ABDOMINOPERINEAL RESECTION FOR CARCINOMA OF THE RECTUM

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In its brief span, American Surgery has progressed far and it is fair to assume that it will make further advances. The progress of thoracic surgery during the past 20 years has been amazing. Fifteen years ago we little thought that the two, three, or four stage operation for hyperthyroidism would be transformed into a single stage procedure with a mortality varying from 1 to 2 per cent. This has been accomplished in part by a better knowledge of the disease, but it is due chiefly to better preoperative treatment. Quite analogous to this has been the progress made in surgery of the colon and rectum. We have a better understanding of the pathologic physiology, surgical technic has been tremendously improved, and x-rays have rendered invaluable contributions to the diagnosis of early lesions of the colon, but it is sad to relate that, in spite of all the previous teachings, digital examination of the rectum is still frequently neglected. Coincidentally also, inspection seems to have fallen into disrepute. It has become too easy, perhaps too cheap, to say "Have an x-ray and see what is wrong."

Statistics from any institution will show that 75 per cent of the growths in the colon are within reach of the examining finger or the proctoscope and, as every roentgenologist knows, low-lying lesions are much more difficult to diagnose by means of roentgen examination, so that a negative report is not only misleading but gives the patients a false sense of security which may lead to months of delay. The roentgenologist could save himself many errors and at the same time render a great service to the patient if he would refuse to make roentgen examinations of the colon until he had a report that a digital and proctoscopic examination had been done. The digital and proctoscopic examinations will give infinitely more information regarding a growth in the rectum or the rectosigmoid—that is, information relative to its location, its extent, and its fixation, all of which are necessary from the standpoint of determining operability. So, when a patient presents himself with rectal bleeding, do not be content with a visual inspection of the anus to determine whether there are hemorrhoids, but do a digital examination, and if negative, a proctoscopic examination. You, as well as the patient, will be relieved if a malignancy is not found. Only after this procedure has been carried out should the roentgen examination be done. I know a physician in a community not far from mine who made a reputation years ago because he made the patient take off his coat and vest before he examined his chest with a stethoscope. I am sure that you will be amply rewarded if you make this simple routine of digital and proctoscopic examinations for rectal bleeding. You are also aware of the fact

that at least 10 per cent of patients with malignancies of the rectum have had a hemorroidectomy within the six months preceding admission.

If a lesion is found and you are not certain of its nature, the next question that presents itself is, shall we do a biopsy? That depends entirely upon your experience. In case of any doubt, by all means do a biopsy. I feel that a great deal of harm was done 10 or 12 years ago by those who advocated that cancer would be spread by biopsy. It has always been my opinion that far less harm is done by taking a biopsy than by sitting idly by and watching the cancer grow to such proportions that its margins, elevations, and its craters may even spell the word cancer. Furthermore, a hundred and fifty dollar electrocautery machine is not required to do a biopsy. The scissors, snare, or knife are entirely satisfactory.

The diagnosis having been made and the procedure decided upon, the patient should be told that he has a serious complaint and needs immediate surgical attention. I do not think it is fair to minimize the complaint for fear of shocking the patient. To be sure, each patient must be handled somewhat differently. If the patient asks the pointed question, "Do I have cancer?", I tell him the truth. I have never yet to regret it, for then I can use all my ammunition and before I am through I have a cooperative patient. If the patient evades the question, I do the same, provided he is willing to accept the advice. If he is reluctant, then I think it is our duty to inform him further. I have seen too many of these patients delay operation for months because, just to save his feelings, the doctor told him he had a little ulcer. Naturally, the patient does not see why he needs to have a major operation for a little ulcer, so he tries some medicine for a while and, even in this enlightened age, many doctors give medicine for such a lesion.

