

Practice Parameters for the Management of Rectal Prolapse

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Prepared by the Standards Practice Task Force of the American Society of Colon and Rectal Surgeons

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It should be recognized that these guidelines should not be deemed inclusive of all proper methods of care or exclusive of methods of care reasonably directed to obtaining the same results. The ultimate judgment regarding the propriety of any specific procedure must be made by the physician in light of all of the circumstances presented by the individual patient.

STATEMENT OF THE PROBLEM

Rectal prolapse, internal intussusception, and solitary rectal ulcer syndrome comprise a spectrum of anatomical abnormalities involving descent of full- or partial-thickness rectal wall associated with pelvic floor dysfunction. These conditions, although benign, can be extremely debilitating because of the discomfort of prolapsing tissue both internally and externally, associated drainage of mucus or blood, and the common occurrence of fecal incontinence or constipation. In patients with rectal prolapse, diastasis

of the levator ani, an abnormally deep cul-de-sac, a redundant sigmoid colon, a patulous anal sphincter, and loss of the rectal sacral attachments are commonly found.¹⁻⁶ In times past, restoration of normal anatomy to treat rectal prolapse was considered a definition of success. However, the presence of multiple operations to correct this problem indicates that the achievement of excellent outcomes is somewhat elusive.

Women aged 50 and older are 6 times as likely as men to present with rectal prolapse.⁷⁻⁹ Although it is commonly thought that rectal prolapse is a consequence of multiparity, approximately one-third of female patients with rectal prolapse are nulliparous. The peak age of incidence is the seventh decade in women, whereas the relatively few men who have this problem may develop prolapse at the age of 40 or less. One striking characteristic of younger patients is their increased tendency to have autism, syndromes associated with developmental delay, and psychiatric comorbidities requiring multiple medications.¹⁰ Young male patients with rectal prolapse also tend to report significant symptoms related to bowel function, specifically evacuation.

Approximately 50% to 75% of patients with rectal prolapse report fecal incontinence, and 25% to 50% of patients will report constipation.¹¹⁻¹⁵ Incontinence in the setting of rectal prolapse may be explained by the presence of a direct conduit (the prolapse) bypassing the sphincter mechanism, the chronic stretch and trauma to the sphincter caused by the prolapse itself, and continuous stimulation of the rectoanal inhibitory reflex by the prolapsing tissue. Pudendal neuropathy has been demonstrated in up to one-half of patients with prolapse¹⁶ and may be responsible for denervation-related atrophy of the external sphincter musculature.¹⁷ Constipation associated with prolapse may result from intussuscepting bowel in the rectum creating a blockage that is exacerbated with straining, pelvic floor dyssynergia, and colonic dysmotility.^{13,14}

METHODOLOGY

An organized search of MEDLINE/PubMed and the Cochrane Database of Systematic Reviews and Clinical

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TABLE 1. The GRADE system: grading recommendations^a

	<i>Description</i>	<i>Benefit vs risk and burdens</i>	<i>Methodologic quality of supporting evidence</i>	<i>Implications</i>
1A	Strong recommendation, high-quality evidence	Benefits clearly outweigh risk and burdens or vice versa	RCTs without important limitations or overwhelming evidence from observational studies	Strong recommendation, can apply to most patients in most circumstances without reservation
1B	Strong recommendation, moderate-quality evidence	Benefits clearly outweigh risk and burdens or vice versa	RCTs with important limitations (inconsistent results, methodologic flaws, indirect or imprecise) or exceptionally strong evidence from observational studies	Strong recommendation, can apply to most patients in most circumstances without reservation
1C	Strong recommendation, low or very low quality evidence	Benefits clearly outweigh risk and burdens or vice versa	Observational studies or case series	Strong recommendation but may change when higher-quality evidence becomes available
2A	Weak recommendation, high-quality evidence	Benefits closely balanced with risks and burdens	RCTs without important limitations or overwhelming evidence from observational studies	Weak recommendation, best action may differ depending on circumstances or patients' or societal values
2B	Weak recommendations, moderate-quality evidence	Benefits closely balanced with risks and burdens	RCTs with important limitations (inconsistent results, methodologic flaws, indirect or imprecise) or exceptionally strong evidence from observational studies	Weak recommendation, best action may differ depending on circumstances or patients' or societal values
2C	Weak recommendation, low or very low quality evidence	Uncertainty in the estimates of benefits, risks and burden; benefits, risk and burden may be closely balanced	Observational studies or case series	Very weak recommendations; other alternatives may be equally reasonable

