

demonstrate that we possess a powerful therapeutic agent in concentrated light.

Leaving to others the study of the effects of actinotherapy in the general conditions and affections of the internal organs in which it may prove useful, it is to be presumed that by dermatologists it may be employed in the various skin affections that are dependent upon micro-organic or parasitic infection, or where increased tissue metamorphosis is a desideratum. Lupus vulgaris, lupus erythematosus, mycotic eczema, trichophytosis, favus, impetigo, furunculosis, tuberculosis cutis, epithelioma, mycosis fungoides, blastomycosis, actinomycosis, and similar affections are the diseases in which it is likely to prove useful.

144 West Forty-eighth Street.

A NEW OPERATION FOR REMOVAL OF CANCER OF THE RECTUM.*

MATTHEW D. MANN, A.M., M.D.

BUFFALO, N. Y.

The situation of the rectum, placed as it is deep in the bony pelvis, makes it very difficult of access for surgical purposes. Thus far, three routes have been proposed for its removal. As yet no definite decision has been arrived at as to which of these is the best. Each has its advantages and disadvantages, and each has its advocates. The posterior operation, as Murphy very properly says, is difficult, dangerous, and in many respects unsatisfactory; the mortality, he quotes as 21.2 per cent.

The latest proposal for professional favor is that made by Dr. J. B. Murphy.¹ His operation is the resection of the rectum through the vagina. Although the idea of operating by this route is not original with him, yet for the perfected form of the operation we must give him the credit. Murphy's operation seems to have many advantages over the transsacral method. There are no objections attending it except the technical difficulties. These must be very great, but differ, no doubt, with different cases. In an old nullipara they must be almost insurmountable; but when the vagina is roomy and the growth quite low in the rectum, it is probably the best operation which has yet been suggested.

Curiously enough, nobody has yet proposed the resection of the rectum from above.² The nearest approach to it which I have been able to find, is the operation done by J. Price, in which, after removal of the neoplasm, he has united the cut end of the rectum with the vagina. This necessitates defecation through the vagina without any sphincter to give control.

The plan which I have to suggest is suitable for cases in which the growth is too high to be easily reached through the vagina, and has the great advantage of leaving the sphincter intact and the movements of the bowels in their natural course uninterfered with. The possibility of the operation depends on the fact that, by the aid of the Trendelenburg position, the pelvis can be emptied of all the intestines, even the rectum and the sigmoid. This gives plenty of space to work, and makes the operation possible.

I was first led to do it by a mistake in diagnosis. A

patient came to me with a small mass behind the uterus. She complained of some difficulty and pain on defecation. I thought the mass, which was freely movable, was a prolapsed ovary, as it was about the right size, and that the pain in defecation was caused by the pressure upon the ovary. I, therefore, opened the abdomen with a view to the removal of the ovary; but, on passing my finger into Douglas's pouch, I was surprised to find nothing there. While palpating the parts, I discovered the growth in the rectum. I determined at once to resect, believing that the growth was probably malignant and the cause of her trouble. After removing the growth, I found very great difficulty in sewing together the cut ends of the rectum, but finally succeeded quite easily in placing a Murphy button. Then, with one finger in the rectum and the hand in the pelvis above, I had no trouble in uniting the two halves of the button.

The patient made an uninterrupted recovery, and was examined some time after her return home, and found to be in a perfectly healthy condition.

An account of this operation was published in the *American Medical Quarterly* for 1899, as well as the history of two other cases. In that paper I drew attention to the abdominal method of attacking carcinoma of the rectum, but it does not seem to have attracted any notice. I shall, therefore, draw somewhat upon what I have written before, especially upon the reports of cases.

The second case on which I operated was one of stricture of the rectum due to inflammatory exudate. I had previously resected the patient's small intestine, and one year later she came with a recurrence of the old symptoms. At the time of the first operation, I had noticed inflammatory trouble in the pelvic cavity, but her condition did not warrant its removal. I diagnosed stricture from this cause, and proceeded to resect the rectum at the very bottom of the cul-de-sac, exactly as in the case before. In this case the button came away on the eleventh day, and convalescence was complete. The patient has remained well up to the present time, a period of three years.