It is appropriate to speak of gradation of tumors because, when the biopsy diagnosis of carcinoma comes back, the pathologist will usually have made a notation, grade 1, 2, 3, or 4. Grade 1 is supposed to be a good cancer, grade 4 a bad cancer. Word seems to have gotten around that cancers of grades 1 and 2 are to be attacked, but that it is not good cricket to attack grades 3 and 4—these should be relegated either to x-ray or some other nonsurgical treatment. With this opinion, I wholeheartedly disagree. I am in sympathy with everything that increases our knowledge relative to cancer and I think that grading of tumors is an excellent thing from an academic standpoint, but I am distinctly opposed to guiding therapeutic effort merely on a pathologist's statement that this is grade so and so. This is a misconception that I do not blame the pathologist for entirely. He has, to be sure, painted a black picture of grades 3 and 4 and, unfortunately, many surgeons are glad to hide under that cloak and shirk responsibility, but we must remember that grada-

tion of tumors is far from a perfect science. However, it is something that may help the surgeon formulate a prognosis—not before the rectum is removed, but afterward. We have an obligation to relieve, if possible, as well as the obligation to cure. At the present time, clinical judgment surpasses any laboratory test so far as the decision of treatment is concerned. The shortcomings of the grading of tumors as a criterion for the treatment to be used are too numerous to mention here. If a cancer of the rectum is clinically operable, operate regardless of whether it is grade 1 or grade 4 and you will be doing the best thing for your patient.

The treatment having been decided upon, the patient should be encouraged to enter the hospital as soon as possible. Here further investigations should be carried out and on the thoroughness of these examinations and adequate preoperative care depend the success of the operation. A careful physical examination is essential. Studies of blood chemistry and tests of kidney function are important in order to ascertain the risks. In all men over 55 years of age, if they have any urinary disturbance whatsoever, a cystoscopic examination is necessary because of the possibility of associated prostatic hypertrophy which may prove disastrous if not recognized. On account of the location of the tumor and the associated nerve supply, it must not be taken for granted that bladder disturbance is due to pressure or irritation of the tumor. In many of our patients, it has been necessary to do a resection of the prostate either before or after resection of the rectum.

During the stay in the hospital, a high calorie, nonresidue diet is given. Glucose intravenously is administered to build up the glycogen reserve of the liver because many of the patients have been dieting for some time on account of bowel disturbance, the chief symptom of which has been diarrhea. This is not a true diarrhea, however; rather, it is the frequent emission of pus, mucus, and blood from the ulcerated area—as a matter of fact, in most cases of so-called diarrhea, the colon is filled with hard, dry feces and many days are required to empty it. For this purpose we give one ounce of magnesium sulphate daily in divided doses together with daily enemas for 5 or 6 days prior to operation. By this measure, we feel that we can decompress the bowel in all cases of chronic obstruction just as well as by preliminary colostomy.

In the preoperative treatment, the question of intraperitoneal vaccine naturally comes under discussion. I have never been impressed with its value when dealing with cancer of the rectum and rectosigmoid because peritonitis as a cause of death has played a minor rôle in our series. To inject vaccine routinely in a large number of cases, seems to me an unwarranted procedure. It must be remembered that the use of vaccine does not, by any means, eliminate peritonitis. It has been reported to

lower the incidence. Meticulous technic is still far more important than intraperitoneal vaccine in its present form.

Operations for carcinoma in the various segments of the colon have been fairly well standardized but not so far as the rectum and rectosigmoid are concerned. The chief reason for this is the controversy over the undesirability of the colostomy. Posterior resection with perineal anus still has its supporters and many different varieties of operations have been designed. Now other types of segmental resection are being tried anew. However, one has only to look over the records of older, just as able surgeons, and from them these facts are learned—viz., that the operability was low, the mortality high, and the curability rate low. Such is the story from smaller operations or operations devised to save the sphincter. I am not one who believes in the statement handed down from textbook to textbook that cancer of the rectum is different from cancer elsewhere, that it tends to remain localized for long periods of time, and that glandular involvement occurs late. If that were true, why has the curability rate been so miserably low?