GRADE = Grades of Recommendation, Assessment, Development, and Evaluation; RCT = randomized controlled trial.

^aAdapted from Guyatt et al.¹⁸ Table 2. Used with permission.

Trials was performed, from 1978 to June 2010, using the key words “rectal prolapse,” “proctientia,” “laparoscopy,” “suture rectopexy,” “mesh rectopexy, resection rectopexy,” “perineal rectosigmoidectomy.” Selected embedded references were also reviewed. All English language manuscripts and studies of adults were reviewed. Recommendations were formulated by the primary authors and reviewed by the entire committee. The final grade of recommendation was performed using the Grades of Recommendation, Assessment, Development, and Evaluation (GRADE) system¹⁸ (Table 1) and reviewed by the entire Standards Committee.

RECOMMENDATIONS

Evaluation of Rectal Prolapse

1. The initial evaluation of a patient with rectal prolapse should include a complete history and physical examination. Grade of Recommendation: Strong recommendation based on low quality evidence 1C

Before operative intervention, a careful history and physical examination should be performed. If the diagnosis is suspected from the history, but not detected on physical examination, confirmation can be obtained by asking the patient to reproduce the prolapse by straining while on

a toilet with or without use of an enema. Inspection of the perineum with the patient in the sitting or squatting position is helpful for this purpose. A common pitfall in the diagnosis of rectal prolapse is the potential for confusion with prolapsing internal hemorrhoids or rectal mucosal prolapse. Usually, these conditions are easily distinguished by clinical examination. Close inspection of the direction of the prolapsed tissue folds will reveal that in the case of full-thickness rectal prolapse, the folds are always concentric, whereas hemorrhoidal tissue or rectal mucosa develops radial invaginations.

Full inspection of the perineum and complete anorectal examination is equally important. A patulous anus with diminished sphincter tone is usually identified. Proctoscopy reveals a solitary rectal ulcer on the anterior surface of the rectum in 10% to 15% of cases. In the event that the prolapse is still elusive, patients can be asked to photograph the prolapse at home. Twenty to thirty-five percent of patients with rectal prolapse report urinary incontinence, and about 15% to 30% have significant vaginal vault prolapse.^{9,20} These symptoms require evaluation, and potentially, multidisciplinary surgical intervention.

2. Additional tests such as a defecography, colonoscopy, barium enema, and urodynamics can be used selectively to define the diagnosis and identify other

important pathology. Grade of Recommendation: Strong recommendation based on moderate quality evidence 1B

If the prolapse cannot be produced during the physical examination, then a defecography may reveal the problem. Defecography may also reveal associated defects such as cystocele, vaginal vault prolapse, and enterocele that may, depending on symptoms, require treatment as well.^{21,22} Although uncommon, a neoplasm may form the lead point for a rectal intussusception.²³ For this reason, and because this problem often occurs in the older population, colonoscopy should be performed based on existing guidelines of appropriate screening for colorectal cancer. A significant finding on colonoscopic inspection may change the operative approach. For those patients who also have symptoms of vaginal prolapse or urinary incontinence, urodynamics and urogynecologic examination should be considered because surgical intervention may be needed for both the anterior and posterior compartments of the pelvis.^{24–26}

