



Laparoscopic Ventral Sacro-Rectopexy in a Transgender Woman

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Abstract

Rectal prolapse is a debilitating condition that often results in impaired quality of life. Posterior compartment defects including rectal prolapse and rectal intussusception are often associated with middle and anterior compartment prolapse and require a multicompartiment approach to treatment. The surgical management of patients with full-thickness rectal prolapse continues to remain a challenge in the laparoscopic era. Recently, ventral rectopexy, has emerged as a safe and effective method of treatment for rectal prolapse. In this article, we aim to review the etiology of rectal prolapse and intussusception, describe the indications and workup for surgery, discuss technical aspects of ventral rectopexy, describing a case report attended in our hospital.

Keywords: Rectal prolapse; Ventral rectopexy; Crohn's disease

Introduction

Full-thickness rectal prolapse has been shown to be initiated by a process of recto-rectal intussusception and is accompanied by a collection of intraoperative findings which include a lack of adherence of the rectum to the sacrum, diastasis of the levator musculature, a deep pouch of Douglas and an elongated mesorectum [1].

Rectal prolapse affects women more commonly than men, and often involves more than one compartment of the pelvis [2]. The prevalence of concomitant pelvic floor disorders is as high as 30% in patients with rectal prolapse and dynamic imaging studies often show coexistent pelvic floor abnormalities in the anterior and middle compartments of the pelvis [3]. Historically, there has been debate as to the etiology of rectal prolapse. In those who present with anal incontinence supervening on full-thickness rectal prolapse, there is a multifactorial etiology which includes distraction and damage to the anal sphincters, alteration of rectoanal inhibition, the mass effect of the prolapse with attendant prolapse waves, disturbances in propulsive rectoanal coordination, and associated pudendal neuropathy from excessive straining [4].

Altemeier's classification anatomically divides rectal prolapse into three types: Type 1: Mucosal prolapse or false prolapse, type 2: Rectal intussusception with hernia of the pouch of Douglas, and type 3: Hernia of the pouch of Douglas without intussusception [5].

The predominant symptomatology is vague perineal discomfort, rectal tenesmus and complete inability to defecate, often leading to digestion. In patients with suspected non-visible rectal prolapse, the use of videofecography or dynamic magnetic resonance imaging is advised in order to detect intussusception or internal rectal prolapse. Although dietary recommendations and pelvic floor rehabilitation are the basis of initial treatment, definitive treatment is often surgical. The choice of technique varies mainly according to the type of prolapse, comorbidity and the presence of incontinence.

Surgical repair of rectal prolapse can be performed *via* a perineal or abdominal approach. Thus far, there has not been convincing evidence to show superiority of one approach over another in terms of recurrence, functional improvement, or quality of life. Choice of repair depends on a thorough preoperative evaluation, taking into consideration overall health and presence of concurrent pelvic floor disorders [6].

Recently, Laparoscopic Ventral Rectopexy (LVR) has gained a significant following among colorectal surgeons managing functional anorectal disorders. The minimally invasive nature of laparoscopic surgery reduces perioperative morbidity and length of hospital stay. Anterior mobilization of the rectum down to the pelvic floor can readily be performed using the laparoscopic

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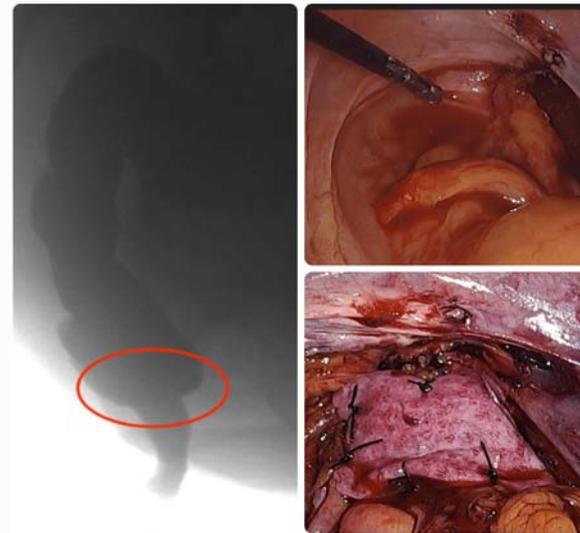


Figure 1: The left image shows the rectal invagination seen in the videodefecography. The upper right image shows the large fornix of Douglas. The lower right image shows the LVR technique.

approach. Arguably, LVR provides superior visualization over conventional laparotomy, especially in the deep pelvis. This anterior mobilization also avoids potential autonomic nerve injury associated with posterior rectal mobilization and reduces the risk of postoperative constipation. The use of a mesh in the pelvis to anchor the rectovaginal/rectovesical septum to the sacral promontory provides a form of middle and posterior compartment pelvic floor suspension not available with other techniques of rectopexy.

Ventral rectopexy was first described over 20 years ago as the Orr-Loygue procedure and was further modified by D'Hoore et al. [7] to be performed laparoscopically with dissection anteriorly into the rectovaginal septum with limited posterior dissection to preserve rectal innervation. A single mesh is then anchored to the sacral promontory and placed on the distal rectum. Since the description by D'Hoore et al., ventral rectopexy has been performed both laparoscopically and robotically and has been combined with sacrocolpopexy in patients with coexisting middle compartment prolapse. LVR has been used in the treatment of rectal prolapse, rectal intussusception, and large symptomatic anterior rectoceles.

Case Presentation

A 57-year-old woman, with a history of Crohn's disease controlled with medical treatment and having undergone gender reassignment surgery (penile inversion vaginoplasty) in 2000, consulted for obstructive defecation and rectal tenesmus of one year's duration, requiring fingering for complete evacuation. During the study, a dynamic magnetic resonance imaging scan and a videodefecography were requested, where a rectal invagination was evidenced as the cause of the obstructive defecation reported by the patient. Due to the findings described, the patient underwent elective surgery, which revealed an intramural rectal intussusception, conditioned by a large pouch of Douglas; a laparoscopic ventral rectopexy (D'Hoore technique) was performed (Figure 1).

Given the anatomical characteristics described, in our patient, the technique consisted of exploring the abdominal cavity, revealing a large fornix of Douglas and great rectal mobility. Subsequently, the medial aspect of the mesorectum was dissected in the direction of the pelvic floor, identifying the sacral promontory and both hypogastric

nerves, and the space between the anterior aspect of the rectum and the patient's neovagina was dissected. Finally, a biological mesh was fixed to the sacral promontory by means of staples (tackers, spiral and titanium), and to the anterior face of the rectum by means of seromuscular loose stitches.

Conclusion

In rectal prolapse, surgical treatment should be based on correcting the biomechanics of the pelvic floor, with the aim of correcting prolapse and defecatory dysfunction, avoiding functional sequela. There are different procedures [8], both perineal and abdominal, the latter being more commonly used at present due to the low number of complications and the significant percentage of improvement in relation to fecal incontinence, obstructive defecation and pelvic pain.

Laparoscopic ventral sacro-rectopexy is currently the technique of choice, combining good functional results, low complication rates (<16%) and low morbidity and mortality [9]. We have treated a unique case, where the anatomical characteristics conditioned a modified surgical approach, with safe reproducible technique and good functional results.

Additional prospective studies are needed to determine which patients are best suited for this surgical approach.

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