My next case was not so fortunate. There was a large mass behind the uterus, half as large as one's fist. On opening the abdomen, I found the mass adherent to the posterior wall of the pelvis. It was easily loosened, and in the Trendelenburg position was cut away, both above and below, and four inches of intestine resected. No difficulty was found in pulling up the rectum and in placing a Murphy button. With the finger of an assistant in the rectum, to steady the lower button, the two halves were easily pushed together. A glass drainage-tube was placed from above, the pelvis having been previously thoroughly washed out with salt solution.

The patient did well for four days. During my absence from town attempts were made to remove the button, but were unsuccessful. Following this the patient developed a general peritonitis, from which she died.

Since this case, I have had two others, both of which were successful. In one of them the growth extended below the posterior edge of the cervix uteri. In order to get it out, it was necessary to cut the peritoneum at the bottom of Douglas's pouch, and to pull the rectum up above its peritoneal investiture. The difficulties of placing the lower half of the Murphy button were greater than in the other cases, but did not offer any insurmountable obstacles. In this case the disease recurred within eight months.

* Read in the Section on Obstetrics and Diseases of Women, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

1. Phila. Med. Jour., Feb. 23, 1901, p. 383.

2. The operation of W. R. Pryor (Gyn. Trans., 1900), although done partially through the abdomen, is for carcinoma of the vagina and rectum, and is, therefore, applicable to a different class of cases.

The last case was about the same as the previous one, the carcinoma being easily reached by the finger in the rectum. The patient remains well at present, after a period of five months.

The technic of the operation, as I have now developed it, is as follows: The rectum and vagina should first be thoroughly cleansed. The abdomen being opened, and the patient placed in the Trendelenburg position, the rectum just above the growth is clamped with a long hemastatic forceps and cut off. The sigmoid flexure and rectum are then pulled out of the pelvis, the meso-rectum being slightly cut away if necessary. This leaves the pelvis entirely free for manipulation of the lower end. If the growth be above the peritoneal investment—that is, above the bottom of Douglas's pouch—it should be cut off low enough to secure all the malignant tissue. The diseased portion is then entirely removed, all bleeding vessels being tied. One or two large arteries usually show themselves at this point. The lower end of the rectum is next seized and drawn up, care being taken not to injure it, as it is very easily torn. It is surprising how much this can be pulled up, and how easily it can be manipulated. It has no peritoneal envelop. There is no difficulty in getting plenty of slack to pull down that portion of the rectum above the resection, even after several inches have been removed, for, as Murphy has correctly stated, "the normal position of the sigmoid is in the pelvis, and not in the left iliac fossa, as is generally supposed."

With a short, round, curved needle—the Emmet vesicovaginal fistula needle is the one I use—a silk suture can be run around the end of the gut. The Murphy button is then placed, the piece with the long projection being preferably put in this position. After this step is completed, the other end of the button is placed in the upper cut end of the intestine and the two are brought together. To accomplish this, the lower end of the button must be held by one or two fingers of one hand in the rectum.

If thought advisable, drainage through the posterior cul-de-sac into the vagina may be made, and a rubber drainage-tube placed in this position. In my last case I resorted to this expedient, and believe that it is a valuable addition to the technic of the operation. The abdomen is closed in the usual way.

If the growth extends below the bottom of Douglas's pouch, the peritoneum must be cut close to the uterus, and the incision carried around the rectum. The rectum, with the portion of peritoneum adherent, can then be pulled well up and incised below the growth. The deeper the growth the harder it is to place the Murphy button; and if the growth extends down as low as the level of the external os, then the difficulties will be found to be very great. This, however, should not weigh, because all operations on the rectum are difficult, no matter what the way of approach may be.

I use the Murphy button for the reason that the making of a tight joint by sewing down in the bottom of the pelvis I find to be very troublesome. It may be objected that where the button is placed in the rectum deprived of its peritoneal envelop, union will not take place. I find, however, that this objection is not valid, as in three of my cases the button was applied to the portion of the rectum below the resection, where it was denuded of peritoneum, and yet two were successful.

The cases in which this operation would seem to be especially indicated are those in which the growth is all above the bottom of Douglas's pouch, though I would

not restrict it wholly to such cases. The nearer to the brim of the pelvis, the stronger are the indications for the operation. In one case—a man—I resected in the sigmoid, using the button as before. This, however, I do not count among the cases of resection of the rectum.

