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Observation on Complete Rectal Prolapse in Respect of Posterior Mesh Rectopexy as a Treatment of Choice

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Abstract **Original Research Article**

Background: Complete rectal prolapsed i.e; procidentia is debilitating condition and is defined as the protrusion of the entire thickness of rectal wall through anal sphincter complex .In abdominal posterior mesh rectopexy a propylene mesh is interposed between the rectum and sacrum that provides a sling. This approach has been found a safe and well tolerated procedure with less recurrence rate and complication and improved bowel function i.e; incontinence and constipation. ***Aims and objectives:*** The aim of our study is to evaluate the functional outcomes after open abdominal posterior mesh rectopexy as a treatment of choice for complete rectal prolapse with reference to operative time, postoperative pain, and return of bowel function, hospital stay, complications and recurrence. ***Materials and methods:*** This study was done in patients with complete rectal prolapsed visited to surgery OPD who underwent open abdominal posterior mesh rectopexy from May 2017 to December 2018. ***Results:*** There were 16 patients (10 females and 6 males) with mean age of 62.72±18.18 (45-65) years. The mean operative time was 130±20 minutes. The mean hospital stay was 7±3.13 days. Recurrence was not reported. No patients needed blood transfusion .postoperatively one patient has constipation, and she needed occasional laxatives .About 90%n patients returned to OPD with significant overall improvements. ***Conclusion:*** Open abdominal posterior mesh rectopexy is a promising approach for dealing with complete rectal prolapsed. A careful patient selection, appropriate preoperative work up and a meticulous surgical technique undoubtly provides the excellent postoperative outcomes.
Keyword: Procidentia, Posterior sagittal route, Mesh rectopexy, anal encirclement band, PMR (posterior mesh rectopexy).

INTRODUCTION

Complete rectal prolapse i.e; procidentia is defined as the protrusion of the entire thickness of rectal wall through anal sphincter complete [1]. The prevalence rate of rectal prolapsed is more in elderly females (6:1) with peak period of onset between 45-65 years of age [2]. Fecal incontinence is very common associated features with 35% having urinary incontinence and 15% having vaginal vault prolapse also [3]. There are various surgical approaches for dealing complete rectal prolapsed aiming to control prolapsed and restore incontinence and constipation. There are two widely used perineal procedures such as Delorme's procedure and Altemeire's operation which are well acceptable for high risk patients[4].The trans abdominal procedures like Well's, Lahut's,Golighar's, Ripstein's open mesh rectopexy operation and laproscopic rectopexy where Ripstein operation is being widely used and acceptable and effective with good functional outcomes [5-7]. However, although abdominal posterior mesh rectopexy may be the most effective treatment for complete rectal prolapsed, complications such as postoperative pain, mesh erosion with fistula and recurrence can occur after the surgery [8]. These complications increase the patient's hospitalization stay, can delay the return to ordinary life and the workplace after surgery, and can increase the rate of revisits to the hospital. However, the main concern for patients remains the prolapse control and early improvement in bowel functions [9].

METHODS

This study was conducted on 16 patients (10 females and 6 males) possessing complete rectal prolapse attending surgical OPD in the Department of surgery, Patna Medical College and Hospital, patna Bihar, India over a period of one and half year between May 2017 and december 2018.The patients were admitted for elective surgery open posterior mesh rectopexy after taking detail history including age, sex,

occupation, present illness, past history and family history including bleeding per rectum.

Inclusion criteria

The patients with only complete rectal prolaopse and age more than 18 years were included in this study.

Exclusion criteria

- Patient with age below and equal to 18 years.of study
- Patient having contra-indication to general anaesthesia or laprotomy
- Patient with previous abdominal and pelvic surgery with associated neoplastic disease of colorectal region

A cohort study was conducted in these patients of rectal prolapsed and all the patients were assessed according to following consideration

1. Mean age
2. Severity(grade)

- Duration of surgery
- Mean hospital stay
- Postoperative pain(VAS Score) and analgesia
- Postoperative complications including bowel obstruction, stenosis, incontinence
- Postoperative follow up for one week, one month, three month and six month for complete recovery.

