

THE RESULTS OF THE SURGICAL TREATMENT OF COMPLETE RECTAL PROLAPSE, WITH PARTICULAR REFERENCE TO THE SUSPENSION-FIXATION OPERATION*

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THE HISTORY OF THE SURGICAL management of complete rectal prolapse indicates a constant effort on the part of surgeons, extending back as far as 1848,⁵ to devise a satisfactory method of repair which will give the patient a reasonable chance of obtaining a complete cure from this disabling malady. The innumerable methods of treatment which have been described in the literature attest to the disappointing fact that no entirely satisfactory operative procedure has been found. Since a critical evaluation of the merits of the different operative procedures is difficult because of the variety of procedures used in a limited number of cases by a great many surgeons, and since in the literature there are no adequate follow-up studies, the records of the patients who underwent operation for complete rectal prolapse at the Mayo Clinic from January, 1910, through August, 1951, were reviewed.

The earlier operations attempted to correct complete rectal prolapse by amputation of the prolapsed bowel, narrowing of the lower part of the rectum and anus, plastic repair of a weakened pelvic floor and obliteration of deep cul-de-sac of Douglas, with or without ventral suspension of the uterus.^{1-3, 5}

At a meeting of the Southern Surgical Association in 1938, Pemberton and Stalker⁷ described a suspension-fixation operation for complete rectal prolapse, which had

then been used in 6 cases with apparent success, although the period of follow-up observation was short. These authors surmised that the most important predisposing factor in the development of rectal prolapse was an abnormally loosely attached rectum, and that prolapse could not occur if the rectum was fixed firmly. Thus, in the presence of a loosely attached or excessively mobile rectum, the result of a congenital defect, and such exciting causes as excessive straining at stool over a long period of time, or perhaps some wasting disease, the propulsive movements of the rectum during defecation and increased intra-abdominal pressure produce the force necessary to cause eversion of the rectal wall through the anal canal.

The principle of the suspension-fixation operation was developed from the observation by one of us (J. de J. Pemberton) that when complete mobilization of the rectum from the hollow of the sacrum was necessary in exteriorization operations for lesions of the rectosigmoid and upper part of the rectum, the rectum became fixed in its elevated position as the result of the formation of scar tissue in the retrorectal space. It was thought that in cases of complete rectal prolapse, if the rectum could be similarly mobilized and the entire pelvic colon elevated and straightened out and temporarily maintained in this elevated position, scarring in the retrorectal space would occur and the rectum would be fixed in this

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position, thus preventing recurrence of the prolapse.

The technic of the abdominal suspension-fixation operation has been described in some detail elsewhere.⁷ The essential principles of this operation are adequate and complete mobilization of the rectum down to the tip of the coccyx, elevation of the pelvic colon, thereby straightening out the rectosigmoid and rectum, and temporary fixation of the bowel in its elevated position by suture, through fat tags, to the peritoneum of various portions of the abdominal and pelvic walls and to the uterus on occasion. The usual care should be taken to avoid the ureters and to avoid compromising the blood supply of the rectum by injury to the mesenteric vessels. The peritoneum of the pelvis is closed so as to cover all raw surfaces. During closure, the rectum is held taut in its elevated position. Care should be taken to avoid leaving openings through which the small intestine might herniate. On occasion, a large pack has been placed in the retrorectal space through an incision at the tip of the coccyx and left in place five to eight days to aid in promoting scarring in this area.

The patients receive a minimum of three days of preoperative preparation of the colon (chemotherapy with aureomycin or terramycin, a minimum residue diet and mechanical cleansing of the bowel with enemas and cathartics). It is important postoperatively to avoid gaseous distention of the rectum. This is accomplished by leaving a soft rubber tube, previously passed through the anus, in place four to five days. The patient should be thoroughly instructed about an anticonstipation regimen before dismissal, so that undue straining at stool may be avoided. Strenuous effort is prohibited for six months after the operation.

RESULTS

Suspension-fixation Operation.—Through August of 1951, 56 patients with advanced massive rectal prolapse have been treated

at the Mayo Clinic by the suspension-fixation operation. There were 34 women and 22 men. The average age of the patients at the time of operation was 45.4 years. The youngest patient was 21 and the oldest 67 years of age. Twenty-six of the patients were more than 50 years of age at the time of operation.

The prolapse had been present from six months to more than forty years. In 34 cases (60 per cent), the prolapse had been present five years or longer.

The chief complaint given by the patient was that a mass protruded from the anus. In addition, 42 per cent of the patients had had one or more episodes of rectal bleeding, and 28 per cent complained of varying degrees of fecal incontinence. Other complaints, of less frequent occurrence, were pain in the rectum and perineum, constipation, and mucous discharge from the rectum.

Twenty-four patients had undergone one or more perineal operations prior to their registration at the clinic in an attempt to correct the prolapse, and seven patients had been treated elsewhere by an intra-abdominal procedure, chiefly the Peters-Moschowitz operation.

All of the patients had a proctoscopic examination to determine the nature and degree of prolapse. In all cases the prolapse was "complete," in that all layers of the bowel were present in the protruding mass. Measurements of the size of the prolapsed mass, with the patient straining, consisted of descriptive phrases (size of orange) to measurements, at times, of the diameter of the mass and at other times, to measurements of the length and breadth of the mass. Therefore, no statistical study of the extent of the prolapse is possible.

There were no hospital deaths in this series. In one case, a retrorectal abscess developed which was successfully drained posteriorly, and in another case a pulmonary embolus prolonged the period of hospitalization.