Senn, in his work on intestinal surgery, states that resection in the bottom of the pelvis is impossible, and that, for the same anatomic reasons, lateral anastomosis can not be made. My cases would seem to show that Senn's estimate of the difficulties of resecting deep in the pelvis is too high. The Trendelenburg position and the button have made a great change; without them the operation would not be feasible. The usual objections to the button certainly do not count here, as in most cases it is within easy reach, and can be extracted if it does not come away of itself. In my last case I was obliged to remove it, as it seemed to settle into a kind of a pocket and to show no disposition to come away, the bowels, however, moving freely through it.

An instrument which I have found to be of great use in this, and in other operations where the patient is put in the Trendelenburg position, is the self-retaining retractor. In a favorable case, with a moderately long incision, the way in which the interior of the pelvis is made accessible to sight and touch is remarkable.

The Cleveland operating-table is another adjunct which is a great help. This table is so arranged that the operator has easy access to the vagina and rectum while the patient is in the Trendelenburg position.

My friend, Dr. Eugene Smith, surgeon to the Buffalo Charity Hospital, after having seen me operate, has performed the operation once, on a man, and reports that he met with no special difficulties, and that he is pleased with the procedure.

If called upon to limit the indications for this operation, I would say, do Murphy's operation when the lower edge of the growth is less than about one and a half inches from the inner edge of the anus, and in all other cases open above and resect.

I do not claim that this operation is easy under the best of circumstances, but what operation for carcinoma of the rectum is? However, I do maintain that it is feasible and that it gives the best chance to make a clean and complete removal of the neoplasm, and will, therefore, in proper cases give the best attainable results.

DISCUSSION.

DR. HENRY O. MARCY, Boston—I have had no experience in the resection of the lower bowel through an abdominal section. In 1893 I resected the sigmoid for cancer, uniting the segments by a large-sized Murphy button. It came away the twelfth day. I removed a portion of the sacrum and entered the peritoneal cavity from below. The patient died the following year from a return of the disease. This was, so far as I know, the first time the Murphy button had been used in the resection of the lower bowel. My friend, Dr. H. O. Walker, of Detroit, had suggested to me this method of approximation.

DR. J. WESLEY BOVEE, Washington, D.C.—I heard Dr. Edebohls read his paper on this subject. The operation was done in a case of cancer of the rectum associated with a pregnant uterus. The operation was preceded by an abdominal hysterectomy, and I would suggest in doing this work in women that a hysterectomy will in most cases be advantageous, inasmuch as it gives the larger field of operation. Dr. Edebohls' case was a successful one. I believe Dr. Mann's conclusions are correct. These cases where the cancer is fairly well up do better by being removed from above than from below.

DR. MANN, closing the discussion—The subject can not be discussed, as most men have had no experience with it. I think

Dr. Edeboh's suggestion may be of service in some cases by giving a larger field of operation, but in a case of a small uterus I do not think it would be sufficiently in the way to make its removal necessary. A pregnant uterus would, of course, be very much in the way.

THE ACCIDENTS AND COMPLICATIONS OF PELVIC SURGERY AND THEIR TREAT- MENT.*

J. B. DEEVER, M.D.,

PHILADELPHIA.

The necessity for a thorough knowledge of the pelvic viscera, their topographical relations, and the pathology of their diseases, is of paramount importance in dealing with the diseased organs intelligently.

The ordinary procedures of complicated pelvic operations may cause so much damage that even the expert may be taxed to the utmost in dealing with them, e. g., the enucleation of an adherent intraligamentary cyst, or where one or other ureter is involved, a careful dissection may be necessary to free it. The ureter may be damaged to the degree that repair can only be accomplished by an anastomosis, or implantation; or where there is troublesome bleeding, for the control of which the uterine arteries may have to be exposed.

The common occurrence of adhesion, the result of inflammatory process involving the pelvic viscera, are of sufficient importance to call for our careful consideration.

The character of the adhesions vary; some are easily separated, while the old and organized ones will call for considerable manipulation to liberate them.