Cancer of the rectum and rectosigmoid demands just as radical a procedure as does cancer of the breast if we are to improve our curability rate—and radicalism from the standpoint of the rectum is best attained by the combined abdominoperineal operation which was described by Miles of London and which should bear his name, regardless of a few variations in technic by different operators.

This operation may be done in one or two stages and a surgeon must use that with which he is most familiar and which is best suited to the available facilities at his command. The name "two-stage" obviously carries with it the implication of the factor of safety but this does not necessarily follow. We must remember that when two major procedures are performed on persons in this age group, the hazards of accidental deaths are increased beyond our control by two times. Emboli, pneumonia, and unexplained sudden death are a source of annoyance to all of us.

Then again, many things may happen during the first stage which may delay the second operation for a long time or may give rise to complications which may lead to abandonment of the second stage, such as pneumonia with empyema, severe infection of the abdominal wall, phlebitis, pyelitis, suppuration, parotitis, so that even the two stage is not entirely uneventful. Of course, these complications in some form occur in 10 per cent of cases of the one stage but at least these patients do not have to face another major procedure. In addition, technical difficulties are encountered in the second stage which do not pertain to the one stage. Finally, the combined mortalities from the first and second stage will be

as great or greater than from the one stage. For these many reasons, I personally have favored the one stage procedure because, in a series of over 250 cases, the mortality has been under 10 per cent.

After preoperative preparation which averages about 7 days and to which I attribute no little amount of success, anesthesia is the next thing of importance to consider.

I still favor spinal anesthesia because it affords more relaxation and a quiet abdomen which lends itself to a more rapid performance of the operation. After completion of the spinal anesthesia, a catheter is placed in the bladder and, during the emptying, constant pressure is maintained over the suprapubic area and as soon as the urine has stopped running, the catheter is corked. Otherwise, air will rush into the relaxed bladder and will be as troublesome as a bladder full of urine.

The deep Trendelenberg position is invaluable on account of the deep pelvic dissection which is necessary. The abdominal part of the operation consists of about nine simple, straightforward maneuvers which, if carried out methodically, simplify an otherwise laborious, time-consuming task. The perineal part of the operation is expeditiously done, provided the abdominal dissection has been thorough; otherwise, it likewise will be too time-consuming. The details of these various steps have been described previously.

Blood transfusion is a routine procedure either before or after operation, sometimes before and after, depending upon the condition of the patient. Postoperative treatment is symptomatic.

The colostomy is opened on the second or third postoperative day, depending upon the distension and pain the patient has. The wound is protected with vaseline gauze over which rubber tissue is placed. I feel that infected wounds occur at the time of operation and are not caused by early opening of the colostomy, provided ordinary care is exercised. About 10 days after operation, the colostomy is trimmed down to about one-quarter of an inch above the level of the skin so that the healed wound is just about at the skin level or slightly above.

In the last 200 cases, we have been bringing the colostomy out at the midline and have found it infinitely better from many standpoints. First, it saves time during the operative procedure; secondly, if a colostomy bag is worn, the patient looks symmetrical and not lopsided as is the case with the inguinal colostomy. This is very important in the care of the woman patient. Again, if an inguinal colostomy is used and the patient wears a colostomy bag, it generally rubs the crest of the ilium which leads to irritation and also leakage in case of accident due to improper fitting.

The care of the bladder is very important in these cases. Since extensive pelvic dissection is required, many sympathetic nerve fibers which innervate the bladder are destroyed and about 75 per cent of the patients will have some disturbance of the bladder for a month or two. Formerly, we used a retention catheter for six or seven days but we have abandoned this. Experience has taught us that it is better to catheterize the bladder three or four times a day, and this has led to fewer complications. From 25 to 30 per cent of the patients will void spontaneously and cystitis will be avoided in at least this number, whereas it might have been contracted had a retention catheter been left in place. In only one instance have we had permanent damage to the bladder and that occurred in a case where it was necessary to remove part of the prostate due to fixation. Probably the sphincter itself was interfered with here. Urinary antiseptics and frequent irrigations are used to treat the infected bladder.