3. Physiologic testing may be useful to assess functional disorders associated with rectal prolapse, such as constipation or fecal incontinence. Grade of Recommendation: Weak recommendation based on low quality evidence 2C

Do Anorectal physiology studies rarely change the operative strategy for rectal prolapse, but they can often guide treatment for associated functional abnormalities, in particular, in the postoperative period. Patients will often present with rectal prolapse in the setting of lifelong severe constipation. These patients require special consideration in accordance with the ASCRS constipation practice parameter.²⁷ Anorectal physiology testing to assess for pelvic floor dyssynergia and a transit study to rule out colonic inertia should be considered in these situations. Patients with pelvic floor dyssynergia may benefit from postoperative biofeedback, and those who have evidence of surgically amenable slow-transit constipation, and are continent, may be candidates for subtotal colectomy in addition to a rectopexy.²⁸

Chronic dilation of the anal sphincter with diminished internal anal sphincter pressures is a common finding and can lead to fecal incontinence. Again, the evaluation of these patients should be in accordance with the ASCRS practice parameter for fecal incontinence²⁹ and may include endorectal ultrasound to evaluate sphincter defects, and anorectal manometry and pudendal nerve testing, as well. The finding of increased nerve conduction periods (nerve damage) may have postoperative prognostic significance for continence; patients with evidence of nerve damage may have a higher rate of incontinence following surgical correction of the prolapse, although more studies are required to confirm this.^{30–32} In general, patients with fecal incontinence secondary to rectal prolapse will have improvement in their symptoms once the prolapse is treated. Unfortunately, in most studies, neither prope-

ra-rectomy nor nerve conduction velocities have served as reliable predictors of postoperative function.³³ Decreased anal squeeze or resting pressures may predate the actual development of the prolapse and contribute to the development of the condition.

Nonoperative Management

1. Although many patients who present with rectal prolapse are older and have multiple comorbidities, there is little nonoperative treatment available for symptomatic rectal prolapse. Grade: Weak recommendation based on low-quality evidence 2C

Addressing symptoms of constipation using fiber and stool softeners may be of use.³⁴ Table sugar has been used to reduce incarcerated rectal prolapse by absorbing the edema of the rectal, thus making it easier to reduce.³⁵ However, this does not definitively treat the condition. There are no studies that compare surgical and medical management of rectal prolapse.

Operations for Rectal Prolapse

Surgery is the mainstay for treatment of rectal prolapse. However, the number of procedures described in the literature both historically and in recent times continues to increase. Operative repairs include anal encirclement (historical interest only), mucosal resection, perineal proctosigmoidectomy, anterior resection with or without rectopexy, suture rectopexy alone, and a host of procedures involving the use of synthetic meshes affixed to the presacral fascia. Two predominant general approaches, abdominal and perineal, are considered in the operative repair of rectal prolapse. The surgical approach is dictated by the comorbidities of the patient, the surgeon's preference and experience, and the patient's age and bowel function.³⁶ Although numerous operative approaches to rectal prolapse are described using both abdominal and perineal techniques, only a few are actually routinely advocated, and many are of historical interest only. Discussed here are procedures in common practice and routinely reported on in the literature.

Abdominal Procedures for Rectal Prolapse

1. In patients with acceptable risk, procedures incorporating transabdominal rectal fixation are typically the procedure of choice for the treatment of rectal prolapse. Grade of Recommendation: Strong recommendation based on moderate quality evidence 1B

In general, it is believed that the perineal approach results in less perioperative morbidity and pain, and a reduced length of hospital stay. However, recurrence rates that are 4 times higher than those for abdominal operations and worse functional outcome as a result of resection of the rectum have prevented this approach from becoming the procedure of choice.^{11,34,37} Abdominal operations

generally have superior overall results and have become the preferred treatment for younger and healthier patients. However, morbidity and mortality is slightly higher with an abdominal approach, making the consideration of patient comorbidities essential in deciding the appropriate repair.^{33,34}

