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Indru Khubchandani MD

H E BACON

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Complete Prolapse of Rectum and Its Treatment

INDRU T. KHUBCHANDANI, MB, MS, FRCS, MD,
AND HARRY E. BACON, MD, FRSM, PHILADELPHIA

COMPLETE PROLAPSE or procedentia of the rectum is best defined as a circumferential descent of the entire thickness of the rectal wall through the anus. The abnormal extrusion of the mucous membrane only is termed an incomplete or a mucosal prolapse and will be excluded from the discussion in this paper.

Nearly four score operative procedures have been described for this distressing and frequently recurring condition, particularly at the two extremes of life and in the mentally defective. Although the entity has been attacked rationally from an anatomic basis, the results achieved, both immediate and particularly remote, leave much to be desired. Especially disheartening is the fact that even after an apparent anatomic success in controlling the protrusion of the herniating mass, the poor functional result often persists, if only worse in some cases.

In order to lay down the principles of management of this disease, it is of paramount importance to study the etiologic factors underlying the physiopathologic processes. The three broad categories which cover this have been outlined in Table 1. Since Jeannel first described it in 1896 and after the masterly description of Moschowitz (1912), it has been generally agreed to consider the prolapse as a form of sliding hernia, starting as an invagination of the posterior layer of the Pouch of Douglas through the rectal lumen. In recent years Roscoe

Graham (1942) strongly supported this theory. Devadhar of Bombay, in a recent presentation tended to refute this time cherished belief and proposed that the prolapse mechanism started as a lateral invagination on both sides at a constant point, 7.5 cm from anal verge. He maintains that the anal opening is central and not posterior as popularly believed and supports his hypothesis by demonstration of sensory and motor graphic records and serial defecatory barium evacuation studies.

The atonic condition of the muscles of the pelvic outlet is almost a constant feature in cases of rectal prolapse of any degree or duration. Whether it is a causative factor or an effect is a moot point. In the old and the infirm, or in the patients with organic lesions of the cauda equina, the resulting paralysis readily gives way to the protruding mass.

Abnormal mobility of the rectum as an etiologic consideration was also proposed first by Jeannel in 1896 and has since been popularized by Pemberton and Stalker (1939) and Muir (1955). If one were to concur with their arguments, the logical conclusion would be the promotion of adhesions between the unduly mobile terminal segment of the bowel and its surrounding attachments.

It is generally agreed that the congenital absence or defect of normal supportive structures, or their weakening, dislodgement or destruction contributes to the prolapse formation. The absence of the sacral curve, the high position

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Reprint requests to 255 S 17th St, Philadelphia, Pa 19103 (Dr. Bacon).

TABLE 1.—*Etiology of Complete Rectal Prolapse*

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| I. An abnormally deep rectovaginal or rectovesical pouch |
| II. Lax and atonic condition of the musculature of the pelvic floor and anal canal |
| III. Lack of normal fixation of the rectum |

of the bladder and the uterus, and an almost vertical position of the rectum in children, are factors worthy of mention. Debilitating diseases and nutritional disturbances, giving rise to absorption of the ischioanal fat, should be cited. Undoubtedly straining at stool is an important causative factor and is usually concomitant with, or the result of a diarrhetic condition or an obstinate constipation.

Intrinsic lesions of the bowel may initiate an intussuscepting process by dragging down its lining. Trauma of the parturition with extensive lacerations of perineum may result in a permanently defective pelvic outlet with potential herniation tendencies. This may result in a not so uncommon situation of rectal procedentia accompanied by uterine prolapse, necessitating corrective conditions for both conditions. Several of the operations listed in Table 2 have never found much favor and others, although enjoying popularity at one time, have gradually been put aside. Critical analysis reveals a high recurrence rate even in expert hands, especially when long-term follow-ups are considered and the functional result is borne in mind. In a recent panel on the prolapse of rectum moderated by Hughes of Australia, Gabriel commended the use of Thiersch procedure using a silver wire and Mayo, describing the results of ten-year follow-up of 81 cases, reported the recurrence rate after Moschowitz procedure to be over 60%, and that following Pemberton-Stalker procedure to be over 28%. On combination of the two operations, the recurrence rate was reduced to 13.2%. Butler, of St. Mark's Hospital, described his results of operations on 53 patients, the majority of whom had intra-abdominal fixation with no excision. He reported only one recurrence on a ten-year follow-up. Devadhar, of Bombay, proposing an operation of reversed intussusception and lateral plication, reported no recurrence on a three-seven year follow-up of 28 cases. Ole Backer, of Copenhagen, suggested that the Pemberton-Stalker proctopexy, without any attempt at repair of pelvic outlet, produced better results. Altemeier reported on a 12-year follow-up of 53 cases treated by one stage perineal repair. There were only two recurrences. Reporting in February, 1963, Ripstein and Lanter suggested a V-shaped fascia lata graft to strengthen the anterior pelvic defect.

