the peritoneum was not opened; in 2 the coccyx was removed, but the peritoneum was not opened, and in the 17 remaining cases the coccyx alone or the coccyx and part of the sacrum were removed, and the peritoneum freely opened. During the last few years I have been inclined to operate in female patients (even in cases in which the growth is low down, and I do not expect to have to excise any bone or open the peritoneum) with the patient lying well over on the right side, almost prone (the position in which I always do Kraske's operation), for I find that I can so much better prevent haemorrhage working from behind, with an incision from anus to coccyx (as well as around the anus), clamping and dividing strand after strand of tissue until the gut is isolated, as we do when operating by the sacral method. If we find we want more room outside the gut to isolate it freely, there is no difficulty about excising the coccyx with the patient in this position, and no objection to doing so. In the case in which death occurred from shock at the end of the operation, the haemorrhage was very free, and I am inclined to think that if I had operated by the posterior method, and clamped and divided step by step, I might have had less haemorrhage, though by any method the condition was a very difficult one to deal with, as there were masses of growth outside the rectum, which would have been difficult to remove even by the sacral operation.

In the male it is of great assistance in separating the lower end of the rectum from the urethra and prostate to have a sound in the bladder, and therefore I think it better in such cases to start the operation with the patient on his back, his perineum facing the operator and his legs held up out of the way by some kind of apparatus (the old lithotomy position), and then, when the rectum is freed from these structures, to remove the sound and turn the patient on his side (almost prone) and work from behind forwards. You cannot safely retain a sound in the bladder with the patient almost prone.

In the cases in which the growth is fairly low down, but yet far enough from the anus for us to leave a healthy segment of bowel there, we may be able, by simply

† In these 8 cases, with one exception, microscopic section shows carcinoma. The one exception is the case non-recurrent a little more than a year after operation. The growth was quite typical naked eye, but the piece of tissue preserved for section dried up, and the section made from it is of little value. The case non-recurrent after two years, and then lost sight of, was squamous carcinoma of anus; all the others were adenoid cancer of rectum.

‡ The case was one of excision of lower rectum and vaginal wall for adenoid cancer extending to anus.

excising the coccyx, to make a circular union and so preserve sphincter action, and yet not have to open the peritoneal cavity at all. Even in cases in which the disease involves the posterior vaginal wall and we have to remove a portion of this with the rectum, this method of operating (with the patient almost prone) answers very well.

It is usually stated that if the growth is fixed to the tissues outside the rectum the case is inoperable, but in the region of the prostate the normal rectum is pretty fixed, and because you cannot glide a rectal cancer on the prostate, it does not necessarily mean it is infiltrating it. I have removed such growths fixed to the prostate and did not find them infiltrating it, but you cannot be sure whether a growth in this position has or has not begun to infiltrate the prostate, and all you can do is to start your operation as an exploratory one, and see if you can separate the rectum from the prostate free of the growth. In such cases the presence of a sound in the bladder is especially useful as a guide during the operation. This leads me to speak of fixation in other directions. Fixation to quite the lower end of the sacrum or the coccyx need not contraindicate operation, for you can remove that portion of the bone; and, if the growth has invaded the posterior vaginal wall, you can remove that with the rectum. If the growth is high up, and you cannot get your finger through it and move it, the most useful way to ascertain whether it is free or fixed is to examine the patient standing up, and get him to strain down all he can. You will then, if the growth is free, feel it forced down on your finger, like a ring gripping it. You must prepare for some discharge from the anus at the same time by holding a mass of wool against it with your other hand.