Suture Rectopexy

1. Rectopexy is a key component in the abdominal approach to rectal prolapse. Grade of Recommendation: Strong recommendation based on low-quality evidence 1C

The fixation of the rectum in the pelvis with suture, first described by Cutait³⁸ in 1959, aims to correct the telescoping of the redundant bowel and causes fixation of the rectum from the resultant scarring and fibrosis. The recurrence rates for suture rectopexy are generally reported to be from 3% to 9%.^{39–43} Rectopexy can also produce new-onset or worsened constipation. Fifteen percent of patients experience constipation for the first time following rectopexy, and at least 50% of those who are constipated preoperatively are made worse.⁴⁴ The precise etiology of constipation is unclear. Mechanical as well as functional reasons for constipation should be considered.

2. A sigmoid resection may be added to rectopexy in patients with prolapse and preoperative constipation, but it is not necessary in those without constipation. Grade of Recommendation: Strong recommendation based on moderate-quality evidence 1B

Resection rectopexy is a technique first described by Frykman and Goldberg in 1969⁴⁵ and popularized in the United States in the past 30 years. The appeal of the procedure includes the lack of artificial mesh, ease of operation, and resection of “redundant” sigmoid colon. Recurrence rates are low, ranging from 2% to 5%, and major complication rates range from 0% to 20% and relate either to obstruction or anastomotic leak. The addition of sigmoidectomy to the operation was felt to be associated with a lower recurrence rate and improved functional outcome with a minimal increase in morbidity.^{46,47} It seems to reduce constipation significantly in those who report this symptom preoperatively in some studies.^{34,46,48} Others have argued that sigmoidectomy is an inadequate operation for a chronic motility problem that affects the entire bowel, and those patients should be formally evaluated preoperatively and subtotal colectomy recommended if colonic inertia is detected. Although some patients who report incontinence before surgery will have an improvement in symptoms even after a sigmoid resection, resolution of fecal incontinence is less common if sigmoid resection is performed.³⁴ There is increasing evidence that sigmoid resection may not be necessary in those who report no history of constipation and whose predominant complaint is fecal incontinence. This particular patient

group does not seem to be predisposed to future constipation.⁴⁹

3. Division of the lateral stalks during rectal dissection may worsen symptoms of constipation postoperatively, but it is associated with decreased recurrence rates. Grade of Recommendation: Weak recommendation based on moderate-quality evidence 2B

Independent of the technique used to perform the rectopexy, the division of the lateral stalks during the rectal dissection has been associated with worsening constipation.^{6,34,43,47,50–53} It was theorized that the denervation of the rectum from the neural efferents thought to reside in the lateral ligaments was the cause of this complication. As a result, a revised version of the resection rectopexy advised preservation of the lateral stalks and unilateral fastening of the rectal mesentery to the sacrum at the level of the sacral promontory. However, multiple other studies examining the onset of constipation after preservation of the lateral stalks noted constipation in 18% to 89% of patients in comparison with 14% to 48% of those patients with lateral stalks divided. Furthermore, although there can be some improvement in constipation with preservation of the lateral ligaments, recurrence rates are found to be increased.^{34,51,53}

Mesh Rectopexy

1. The Ripstein procedure with fixation of mesh from the anterior rectal wall to the sacral promontory after posterior mobilization may be used for treatment of rectal prolapse, but it is associated with higher morbidity. Grade of Recommendation: Strong recommendation based on low-quality evidence 1C

Prosthetic materials have long been used to affix the rectum to the sacrum to treat rectal prolapse. The Ripstein repair⁵⁴ (and its many iterations) involves placement of a prosthetic mesh around the mobilized rectum with attachment of the mesh to the presacral fascia below the sacral promontory.¹³ Recurrence rates for this procedure range from 2.3% to 5%. After mobilization of the rectum, Ripstein originally described using a band of rectangular mesh placed around the anterior aspect of the rectum at the level of the peritoneal reflection. Sutures were used to secure the mesh to the rectum anteriorly and the rectum was pulled upward and posterior. Then, both sides of the mesh were sutured to the presacral fascia. Recurrence rates ranged from 4% to 10%, but complication rates were excessive, up to 50%, primarily because of the placement of a foreign material on the anterior rectal wall.^{55–57}

