

The Spectrum of Rectal Prolapse Disease: General Considerations to Guide the Surgical Management

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Abstract

Rectal prolapse disease is a disorder of the posterior pelvic floor compartment. The assessment of the middle and anterior pelvic floor compartments is mandatory, as other disorders often co-exist with implications in the final surgical management. External rectal prolapse is an entirely surgical disorder; surgery is the only treatment option to correct this condition. The internal rectal prolapse is a disorder where predominates the conservative treatment with excellent outcomes and a minority is a candidate for surgery. External and internal rectal prolapse conditions may present symptoms of multi-factorial origin; these symptoms may be studied in pre-operative work-up by complex pelvic examinations predicting the surgical outcomes: severe pelvic functional disorders often are not improved by anatomical surgical operations. In external rectal prolapse the decision making for surgery is easy as it is the only treatment. In internal rectal prolapse, the maximum benefit for patients comes from a Multi-Disciplinary Team for pelvic floor disorders, where except the correct diagnosis the necessary conservative measures are available for the patients with internal rectal prolapse.

Keywords: Rectal prolapse; External rectal prolapse, internal rectal prolapse.

Introduction

External and internal rectal prolapse are two different chronic rectal conditions that may require surgical intervention. Diagnosing external rectal prolapse is accessible based on physical examination, and the patient's history. In internal rectal prolapse the diagnosis may be more complex and the grade of rectal prolapse should be defined as surgery is addressed in advanced grades of internal rectal prolapse and after the failure of the conservative treatment; this condition may be asymptomatic in initial or advanced grades of internal rectal without any need for further therapy.

The question which is the best operation for rectal prolapse disease is without answer as the patient's characteristics create large and heterogeneous groups of patients; the spectrum of rectal prolapse is quite large and numerous surgical operations are in use without any guidelines for the use of the most suitable surgical technique; many operations cover patients with various characteristics. Some general considerations are helpful in selecting patients for surgery and choosing the most suitable surgical procedure. Finally, the daily surgical practice results a limited number of

popular surgical operations abdominal or perineal, covering a large spectrum of patients. To date the surgical therapy of the rectal, prolapse disease remains individualized according to patients characteristics.

Aims

To review and update the literature on the spectrum of rectal prolapse disease with the view of documenting considerations that would guide the surgical management of the spectrum of rectal prolapse.

Methods

Internet data bases were searched including: Google, Goggle Scholar, and PUBMED. The search words that were used included: rectal prolapse and prolapse of rectum. Ten (10) references were identified which were used to write the review based upon the opinion we had made following reviewing the literature.

Results

External and internal rectal prolapse are uncommon conditions that may require treatment. Recent surgery trends show an increased number of operations for rectal prolapse disease [1]. The most common situation is external rectal prolapse, with an incidence of 2.5/100.000 population [2], while internal rectal prolapse has an unknown incidence in the literature, general population, and Surgical Departments.

Both conditions, external and internal rectal prolapse, are considered pelvic floor disorders, and numerous anatomical or functional pelvic floor disorders should be in the surgeon's mind as the surgical treatment does not ensure optimal outcomes in all cases. On the other hand, as the mean age of the general population increases over time, and these conditions are chronic disorders, it seems that older patients require complete surgical restoration in advanced ages [3] by complex surgical pelvic operations. Despite these complex operations being feasible today with no guidelines in the literature, the decision-making for surgery is complicated based on the opinion of a Multidisciplinary Team of Pelvic Floor Disorders specialists with implications of Colorectal and Uro-gynecology surgeons.

Clinical symptoms are various and many times are complex, with difficulties in defining the actual origin of the main symptom; it may be due to anatomical reasons of the subsequent disease (external or internal rectal prolapse) or due to functional pelvic disorders; this answer easily may be defined by complex investigations and link the symptom with an expectation of surgery as we may have the optimal outcomes, improvement or failure of surgery. The most common symptoms in external and internal rectal prolapse are evacuatory disorders (mainly the obstructed defecation syndrome) and fecal incontinence in more than 50% of patients. Obstructed defecation syndrome is the most common and complex type of constipation with many characteristics. As no obstruction often exists, the term tends to be abandoned and replaced by «functional bowel constipation» in the new Rome IV criteria [4] for functional gastrointestinal disorders.