Of the 56 patients, four have been operated on too recently for us to obtain adequate follow-up studies. However, in this group there were no recurrences in from 12 to 18 months after operation. One of the 56 patients died one year after operation of unrelated cause, and another seven patients could not be reached by letters of inquiry. The remaining 44 patients have been traced, either by letter or by re-examination at least two years after operation,

of complete rectal prolapse at the Mayo Clinic in the past 40 years, we have arbitrarily divided the latter into three general groups: (1) obliteration of the cul-de-sac of Douglas with or without ventral suspension of the uterus (Peters-Moschcowitz operation); (2) other intra-abdominal operations, including the Mayo repair of a median perineal hernia,⁴ with or without the use of fascia, and a few earlier procedures in which ventral fixation of the uterus

TABLE I.—*Summary of Data.*

Type of procedure	Total cases	Hospital deaths	Cases traced 2 yrs. or longer	Recurrences	
				Number	Per cent
Suspension-fixation	56	0	44	5	11.4
Peters-Moschcowitz	55	1	46	29	63.0
Other intra-abdominal operations	15	1	12	4	33.3
Perineal operations	62	1	47	27	57.4
Total	188	3	149	65	43.6

(1.6%)

the longest follow-up being 15 years, and the average follow-up being 5.6 years. Five patients had recurrences, a recurrence rate of 11.4 per cent. Three of the five recurrences were "mucosal" according to a letter from the local doctor or on findings at re-examinations at the clinic, and for one of these subsequent perineorrhaphy was required. In one case a "3 cm. recurrence" was reported by the home doctor, and in the other, the nature and degree of the recurrent prolapse could not be ascertained. All the recurrences developed within three years after operation. There was nothing unusual in the history, examination, degree of prolapse, or operative report from which these recurrences might have been anticipated. Sphincter tone was classified as "poor" in two of the cases and "normal" in the other three. Two of the patients were men and three were women.

Other Procedures.—In order to compare the results of the suspension-fixation operation with those of the numerous other operative procedures used in the treatment

was used alone, or plication of the rectum was attempted, and (3) perineal operations, including, in the majority of cases, amputation of the prolapsed bowel, and in a few cases, perineorrhaphy and the Verneuil operation. The results are summarized in Table I.

Peters-Moschcowitz Operation.—Since the first operation utilizing the principle of obliterating the cul-de-sac of Douglas was performed at the clinic in 1913, 55 patients with complete rectal prolapse have been so treated. There was one hospital death from peritonitis. Of the 54 patients surviving operation, 46 have been followed two years or longer. Twenty-nine patients (63.0 per cent) of those traced had recurrences. Most of the recurrences were reported within three years of the operation. The longest follow-up period was 20 years, the average being 10.5 years.

Other Intra-abdominal Procedures.—Fifteen patients with massive rectal prolapse were treated by other intra-abdominal operations, including repair of a median

perineal hernia, uterine suspension alone, and intra-abdominal plication of the rectum. There was one hospital death. Of the patients traced two years or longer, four had recurrences, a recurrence rate of 33.3 per cent. One patient in this series had no recurrence after 31 years.

Perineal Operations.—Sixty-two patients having complete rectal prolapse were treated by some type of perineal operation, chiefly an amputation of the prolapsed bowel. There was one hospital death from peritonitis. Of the 61 surviving patients, 47 were followed two years or longer and 27 (57.4 per cent) had recurrences. The longest follow-up period was 29 years, with an average of 12.8 years. Postoperative strictures were observed in 14 patients (29.8 per cent of those traced).

Comment.—The over-all recurrence rate in all cases of complete rectal prolapse treated surgically at the Mayo Clinic and in which the patients were traced two or more years is 43.6 per cent. This figure includes all degrees of recurrence, from “slight mucosal” to “complete recurrent prolapse.”

The considerably lower percentage of recurrences in the series of suspension-fixation operations suggests that mobilization and elevation of the rectum, with temporary fixation, is an important step in the surgical technic, although other principles of technic may play a part in preventing recurrences. Perhaps a combination of mobilization, elevation and fixation of the rectum and obliteration of the commonly-present deep cul-de-sac as advocated by Orr,⁶ will further improve the results.

Prior to 1935, of 77 patients operated on at the Mayo Clinic for complete rectal prolapse, 56 had some type of perineal procedure; since that date only six of 111 patients have undergone a perineal operation. Because of the high recurrence rate and the high incidence of postoperative strictures, perineal operations have been unsatisfactory in our experience. Gabriel² has re-

ported on a series of 40 patients with rectal prolapse treated by posterior amputation of the prolapsed bowel. Of the 23 patients followed two years or longer, 26 per cent had recurrences. This author mentioned the tendency to formation of strictures and advised the use of Hegar's dilators as a prophylactic measure. The incidence of postoperative strictures was not recorded.

The Peters-Moschcowitz operation is a decidedly inadequate one, as evidenced by the large number of recurrences, even though sigmoidopexy has been used in some cases in addition to ventral fixation of the uterus and obliteration of the cul-de-sac of Douglas.

SUMMARY

The results of the operative treatment of complete rectal prolapse at the Mayo Clinic have been reviewed, and the results of the suspension-fixation operation have been compared with those of other methods of treatment. Comparison of these results suggests that the principles of complete mobilization of the rectum and temporary suspension of the rectum in the elevated position until scarring in the retrorectal space produces permanent fixation, are important in attaining a successful result.

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