I have seldom refused to excise the growth because it was too advanced, and not for many years because it was too high up, only in cases of fixed growth when the part they were fixed to could not be removed with them, or if secondary growths were present in the abdomen. Indeed, one patient (sent to me by Dr. J. Powell) who now, two and a half years after operation, is free from recurrence, had been refused operation by two well-known surgeons, one in London and one in a large provincial city. The growth was extensive, and very high up, but it came down well on my finger when he stood up and strained. Another patient (sent to me by Dr. Avery, who had then just been my dresser) had also been offered colotomy by a well known provincial surgeon as the only thing to be done for him. When I examined him last May he was free from local recurrence, three years after the operation, though there was a curious swelling in the hepatic region which might be growth, though he seems now still in fair health. If it should turn out to be growth, yet he will have had a very much greater prolongation of life than he would have had after a colotomy. If one is in doubt about the fixation of a very high growth, it seems to me it would be best to examine it from the interior of the peritoneal cavity, and be guided by that examination whether to go on with its removal either by the sacral or the combined sacral and abdominal route. By this method of examination you can also determine whether the iliac or lumbar glands are involved. An incision at the outer border of the left rectus would probably give the best access to the growth.

In only one case have I found a preliminary colotomy necessary. Even in cases in which there has been some distension of the colon, and many scybalous masses have been felt in it, oil and water enemata have (with the exception of one case) been quite satisfactory as preliminary treatment, even though the clearing out of the bowel in one case had to be commenced by an oil injection given through a soft rubber tube passed through the rectal stricture; and in another a mass of faeces in the rectum above the growth had to be dealt with in the same way. In the one case in which I had to do a preliminary colotomy, even by free purging for some days I could not clear the colon of scybala. There was in this case a very narrow lumen left through the growth. Free purging for several days, with abstinence from food likely to leave much debris in the bowel, and an enema the night before and on the morning of operation, with the administration of $\frac{1}{2}$ grain of opium the evening before, and again the morning of the operation, is my usual preliminary treatment.

In the cases in which the anal segment of the rectum has

been excised, if the growth has been quite low down I have always fixed the divided rectal wall to the skin, and it has united, and so a track of contracting scar tissue has been avoided, and with it the trouble of frequent dilatation or the production of stricture. If I have had to remove a considerable length of rectum with the anal segment, I have had to bring the divided end of the rectum out and fix it below the divided sacrum. I find I have completed 6 operations (Kraske's) in this way. But in 12 cases of growth in the middle part of the rectum I have united the divided ends. All these operations have, of course, necessitated removal of either the coccyx or a part of the sacrum as well, and in all cases but two required a free opening of the peritoneal cavity. In no case has complete immediate union resulted. In all some part, or even the whole union, has broken down, and my experience is that this is usually due to sloughing of the edges of the divided rectum. The surgeon has to divide strand after strand of tissue in these cases in order to bring down the upper end, and in this way you cannot avoid interfering considerably with the vascular supply. As a rule the bowel gives way posteriorly; but though in some cases a fistula is left when the wound heals, in others complete healing occurs, and the continuity of the rectal channel is completely re-established.

These are most satisfactory cases, for they have their sphincters active. Even if sloughing did not occur, the rectum is a very unfavourable portion of bowel to get primary union in, after circular suturing, for hard faecal lumps are apt to form in it. Some surgeons recommend that if circular union is attempted, the bowels should be kept loose by purgatives so as to produce action of the colon similar to that of the small bowel. I have not adopted this practice myself, because I have never cared to sacrifice the cessation of the activity of the bowel one may expect for a few days, after the preliminary treatment I usually carry out. I think, perhaps, forty-eight hours of rest, and then purging, might be the best treatment to adopt. This tendency for circular suture to break down seems to have been the experience of several other surgeons who have tried the method. I do not think anything is to be gained by the use of a decalcified bobbin here, for if hard faecal masses form this would offer an obstruction. I have only once tried the method recommended by Moulouguet and now practised by some surgeons. By this method the mucous membrane is dissected out of the lower (anal) segment, and the upper one is dragged through it, and sewn to the anal margin. Union takes place between the raw surfaces left by removal of the mucous membrane in the lower segment, and the outer coat of the upper end of the rectum drawn through it. In my own case extensive sloughing of the end of the upper fragment occurred, and no union took place, though there was no tension when I fixed it. If the growth were situated quite high up, and therefore a considerable portion of the upper rectum had to be excised, it might be possible to make a circular union, and yet quite impossible to get the upper end down to the anus. In other cases I may perhaps try this method again. In no case should I feel safe in immediately closing the sacral wound with deep stitches. I should continue my present method of packing it with iodoform gauze, both to shut off the opened peritoneal cavity and to ensure free drainage. In some cases I have been able to close the opening in the peritoneal cavity with a continuous puckering stitch (taking care not to constrict the rectal tube passing through), but even in these cases I have packed against the united peritoneum with iodoform gauze, and when I could not suture have always packed most thoroughly against the opening. I should not myself feel inclined to close the sacral wound, and leave the rectal union shut up beneath in the neighbourhood of the open peritoneal cavity. But it seems to me that we might improve on our method of making circular union. We might unite the two ends with a continuous, through and through stitch of Pagenstecher thread, and then pass up from the anus a short sponge holder, and when the blades reach the junction, open them slightly, and invert into them the joined edges, close the blades gently, and by withdrawing them a short distance down the rectum invaginate the union. The invaginated wall could then be fixed by some outside stitches. This process could be repeated until the whole circumference of the union had been invaginated and