Because of, including large-bowel obstruction, erosion of the mesh through the bowel, ureteral injury or fibrosis, small-bowel obstruction, rectovaginal fistula, and fecal impaction, Ripstein modified the technique with posterior fixation of the mesh to the sacrum with attachment

of the ends of the mesh to the rectum laterally.⁵⁸ Recurrence rates are similar. Subsequent postoperative morbidity rates are 20%, but most of these complications are minor. Mesh rectopexy results in significant improvement in fecal incontinence in 20% to 60% of patients.⁹

2. A modified Wells procedure using a variety of foreign materials for posterior fixation of the rectum may be used for treatment of rectal prolapse. Grade of Evidence: Weak recommendation based on moderate-quality evidence 2B

Wells originally described fixation of the rectum using an Ivalon sponge and transection of the lateral ligaments. He reported excellent results with minimal complications.⁵⁹ A randomized trial of Ivalon (polyvinyl alcohol) sponge vs suture rectopexy found comparable recurrence rates but increased complication rates and postoperative constipation in the Ivalon group and recommended that this technique be abandoned.⁴³ The Ivalon sponge is no longer commercially available. However, the modified Wells technique using other materials such as polyester or polypropylene mesh^{60,61} continues to be popular, especially for laparoscopic approaches.

3. The ventral mesh rectopexy reduces constipation by avoiding posterolateral mobilization of the rectum and produces results similar to other abdominal approaches. Grade of Recommendation: Weak recommendation based on moderate-quality evidence 2B

D'Hoore and colleagues⁶² first described the ventral rectopexy repair and its potential advantage in avoiding postoperative constipation. The technique involves mobilization of the anterior wall of the rectum with fixation of mesh to the anterior wall and then fixation of the mesh to the sacrum. This is in contrast to the Orr-Loygue procedure,⁶³ where the rectum was mobilized both anteriorly and posteriorly, before fixation to the sacrum. A systematic review of 12 nonrandomized case series of 728 patients undergoing ventral rectopexy reported a recurrence rate of 3.4, and a weighted decrease in the postoperative constipation rate was estimated to be 23%. However, new onset of constipation was also noted to be 14.4%.⁶⁴

Anterior Resection

1. The use of anterior resection alone to treat rectal prolapse is associated with higher recurrence rates and significant operative and postoperative morbidity; it should not be considered as a first-line treatment. Grade of recommendation: Strong recommendation based on moderate-quality evidence 1B

Anterior resection was described as an alternative strategy to repair prolapse in 1955, and there are some advocates of the technique. Unfortunately, in several retrospective reviews, several shortcomings are evident. In one review of 113 patients, the recurrence rate continued to climb after 2, 5, and 10 years to 3%, 6%, and 12%, with

an operative morbidity of 29%, including 3 anastomotic leaks.⁶⁵ Another review confirmed that, with an average follow-up of 6 years, recurrence occurred in 7% of cases.⁵⁰ A low pelvic anastomosis in those with borderline continence may cause complete loss of control. Careful selection of patients is necessary for this procedure, and, in general, given the slightly higher recurrence rates and lack of functional advantages, it is not widely practiced.