All patients underwent physical examination, DRE, Proctoscopy and preoperative routine lab tests, chest X-rays, electrocardiography, and urinalysis and evacuation study under CCF-FLS and were admitted to the hospital the day before surgery. All patients took a glycerin enema the night before surgery, and prophylactic antibiotics were injected before entrance to the surgical room and catheterized on table. All patients had spinal anesthesia and were placed in modified Lloyd Devis position. The rectum is mobilised posteriorly upto the pelvic floor in avascular holy plane preserving hypogastric nerves and ureters. Lateral ligaments are preserved in all patients. A propylene mesh is interposed between rectum and sacrum in presacral space and mesh fixed to periosteum of sacral promontory with prolene 2/0 suture.The mesh is then encircled to the 3/4th of the circumference of the rectum and fixed with seromuscular layer of rectum with prolene 2/0.Peritoneum is closed with a running suture of 2/0 polydioxanone suture covering the mesh completely.

Table-1: Indication of Posterior mesh rectopexy

Indication for rectopexy	Number of patients
Complete rectal prolapsed only	10(6 males and 4 females)
Rectal prolapsed and vaginal vault prolapse	5
Rectal prolapsed,cystocele and vaginal vault prolapse	1

Table-2: Cleveland Clinic Florida Fecal Incontinence Score (CCF-FLS)

Type of incontinence	Rarely	Sometimes	Usually	Always
Frequency	(<1/month)	(>1/month to <1/week)	<1/day to >1 week)	(>1 day)
Solid	1	2	3	4
Liquid	1	2	3	4
Gas	1	2	3	4
Wears pads	1	2	3	4
Life style alteration	1	2	3	4

RESULTS

In our study of 16 patients (10 females and 6 males) who underwent open trans abdominal posterior mesh rectopexy from May 2017 to December 2018, the mean age of the study group was 62.72±18.18 (45-65) years. The mean operative time was 130±20 minutes. The mean hospital stay was 7±3.13 days. In our study group none of the patients had immediate postoperative post spinal headache. Recurrence was not reported. No patients needed blood transfusion postoperatively one patient has constipation, and she needed occasional laxatives. About 90%n patients returned to OPD with significant overall improvements. The mean follow-up in this series was 2.83 ± 1.18 (1–5) years.

Table-3: Wexner Fecal incontinence score (0-20)

	Preoperative values	Preoperative values	Postoperative values	Postoperative values	Difference
Wexner	Mean	SD	Mean	SD	P values
1	1.23	1.19	0.69	1.02	0.001
2	1.44	1.43	0.87	1.12	0.001
3	1.56	1.38	0.56	0.98	0.001
4	2.03	1.89	1.67	1.46	0.002
5	2.09	1.59	1.38	1.67	0.013
Total	6.55	7.48	5.17	6.25	0.001

SD-Standard deviation

Note:Q.1: How often did you lose control of a solid bowel movement ? Q.2: How often did you lose control of a liquid bowel movement?; Q.3 : How often did you lose control of flatus (gas) ;Q.4: How often did you wear a pad because of loss of bowel control? ;Q.5: How often was your life or daily routine affected by loss of bowel control?

Table-4: Obstructive defecation syndrome (ODS) score (0–40)

ODS	Pre-operative values	Pre-operative values	Postoperative values	Postoperative values	Difference
	mean	SD	mean	SD	P value
1	0.51	1.01	0.43	0.88	0.213
2	1.78	1.09	1.32	0.69	0.011
3	1.01	1.14	0.88	0.90	0.012
4	1.64	1.08	1.17	0.89	0.001
5	1.98	1.01	1.27	0.63	0.001
6	1.91	0.88	1.13	0.57	0.001
7	1.48	1.39	1.29	0.94	0.003
8	1.87	1.18	1.32	0.87	0.001
Total	12.18	8.78	8.81	6.37	0.001

ODS: obstructive defecation syndrome SD: standard deviation.

Note: Q.1: How often did you use an enema or suppository to open your bowels?; Q.2: How often did you have difficulty evacuating (i.e; passing stools that are in your back passage)? Q.3: How often did you need to put a finger in the rectum (back passage) or the vagina to open your bowels? Q.4: How often did you need to return to the toilet after having a bowel movement? Q.5: How often did you feel that you have not emptied your bowels completely after having a bowel movement? Q.6: How often did you have to strain or push to have a bowel movement? Q.7: How much time did you need to spend on the toilet to have a complete bowel movement? Q.8: How often did you change your lifestyle or habits because of difficulties with your bowel movements?

