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Research Article

# Laparoscopic Ventral Mesh Rectopexy in the management of Complete Rectal Prolapse. Experience from a lower middle income Country

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## Abstract

**Objective:** To analyze short term outcomes of laparoscopic ventral mesh rectopexy in the management of complete rectal prolapse (CRP).

**Method and Material:** From July 2017 to Dec 2019 all patients admitted with a diagnosis of rectal prolapse were included in the study. Patients underwent D hoore technique of laparoscopic ventral mesh rectopexy. Prolene mesh was used in all cases. Patients were followed for improvement in bowel function, post operative complications and early recurrences.

**Results:** 12 patients were admitted with a diagnosis of rectal prolapse. Two underwent perineal resections and were not included in the study. 10 patients were included in the study. Median age was 38.6 years (16-50). Male: Female ratio was 1:1. Median operative time was 130min (90-150) Median postoperative stay was 3 days (2-5). All 10 patients had full thickness rectal prolapse and 2 patients had associated vaginal vault prolapse. 8 patients had associated constipation; 1 had incontinence and 1 had per rectal bleed. All patients were discharged on laxatives for three weeks.

Patients were followed for a median 18 months (12-26 months). There were no recurrences. There were 2 port site infection. No patients develop sexual dysfunction, incontinence or dyspareunia.

**Conclusion:** LMVR can be performed safely by experienced surgeons and Nerve sparing technique result in less complications and better results in terms of recurrence and improvement of bowel dysfunction.

**Keywords:** Rectal prolapse; Laparosopic ventral rectopexy; D hoore; Lower middle income; Pakistan

## 1. Introduction

Rectal prolapse is the circumferential protrusion of the rectal wall through the anal canal [1]. Full-thickness rectal prolapse (FTRP) refers to prolapse of all layers of the bowel wall; partial prolapse involves only the mucosa [2]. Affected individuals with rectal prolapse may report discomfort or pain from prolapsing tissue, drainage of mucus or blood, and associated fecal incontinence or difficult evacuation. Women aged 50 and older are 6 times more likely as men to present with rectal prolapse [3]. Two thirds of women are multiparous and 15 to 30% are reported to have associated urinary dysfunction and vaginal prolapse. Numerous surgical procedures, both perineal and abdominal, are currently practiced for the treatment of complete rectal prolapse. The abdominal operations carry a lower recurrence rate and improved functional outcome and are therefore preferred over the perineal operations. The latter are reserved for those who are unfit to undergo an abdominal (e.g. a laparoscopic) procedure [4]. Laparoscopic ventral rectopexy (LVR) is an autonomic nerve-sparing technique of anterior rectal suspension involving minimal rectal mobilization. LVR is currently adopted by many pelvic floor surgeons because of the good functional results and the wide range of indications for its use, such as enteroceles and rectoceles. The unique feature of this technique is that it avoids any postero-lateral dissection of the rectum in order to avoid de novo constipation and sexual dysfunction. The mesh is sutured to the anterior aspect of the rectum to inhibit intussusception. LVR has been emerging as the procedure of choice for the management of patients presenting with rectal prolapse, particularly in Europe. Fu and Stevenson reported that a sufficiently wide mesh and suture in the midrectum should be added because a narrow mesh and inadequate apposition between the mesh and the rectum can contribute to technical failure of the LVR [5,6]. However, use of a wide mesh in the rectovaginal septum could increase the potential risk of complications. Use of a synthetic mesh can cause erosion, rectal strictures, rectovaginal fistulae, and chronic pelvic pain. Biologic grafts have been used to avoid these complications; however, their use is associated with higher recurrence rates. A study conducted in King George's Medical University in India in which LVR done to fifty patients of full thickness rectal prolapse states that laparoscopic ventral mesh rectopexy is an effective surgical option for CRP in North Indian patients having a bulky redundant colon [7]. Naeem et al. conducted a study Short term outcome of laparoscopic ventral rectopexy for rectal prolapse on 31 patients in Karachi and found it to be a safe and effective procedure. In this study we share our experience of LVR for full thickness rectal prolapse.