Adjunctive Operative Techniques for Abdominal Procedures

1. A minimally invasive approach to rectal prolapse by experienced surgeons compares favorably with an open repair. Grade of Evidence: Strong recommendation based on moderate-quality evidence 1B

All abdominal approaches to rectal prolapse have been performed laparoscopically over the past decade with essentially similar results.^{34,66–69} The indications for performing a laparoscopic procedure are primarily related to the indications for an abdominal approach; patients without previous abdominal surgery are excellent candidates, but prior pelvic surgery is not necessarily an exclusion criterion. The laparoscopic treatment of rectal prolapse was first described in 1992 and involved a rectopexy without sigmoid resection.⁷⁰ Since that time, numerous series have demonstrated equivalent recurrence rates (4%–8%) and morbidity (10%–33%) of the laparoscopic repair in comparison with open approaches, but clear benefits in terms of pain control, length of stay, and return of bowel function.^{15,34,68} In addition, the feasibility of a minimally invasive approach for colorectal resective procedures has been demonstrated in the high-risk patient.⁷¹ Wound complication rates have also been found to be decreased in laparoscopic surgery for prolapse. Certainly, those who undergo rectopexy without resection are at very low risk for infection because only trocar incisions are needed. The actual surgical technique to perform laparoscopic rectopexy or resection is the same as that used for open repairs. The goals of surgery remain the same, to eradicate the full-thickness rectal prolapse, improve bowel function and continence, and minimize recurrence rates.¹⁵ However, recurrence rates should be judged in light of the length of follow-up, because a significant percentage of recurrences may occur several years after treatment.^{72–74}

Recent applications of robotic surgery for colorectal conditions have focused on pelvic operations because of the ease of maintaining one field for the procedure. Only a few series have been published with small numbers of patients that have demonstrated equivalent outcomes compared with laparoscopic approaches. Disadvantages include longer operating time and cost. However, visualization and ease of suturing and tying account for much of the interest in this technique.^{75–78}

Perineal Operations for Rectal Prolapse

1. Patients with a short, full-thickness rectal prolapse can be treated with a mucosal sleeve resection; but, for a longer prolapse, it is associated with a higher recurrence rate compared with abdominal approaches. Grade of Recommendation: Strong recommendation based on low-quality evidence 1C

For patients with a short, full-thickness rectal prolapse or a mucosal prolapse, a Delorme procedure can be performed. It involves a circumferential mucosal sleeve resection and imbrication of the muscularis layer with serial vertical sutures. Recurrence rates are higher than the abdominal approaches in the range of 10% to 15%.^{79–82} This procedure is advocated for those who are considered “high risk” for an abdominal procedure because of comorbidities or to avoid risk of nerve damage. Complications such as infection, urinary retention, bleeding, and fecal impaction occur in 4% to 12% of cases.^{79,82} Constipation and fecal incontinence improve following surgery, but urgency and tenesmus do occur. Although restoration of function is not uniform in the series surveyed, in one of the few studies reporting postoperative manometric findings, both mean resting and squeeze pressures were significantly increased by the procedure.⁸¹

2. Patients with a full-thickness rectal prolapse who are not candidates for an abdominal operation may be treated with a perineal rectosigmoidectomy but are susceptible to higher recurrence rates in comparison with abdominal approaches. Grade of Recommendation: Strong recommendation based on low-quality evidence 1C

Perineal rectosigmoidectomy involves the full-thickness resection of the rectum and sigmoid colon via the anus with a coloanal anastomosis by the use of sutures or a stapling device. This operation can be performed without general anesthesia, involves a shorter hospital stay, and has lower complication rates (<10%), which include bleeding from the staple or suture line, pelvic abscess, and, rarely, an anastomotic leak. As a result, patients undergoing perineal proctosigmoidectomy are generally older with significantly more comorbidities than those who are considered for abdominal repair.^{11,83} However, recurrence rates have been reported to be as high as 16% to 30%.^{11,83–86} Other studies have shown that the use of levatoroplasty to treat levator diastasis can reduce recurrence rates from 21% to 7%.^{87,88} Only one small randomized controlled trial (n = 20) has compared perineal rectosigmoidectomy with an abdominal approach. The recurrence rate was 10% for the perineal group vs 0% for the abdominal group.³⁷

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