The rubber dam and gauze pack employed to support the new pelvic floor and prevent oozing after the operation are removed partly on the second, third, and fourth postoperative days, after which the cavity is irrigated with saline solution or sterile water until most of the discharge has subsided. After this, it is merely swabbed out with cotton pledgets. This is a simple procedure which is taught to some member of the family when the patient is discharged, for 10 to 12 weeks are required for this posterior wound to fill in.

In a normal convalescence, the patient is allowed out of bed in 12 to 14 days. This permits the new peritoneal pelvic floor to sag a little and thereby hastens the obliteration of this large cavity.

The performance of a successful operation does not mean, however, that the surgeon's obligation has been fulfilled. He has another duty, a most important one, and one which is often neglected. He must take time to instruct the patient regarding the care of the colostomy and on this instruction depends the happiness of the patient. The usual instruction is to tell the patient to go to a surgical supply house and buy a colostomy bag. That is a sure way to make him a social outcast. The odor from the rubber is far worse than the odor of the stool. Personally, in my preliminary instruction, I do not even mention that there is such a thing as a colostomy bag. The patient is taught to irrigate the colostomy himself, not to have some member of the family do it because this is always embarrassing to the patient. Many good types of apparatus are on the market, the only objection to them being the cost. All that is necessary is the ordinary enema apparatus, with a little rubber disk on the enema tip which, when placed tightly against the colostomy, will make it water tight.

Experience has taught us that daily irrigations are too frequent. The colon will be kept too clean and soon the patient will complain that he cannot get his bowels to move. We have found it best to irrigate every second day and in a few months, if this routine is carried out at the same time, the bowel will become practically an automaton.

Accidents between irrigations rarely occur and patients wear only a small pad under an abdominal binder suited to their individual tastes. Our instructions and demonstrations regarding the care of the colostomy are more time-consuming than the performance of the operation itself.

I have never been impressed with the desirability of giving the patient a constipating diet. Such a diet may cause diarrhea in another patient, so I tell them to follow the diet they have been accustomed to and eliminate from time to time such things as disagree with them.

The question of postoperative radiation is always a pertinent one. My own feeling is that if the proper operation has been performed, there will be nothing left in the pelvis except small intestines and I do not think it is a good policy to radiate them routinely, except when there are demonstrable glands on the lateral pelvic wall.

In this group, we have operated on patients in an age range from 26 to 74 years. Five per cent of our patients have been 70 or over, and the mortality in this group is the same relatively as in the other age groups. Age alone is not a contraindication to operation. Many patients at 70 are better risks than some at 60, but I do think that good kidney function is essential in patients over 70. Hypertension, arteriosclerosis, diabetes, and obesity have not deterred us from the performance of this operation.

Palliative operations are essential in a certain group of inoperable cases. We have seen patients not benefited a great deal by colostomy and it is important to study these carefully and make a distinction between the pain of obstruction and the pain of metastasis. Routine colostomy in the latter group will only add to the patient's misery and, in my estimation, is contraindicated unless there is obstruction. Colostomy to a well man is but little trouble, but to a bedridden, hopelessly ill individual, it is very disagreeable.

Operability percentage is always of great interest and, with this in mind, I reviewed one hundred consecutive cases of cancer of the rectum as the patients presented themselves for examination beginning July 1, 1937, and going back until 100 consecutive cases had been reviewed.

The following figures are quite informative and give one a comprehensive picture of what happens in a definite group.

Total cases		100	
Did not return		10	
		90	
Inoperable, no treatment	9		
Inoperable, palliative	11	20	
Explored		70	— 77%
Inoperable, liver	10		
Inoperable, local fixation	3	13	
		57	
Combined one stage	54		
Other operations	3	57	

Deaths, 4 — 7.2 per cent

Operability — 63 per cent

Mortality, 4 — 7.2 per cent

2 peritonitis

1 embolus

1 pneumonia