## 2. Method and Material

The case series of 10 patients was conducted at SU-1 Lahore General Hospital, a tertiary care hospital between July 2016 to June 2018. All patients with

rectal prolapse admitted through outdoor having symptoms of something coming out of anus, constipation, incontinence and per rectal bleeding. They were subject to clinical examination and sigmoidoscopy in selected cases. Informed consent was taken from all the patients before surgery, explaining them the benefits and procedure related complications in detail. The surgery was performed under general anesthesia with patient in steep Trendelenburg position. The surgical technique was adopted from the original description by D'Hoore et al. Modified Lloyd Davis position was used. Usually 4 ports were created. A 11mm Supra umbilical port was used as camera port and 5mm 3-ports one on left lower quadrant midaxillary line which is assistant port and two surgeon ports one right lower quadrant midaxillary line and one in right lumber region. In females uterus is hitched to anterior abdominal wall using proline straight needle. The rectosigmoid junction was identified and retracted to the left to expose peritonium.

A "J shaped" peritoneal incision was given extending from the sacral promontory to the anterior peritoneal reflection distally. Right hypogastric nerve and ureter were identified and safeguarded. With combined blunt and sharp dissection, a wide plane was developed in the Rectovaginal/rectovesical space. D hoore technique of LVMR was used. Proline mesh measuring 7-15cm was used in all cases which introduced through 11mm port site. PDS 2/0 suture were used to fix mesh to the pelvic floor muscles laterally and to the rectal wall anteriorly and with sacral promontory posteriorly. Peritoneum was closed over the mesh. Improvement in bowel dysfunction and peri/post-operative complications documented prospectively.

## 3. Results

12 patients were admitted with a diagnosis of rectal prolapse. 2 underwent perineal resections and were not included in the study. 10 patients were included in the study. Median age was 38.6 years (16- 50). Male: Female ratio was 1:1. All 10 patients had full thickness rectal prolapse and 2 patients had associated vaginal vault prolapse. 8 patients had associated constipation; 1 had incontinence and 1 had per rectal bleed. All patients underwent ventral rectopexy with a prolene mesh. Median operative time was 130min (95-150). Median postoperative stay was 3 days (2-5). All patients were discharged on laxatives for three weeks. Patients were followed for a median 18 months (12-26 months). There were no recurrences. There were 2 port site infection. No patients develop sexual dysfunction, incontinence or dyspareunia.

## 4. Discussion

The correction of anatomical defect, improvement of bowel function and prevention of de novo functional problems are the goal of rectal prolapse surgery. Multiple abdominal and perineal procedures have been described for management of rectal prolapse, perineal procedures now reserved only for high risk patients who cannot withstand major abdominal surgery [8]. However, long term recurrences and the rate of persistent incontinence are higher in perineal procedures than abdominal procedures. Abdominal approach is now considered the standard of care and is used whenever feasible because of the better exposure of viscera's. D Hoore in 2004 popularized a novel approach of laparoscopic autonomic nerve sparing rectopexy for complete rectal prolapse. Currently, this technique has gained widespread acceptance and has been proposed by many the "standard of care" for management of pelvic organ prolapse [9,10]. We have

succesfull done ventral mesh rectopexyin our patients with minimum morbidity and no recurrence in 2 years of followup [11]. The main objective of the treatment is to correct the anatomical defect, alleviate bowel dysfunction and avoidance of functional abnormalities of incontinence constipation, and pain, with an acceptable rate of recurrence and the lowest rate of complications. Abdominal rectopexy is preferred method in controlling rectal prolapse and Ventral mesh rectopexy has been found to be associated with lower incidence of new onset constipation and greater improvement in pre existing constipation as compared to the procedures that include posterior rectal dissection. Three randomized trials have shown an improvement in constipation by avoiding lateral and posterior dissection [12,13]. All our patients showed improvement in symptoms after the procedure. As with any other surgical procedure, LVMR has potential complications as well. These include functional and mesh-related complications. The mesh-related complications include erosion and intrarectal mesh migration leading to fistula formation. Development if hemorrhoids after mesh repair leads to recurrence, in our study we followed the patients for about 2 years having no recurrence. We only had 2 port site infections. No other major complications were seen in our patients. The results suggest that complications following LMVR are mostly minor. Median age in our study is slightly higher as compared to other studies. The reason for this is multifactorial. One is the social stigma with this problem with patients avoiding any consultation because of the nature of the disease. Other is the poor health system in our country where patients despite seeking medical help fail to reach a diagnosis. Third is the lack of trained surgeons who can adequately treat these patients. Our functional results are very similar to international studies. Pre-existing constipation improved in 100% of cases and no patient developed de novo constipation [6,7,10]. The major drawback of this study is that we have a short case series and follow-up is also for limited period. Prolong follow up is required to consolidate our results.

## 5. Conclusion

We suggest that LMVR can be performed safely by experienced surgeons and Nerve sparing technique result in less complications and better results in terms of recurrence and improvement of bowel dysfunction.

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