Indeed, many other conditions or symptoms may coexist, and the physical examination of the perineum's posterior, middle, and anterior compartments is mandatory. In combination with pelvic floor investigation studies may be found; rectocele, enterocele, diastasis of puborectalis muscles, redundant recto-sigmoid colon, laxity of the lateral ligaments or rectum, lack of fixation of the rectum to the sacrum, pelvic dys-synergy, patulous anus, solitary rectal ulcer, vaginal vault prolapse, uterine prolapse, cystocele, neurologic pelvic floor disorders, descending perineum, and these associated conditions may have implications in further surgical management. In contrast, some states, such as severe incontinence, severe anal sphincter damages, and descending perineum, maybe more refractory and are disappointing conditions for optimal postoperative outcomes.

Finally, according to the characteristics of patients, age and sex result in a considerable heterogeneity of groups in patients with significance to choose the appropriate surgical

technique; the most common group is the old females at 70-74yrs old (F/M, 9:1) with external rectal prolapse, in middle age there are few cases with external rectal prolapse, and may coexist redundant colon and psychiatric diseases. In children over 3 yrs old, the external rectal prolapse should be corrected by surgery. Other groups are the following: females with pelvic organ prolapse; this condition increases by age, and the incidence varies from 25% in a younger generation to 50% at the age of 80yrs, patients with redundant colon, patients with comorbidities candidates for perineal and not abdominal surgery, patients with constipation and slow colonic transit, patients with severe incontinence, patients with loose of the recto-anal inhibitory reflex, and many other groups according to associated conditions previously described.

External rectal prolapse is an evident surgical disease, and surgery is the only treatment option to correct this disorder. Internal rectal prolapse is an entirely different disease, more complex in diagnosis. The primary treatment is conservative, with excellent functional outcomes in 70-80% of patients if the conservative treatment is offered by a Multidisciplinary Team for pelvic floor disorders [5], with the primary conservative measure; the pelvic floor biofeedback with many indications [6], medical agents, psychiatric support as 2/3 of patients with internal rectal prolapse present psychiatric disorders(also common in patients with external rectal prolapse), and numerous other conservative measures, but it seems that patients with long-standing symptoms present less effective postoperative outcomes. Surgery is addressed in advanced grades III and IV of internal rectal prolapse, according to Oxford's radiologic classification of rectal prolapse in proctography.

In external rectal prolapse, not all patients benefit from an extensive preoperative work-up, and according to the patient's characteristics, the most valuable investigation studies may be; endoscopy, anorectal manometry, trans-rectal ultrasounds, pudendal terminal nerve latency tests, conventional fluoroscopic defecography, pelvic MRI with Dynamic pelvic floor defecography, or pelvic floor CT when there is a contraindication for MRI.

In internal rectal prolapse, except for the diagnosis and correct classification of grading, the most challenging step is to clarify the actual origin of presenting symptoms and the participation of an anatomical or functional factor, proper investigations are; conventional defecography, pelvic floor MRI and MRI proctography, endorectal ultrasounds, anorectal manometry and electromyography of the pelvic floor muscles. The surgical correction (anatomical) of the internal rectal prolapse does not correct severe functional disorders.

In surgery of rectal prolapse disease, there are more than 100 operations in literature, some common in use and others less popular. Due to the considerable heterogeneity in patients studied, the optimal surgical procedure still needs to be identified. Cochrane Database systematic reviews [7, 8] cannot find the gold standard surgical procedure. To date, surgery for rectal prolapse remains individualized according to the patient's characteristics.

Some generalizations help choose the most suitable surgical technique.

The most common in-use operation is the laparoscopic ventral mesh rectopexy (D'Hoore) [9], a process suitable in many patients with external or internal rectal prolapse with obstructed defecation syndrome or incontinence; the procedure is in use for the correction of the middle perineal compartment prolapsed organs (sacro-colopectopexy). The mesh-related complications are considered as they are often severe, present complex management, and necessitate new interventions or a diverting stoma; surgery for pelvic mesh complications is a unique and challenging field of surgery. It seems mesh complications are less when only rectal prolapse is corrected than in complex urogynecological operations with mesh to repair the pelvic floor. Titanium-coated and biological meshes have less risk for complications than polypropylene meshes, without any guidelines for using the suitable mesh. In short and long-term outcomes, recurrences are reported at 0-5% and complication rates at 15%.

Alternative rectal fixation techniques include the laparoscopic posterior mesh rectopexy and procedures of rectopexy with sutures.

Procedures of suspension and fixation of the rectum on the sacrum may be performed robotically with similar results. Still, some other advantages of robotic surgery may define the procedure as the preferable technique in the future.