In this connection, the writer begs to state that only by thorough work can the patient be expected to recover, by which, I mean, get permanently well and remain well. The bane of the abdominal surgeon is the formation of post-operative adhesions, therefore it goes without saying, the fewer left at operation, the better the patient's chances against post-operative pain, etc. The ability to do better, safer and more thorough work by the abdominal than by the vaginal route can not be better demonstrated than by raising the question of the importance of disposing of all adhesions in any given case. The vaginal operation has been spoken of as "the dismal swamp procedure," and rightly, too, I think.

I fear that too many operators are content with simple removal of the lesion. This is only makeshift work. A true artist does not consider a piece of work done until finished, that is, until the structures involved in the disease have been returned to their normal condition, or as nearly so as finished surgical technique can accomplish it. The evacuation of a collection of pus in the pelvis by vaginal puncture, or the evacuation of an appendiceal abscess by simple incision, or the removal of stones from the gall-bladder, leaving a stone or stones in the common duct, can in but few cases be sanctioned by the surgeon. The thorough liberation of adhesions, the covering in of abraded or torn surfaces by peritoneum, I can not be too strong in advocating, for I see many patients who suffer from incomplete work, to conscientiously do otherwise. To finish up a case by undoing the bad work of a previous operation speaks for itself. I am sure, too, that many cases which are subjected to incomplete operation had

better not have been operated at all, as the last state is worse than the first. The practice of filling the abdominal cavity with normal salt solution, does not, in my judgment, prevent adhesions, as it is too quickly absorbed.

The pelvic wall, floor, the rectum, sigmoid, cecum, vermiform appendix, small bowel, omentum or mesentery, bladder, ureter and uterus may be involved singly, or they may all be included in an inflammatory mass or in conjunction with and adherent to a tumor.

The breaking up of adhesions involving the pelvic walls or floor does not entail as great a liability to serious injury as is likely to occur when freeing the viscera; I will, therefore, merely mention the method employed in dealing therewith. The parts having been thoroughly exposed, a point is selected which seems to offer the best point to attack the mass of adhesions and an attempt is made to peel them off, which, in some instances, is accomplished without much difficulty. In others the mass can only be broken through after considerable force has been exerted. Again, it may be found necessary to divide the adhesions with a scalpel.

The terminal portion of the sigmoid flexure, but more particularly the rectum, both from the depth of the latter and its small range of mobility, offer great difficulties, in the process of enucleation, from a mass of adhesions or from a growth, and owing to its fixed position does not permit the same freedom for manipulation as does the sigmoid flexure above it.

In adhesions to these viscera an effort is made to find some point of attack, as in separating adhesions of the wall or floor of the pelvis and working gently away from the imprisoned bowel, which at times, even with the utmost caution observed, is torn, owing to its softened condition, from the inflammatory process. If the bowel has been torn, or the integrity of its wall impaired, the rent should be closed at once, or if too large to permit of this, the opening must be temporarily plugged with gauze until the remaining portion of the operation is completed, when the gauze plug is removed and the opening packed off from the peritoneal cavity with gauze, the gauze end being brought out at the lower part of the abdominal wound, thus favoring the establishment of a fecal fistula. It has been suggested under these circumstances to divide the bowel across and invaginate the proximal end into the distal end, retaining it by a continuous Lembert suture. This I have practiced when the distal end of the bowel was not softened to a degree which would render the procedure useless.

The sigmoid, like the rectum, is liable to be included in an inflammatory mass, but not to the same extent. Adhesion of this portion of the alimentary tract occurs in connection, most commonly, with pelvic tumors, fibroids of the uterus, ovarian or parovarian cysts and some cases of pyosalpinx. Extensive injury of the sigmoid flexure or of the mesosigmoid should not embarrass the operator, as resection and end-to-end union is easily done. The omentum, on account of its wide area of distribution, will be found adherent in a large percentage of the cases requiring abdominal section. It is often found surrounding a purulent collection, or forming a part of its limiting wall, or spread out fan fashion and attached to a pelvic mass. It is, therefore, safer to ligate the adherent structure previous to its separation, with preferably silk ligatures. The omentum is not ligatured en masse, but in sections. In dealing in this manner with the great omentum in elderly people, where the blood vessels have undergone senile change,

* Read in the Section on Obstetrics and Diseases of Women, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.