TABLE 2.—*Treatment of Complete Rectal Prolapse in Adults (Modified From Goligher)*

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|---|
| I. Operations to narrow or strengthen the openings in pelvic outlet, eg, Thiersch operation, suture of puborectales by perineal, abdominal or perineoabdominal routes |
| II. Operations to obliterate or remove the abnormally deep rectovaginal or rectovesical pouch of peritoneum (Moschowitz, Graham) |
| III. Operations to fix the colon—colopexy (Pemberton Stalker, Muir's anterior resection) |
| IV. Operations to fix the rectum—perineal or abdominal approach (eg, Pemberton Stalker, Dunphy) |
| V. Perineal amputation or rectosigmoidectomy (Auffret-Mikulicz-Miles' procedure, Gabriel) |
| VI. Complete excision of rectum with establishment of a permanent colostomy |
| VII. Combination of two or more of above operations |

In a 12-year follow-up of 45 cases, they reported only one recurrence. Blair et al published only two recurrences in a series of 19 cases of David-Rehn-Delorme type of perineal repair. They emphasized the safety of a perineal approach, particularly in a poor risk patient.

Over the years one of us (H. E. B.) has used various procedures for this perplexing problem and for a few years, we have been convinced that the best results can only be obtained by a logical attack on the hernia, as in any other region, particularly when one is dealing with a sliding variety. Proper exposure and visualization of the anatomy, the isolation of the hernial sac and its excision and the repair of the weakened tissues in front of the hernial sac are the steps mandatory to perform a sound repair. If the procedure can be supplemented with advantage by excision of the redundant intussusception with some form of fixation of the lax segment, the recurrence rate can be reduced to a negligible proportion. In effect in the last 29 cases, it has been our practice to perform, in all patients who are deemed to be good surgical risks, an abdominal rectosigmoidectomy (anterior resection). The two approximated ends are brought together under light yet safe tension and nonabsorbable sutures are placed between the presacral fascia and the site of anastomosis. Plication of lateral ligaments is carried out as an additional measure. In females the uterus is supported after the Gilliam-Webster procedure. The results are shown in Table 3.

Technique

The patient is induced and maintained with continuous epidural anesthesia. The abdomen

TABLE 3.—Complete Rectal Prolapse—86 Cases* (Bacon and Khubchandani) (1950-1964)

	No. Pts	Deaths	Results	Recurrences	No. Requiring Reoperation or Later Sphincter Plasty
Fixation, obliteration plication, approximation Thiersch	39	0	Fair	14	13
Resection, Mikulicz etc	14	2	Improved	2	2
Resection, anterior resection	29	0	Excellent, 1 anastomosis	0	1 temp trans colostomy
Refused operations	4				
Total	86	2		16	15

* From the private service of Harry E. Bacon.

is opened through a left paramedian rectus retracting incision. With the patient in the Trendelenburg position, the small bowel is packed off. The dissection of the sigmoid colon begins in the left gutter at the white line of Monk and is carried to the rectouterine or rectovesical sulcus. During the dissection the left ureter and the spermatic or ovarian vessels are identified and carefully protected. The dissection of the medial leaf of the sigmoid mesocolon is then carried out, up to the origin of the inferior mesenteric artery proximally and to the point of dissection on the opposite side distally. The rectum is mobilized anteriorly and posteriorly, paying particular attention to the caudad dissection, extending below the level of the coccyx. The lateral ligaments are divided close to the bowel and the inferior mesenteric artery is ligated at its origin. The entire redundant bowel is resected, and an end-to-end anastomosis is made between the open ends of the bowel. Thereafter about four No. 0 silk sutures are introduced between the presacral fascia and the lower segment of the rectum or the site of the anastomosis. The lateral cut edges of the lateral ligaments are approximated to the endopelvic fascia of the opposite side by two or three nonabsorbable sutures, passing in front of the rectum. In patients with a well-developed psoas minor tendon, a few nonabsorbable sutures may be placed to advantage between the taeni coli of the sigmoid colon and the tendinous portion of the muscle. Reconstruction of the cul-de-sac and the closure of the peritoneal defect complete the procedure. In the female, a modified Gilliam-Webster uterine suspension is an additional useful procedure. Here a slit is made in both broad ligaments, and the round ligament is grasped with curved hemostats and drawn through. A temporary ligature is placed around

each round ligament and caught with forceps. About one inch above the pubic spine, the skin and fat are retracted and the aponeurosis rendered bare on each side. A stab wound is made through the aponeurosis, muscle, and peritoneum one inch from the margin of the incision. A hemostat is introduced through this stab wound and the ligature around the round ligament is grasped and withdrawn. A Hemo-Vac sump drain is placed in the right pelvic space and the abdomen closed in layers, using 0 chromic catgut for the peritoneum in continuous suture, No. 30 alloy steel wire for the aponeurosis in interrupted fashion. The transplanted round ligaments are then sutured to the superior surface of the aponeurosis with No. 32 alloy steel wire and the procedure completed by approximation of the subcutaneous layers and the skin with No. 35 wire interrupted mattress sutures.

Summary

Anterior resection (rectosigmoidectomy) and fixation of the anastomosis in our experience offers the most promising results without a mortality and with low recurrence rate. To date, a follow up of a maximum of 14 years and a minimum of one year has revealed no recurrence in 29 patients. For the very old and the infirm, the Thiersch procedure is the most innocuous operation consistent with effective control of the prolapse and continence.

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