A second type of abdominal operation is the resection-rectopexy operation (Frykman - Goldberg) [10] in patients with external rectal prolapse. Rectopexy using meshes is avoided, but there are many new modifications of the procedure, and resection may be combined with mesh rectopexy. The method removes the sigmoid colon, and anastomosis is performed at the promontory level. The technique has the risk of anastomotic leaking, which ranges in various reports from 0-5% with a mean acceptable risk of 2%, and this risk should be accepted in the written consent of the patient. Many patients benefit from this operation, such as those with severe constipation and redundant recto-sigmoid colon, with recurrences rates of less than 5%.

Some considerations are helpful in the following conditions: in patients with severe incontinence, surgery may not improve the incontinence significantly as 15-20% present pudendal neuropathy, and a further treatment option may be postoperative biofeedback. Patients with pelvic dys-synergy may benefit from conservative treatment. If this symptom is refractory, a new operation with the partial division of puborectalis muscles is promising and under evaluation in the future. Indeed, surgery may not be so effective in patients with slow transit constipation.

In another group of patients with severe comorbidities, advanced age, and severe cardio-respiratory problems, perineal operations for rectal prolapse disease may be performed without general anesthesia. Delorme's operation (mucosal sleeve resection procedure) and Altemeier's (trans-section technique with colo-anal anastomosis) are the most common operations. The length of the prolapsed

rectal segment plays a significant role in choosing Delorme's procedure (< 5cm) or Altemeier's procedure (>5cm).

Internal rectal prolapse is a rare surgery condition than external rectal prolapse; many times, this condition remains asymptomatic. Studies in the natural history of this condition show a slight possibility of proceeding as external prolapse disease that ranges from 3.8-6.7%. Defecography is the gold standard diagnostic procedure, but the maximum benefit for assessing symptoms results from combined investigation procedures such as endorectal ultrasound and manometry, pelvic MRI and MRI defecography, and pelvic floor electromyography.

In patients with internal rectal prolapse, the treatment is mainly conservative for 80% of patients, and a minority is a candidate for surgery without any guidelines for the most suitable surgical technique and timing of surgery. Still, the effectiveness of surgery is high in literature ranging from 60-100% for various parameters studied; surgery corrects the incontinence in 80-90% of patients and obstructed defecation (a complex and multifactorial origin symptom) in 60-80% of patients. In conservative treatment, Standardized Scores of the severity of symptoms (constipation or fecal incontinence) are used, and the findings registered are comparable with those after the conservative treatment. The best results in conservative treatment are obtained when a multidisciplinary team of specialists in pelvic floor disorders provides the correct diagnosis and the respective conservative treatment. We emphasize that some associated conditions are disappointed in conservative treatment, such as those with severe fecal incontinence, slow transit severe constipation, descending perineum, pelvic denervation, anal sphincter with high grades damages in endorectal ultrasounds and patients with loose of the recto-anal inhibitory reflex. Indeed, such conditions are adverse prognostic factors for outcomes of surgery; surgery of internal rectal prolapse has effectiveness at the level of the conservative treatment at 70-80% or any more with eventual failure in severe functional pelvic disorders.

The laparoscopic ventral mesh rectopexy is the most common surgical operation in internal rectal prolapse. Perineal procedures dominate Delorme's policy or a modified technique, the anterior Delorme's operation, as the disease often affects the anterior rectal wall. Stapled techniques (STARR procedure) do not seem to be the first-choice operation; the procedure is new, no more than 20 years in use, but in a short time, received severe criticism due to high postoperative complications, high recurrences of constipation, low long-term effectiveness and postoperative symptoms related to the surgical procedure such as anal pain and urgent defecation in high percentages. The technique is contraindicated in enterocele, pelvic dyssynergy, and decreased anal function, as it may worsen the preoperative symptoms. The procedure may suit elderly patients with comorbidities in well-selected cases.

Conclusion

The spectrum and the heterogeneity of patients with external and internal rectal prolapse are large. The decision-making for surgery in external rectal-prolapse is easy as it is the only treatment option. Symptomatic patients with high grades (III and IV) internal rectal prolapse respond

positively in conservative therapy at 80%, and a minority of 20% of well-selected patients are candidates for surgery, with effectiveness in more than 80% of operated patients. The significant heterogeneity in patients with external and internal rectal prolapse justifies the numerous surgical procedures available. Still, the most common in use are the laparoscopic ventral mesh rectopexy, perineal procedures such as the Delorme's and Altemeire's, and abdominal resection procedures after the selection of patients covering the majority of patients.

Conflict of interest: None

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