fixed in this position. We should then get a union something like Maunsell's method. I tried it in one case, but the union was too near the anus, and therefore too fixed to invaginate. It would be more suitable for union high up the rectum.

As a rule there has not been any amount of shock after the most severe forms of the operation, even though it may have taken a very considerable time, and many of the patients were elderly men—half were 60 to 70 years of age. If the operation is done with the patient almost prone, very little blood is lost, because almost all vessels are clamped with the surrounding tissue before division. In one case (that of an elderly woman) the pulse was very bad at the end of the operation, and I was very much alarmed as to her condition, but directly we got her on her back again it improved so much as to completely relieve our anxiety. I see in my notes that one of the younger patients, a man aged 44, with no disease other than the rectal cancer, did suffer severely from shock, whereas the greater number of those between 60 and 70 had almost no shock at all with the same kind of operation.

I find the best position for drainage for patients in the sacral operation is on the back. They cannot, however, bear pressure on the wound, and you must take the pressure off by so arranging pillows beneath them (one under the back and another under the buttocks) that a hollow is left corresponding to the sacrum. But I see no object in keeping the patient rigidly on the back for any length of time. During the first twenty-four hours, when oozing is free and the peritoneal cavity is getting shut off by adhesions, I think it very desirable. After that I think it should alternate with the lateral position.

An interesting question in connexion with the results of operation is as to the amount of control over the evacuations which the patient possesses. As a rule the result is much what it is after a colotomy on the left side. The bowels act once or twice daily, and leaking is, as a rule, very slight or absent, unless the patient gets an attack of diarrhoea. As I have already said, after circular union the action of the bowels may be that of the normal rectum.

With regard to the age of the patients, I have just stated that half the total number of patients were 60 to 70 years of age, one Kraske case was 69; another case, a partial excision of the anal segment of the rectum and the inguinal glands, was 76. Neither of these two elderly patients suffered from shock. One woman with most extensive adenoid cancer (microscopic examination) of the rectum (the fatal case from shock) was only 26, and another, also with very extensive cancer, was only 28. It is sometimes stated that the prognosis as to recurrence is very bad in cases under 50, but one of my patients, who has gone three years without recurrence, was only 44 at the time of the excision, and the growth was so extensive I had to remove all the lower end of the rectum and make a sacral anus; and the case in which there was no evidence of recurrence until six years after operation was only 39 at the time of the operation.

I have not yet said anything about the method which I employ for draining the bowel in those cases in which a sacral anus has to be formed. There is no doubt that it is a good thing to conduct any faecal discharge right away from the wound, as we do by means of Paul's tube and a few feet of soft rubber tubing after a colotomy. But Paul's tube being of glass might get broken if fixed in the sacral region, by the patient accidentally lying on it. I have had a reel made of wood just like a Mayo Robson's decalcified one, and this I fix in the end of the bowel just as we do a Paul's tube, and to the other end a long soft rubber tube is attached. To tie up the end of the bowel, and so prevent the escape of flatus, seems to me objectionable. Neither do I think it wise to tie the rectum before division in excising the growth. I believe it is important first to open the rectum and define from within the exact limit of the growth, for it may run up on the mucous membrane further than we can feel it outside, and we always ought to cut so as to leave a good margin of healthy tissue. I always aim at removing an inch of apparently healthy tissue above and below the growth. A rubber tube can be temporarily clamped round the bowel at the highest point of its exposure before opening it.

There is another matter I have not referred to, and that is the removal of extra-rectal masses of growth in the

sacral region. We not rarely find some enlarged glands, or if not glands, growth, in the fatty tissue outside the rectum, in the form of nodules, a tongue-like projection of the primary growth, and as a rule such growths are readily removable. One great advantage of the posterior method of operating is, I think, that you can the more readily detect and remove them, and I have done so in several cases. The upper attachment of such a nodule high up under the sacrum may be too high up to tie; I have left a long pair of artery forceps on it at the end of the operation. It would be very unwise to cut anything at such a level without clamping, or to take off the clamp when trying to tie, without a good prospect that you can get a ligature to hold well. A bleeding vessel, high up in the hollow of the sacrum may give a great deal of trouble.

What, then, does a study of these 34 cases show? I think it indicates (as does also the study of other published consecutive series of cases) that even including the cases of growth high up, the excision of which necessitates removal of a part of the sacrum and a free opening of the peritoneal cavity, the mortality is not very high. How many of the cases now free from recurrence will remain so I cannot of course say, but it seems possible—indeed probable—that there may never be any recurrence in several, and we know that life has been much prolonged in comfort in many.

CASE OF STRANGULATED FEMORAL HERNIA,

COMPLICATED BY PROLAPSE OF THE CAECUM AND
ADHESION OF THE VERMIFORM APPENDIX
TO THE SAC.

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This case is recorded because it presents features which must be very unusual.

History.

An elderly woman, aged 47, unmarried, was admitted to the Lockhart Hospital, Lanark, on a Sunday about 3 p.m., suffering from a right strangulated femoral hernia. The previous evening, about 6 p.m., she was seized with sudden sharp pain in the right groin, and a small swelling which previously existed there became tense, larger, and very painful; as the night advanced vomiting and hiccough set in. On the following morning her medical attendant saw her, and urged immediate operation, which she consented to. She stated that about three years ago she was seized with pain and swelling in the right groin. She did not consult her doctor at the time. The pain lasted several days and then gradually subsided, although the swelling still remained. From time to time, however, she had recrudescence attacks, and her friends state that she had not been well for years in consequence of such attacks.

State on Admission.

Temperature 99.4° F., pulse 115, thin and feeble. Hiccough was present, and shortly after admission she vomited about 6 oz. of dark-brown material, which had no distinctive odour. There was a hard, tense, and very painful swelling in the right groin, about the size of a walnut, slightly to the inner side of the middle of Poupart's ligament.

Operation.

An incision was made over the tumour and the sac exposed and opened. A knuckle of bowel came into view; it was plum-coloured, lustrous, but could neither be withdrawn nor reduced within the abdomen. The constricted area was so tight that the left forefinger could not be passed into it for fear of damaging the bowel, so a hernia director was passed down into the sac and beyond the constriction, which was freely divided. The bowel, a knuckle of small intestine, was drawn out, deemed to be viable, and returned within the abdomen. The sac still contained gut however, and on examination this was found to be the caecum lying in the mouth of the sac, and the appendix doubled upon itself and firmly adherent for about 2 in. from its free end to the inner wall of the sac near its fundus. The appendix was freed from its adhesions, amputated, and the caecum returned within the abdomen. The sac was closed; cut away, and the opening closed by a double layer of sutures and the skin wound sutured.

After-History.

The patient made an uninterrupted recovery and left hospital quite well several weeks later.

Description of Specimen.

The appendix measured about 3 in. in length, had a well-developed fatty mesentery, was quite patent, admitting an ordinary silver probe and contained faecal matter. It was considerably thickened and congested at its blind end from old inflammatory exudation and adhesions.