Table-5: Birmingham Bowel and Urinary Symptom score for bowel frequency

Bowel frequency	Preoperative value	Preoperative value	Postoperative value	Postoperative value	Difference
	mean	SD	mean	SD	P value
1	2.98	1.32	2.67	1.17	0.179
2	3.09	0.93	3.29	0.86	0.258
3	2.48	1.36	2.14	1.12	0.044
4	2.67	1.19	2.17	1.03	0.032

Abbreviation: SD, standard deviation.

Note: Q.1: How often did you open your bowels?; Q.2: Were your motions usual? ; Q.3: Could you hold onto your motions for more than 5 minutes?; Q.4: Did you ever have to rush for the toilet to open your bowels.

Table 1 shows anatomical indications of posterior mesh rectopexy(PMR).62.5% Patients have full thickness rectal prolapse ,31.25% with rectal prolapse along with vaginal vault prolapsed and 6.25% has rectal prolapsed along with cystocele and vault prolapsed. Table 2 & 3 show fecal incontinence score. Wexner fecal incontinence (WFI) score analysis after surgery shows statistically significant improvement in pre- operative overall symptoms with p value 0.001. Although there was a statistical difference between pre-

and postoperative values, some patients showed dissatisfaction with the control of flatus (p ¼ 0.014). It was, however, anticipated that this group of patients would benefit from pelvic floor exercises and would be able to regain the control of flatus in due course. Table 4 shows that there is significant improvement in constipation and life style.

Some components of the ODS score did not improve to patient's expectations, and moreover, some of the components even got worse postoperatively. The use of enemata and suppositories to move the bowels got worse to some extent after the surgery (p ¼ 0.233). The probable explanation is the restoration of the anatomy with a synthetic mesh and an acute angle causing a relative decrease in propelling force to evacuate the bowels. There was one patient who had full thickness recurrence of rectal prolapsed during the follow-up period. A Delorme's procedure was offered to one of the patient with recurrence and having persistence of symptoms and prolapse but her symptoms resolved with conservative measures. A relatively young patient aged 46 had persistence of symptoms and was found to have mucosal prolapse 2 years after the first surgery. She required examination under anesthesia and excision of benign rectal polyps and there was no evidence of recurrence. Table 5 BBUS (Birmingham Bowel and Urinary Symptom score) for bowel frequency was used to assess a spectrum of quality of life indicators including bowel frequency, stool consistency, effective bowel emptying and urinary symptoms. There was a significant overall improvement in the postoperative score as compared with the preoperative values. Some categories in this questionnaire did not show a significant improvement after the surgery. These elements did raise concerns and caused some dissatisfaction among the patients.

Discussion

The main aim of open posterior mesh rectopexy, PMR is to provide the anatomical strength but also to reestablish the base line function of the organ. It is evident that restoration of the anatomy may not be achieved with perineal procedures because of inadequate exposure of the pelvic part of the rectum [10]. However, perineal procedures still remain a suitable option for a vast majority of elderly patients with multiple comorbidities. Abdominal procedures on the other hand have an advantage of sufficient exposure not only of the rectum but other pelvic organs as well [11]. Interference with the nerves, a loss of rectal compliance, and slow transit constipation is a probable explanation of poor functional outcome especially posterior rectopexies which could be minimized by meticulous dissection in a holy avascular plane [12]. Thus posterior mesh rectopexy has been accepted as a preferred approach because of its low recurrence rate and better functional outcomes. In the current literature, if expertise are available Laproscopic posterior mesh rectopexy is considered a gold standard treatment for elective repair of rectal prolapse [13,14]. Posterior rectopexy has the minimal morbidity and quick recovery after the surgery. As with any and mesh related complications. The mesh-related complications include erosion and intrarectal mesh migration leading to fistula formation. Development of high-grade hemorrhoids has also been recognized as a complication of PMR and it may act as a precursor of recurrence of rectal prolapsed. No mesh related complications were seen after a follow-up of 4 years in this series. It is emphasized that it is the right surgical technique which prevents things going wrong in most of the cases. As mentioned earlier, with the restoration of rectal anatomy, functional outcomes such as ODS, incontinence, and bladder dysfunction improves as well. The functional outcomes in this study were assessed by means of questionnaires asking patients to rate the WFI score, ODS score, and BBUS score before and after the surgery [15]. Although the response rate was relatively low, yet the results showed a significant improvement in the quality of life parameters in most of the cases. A single measurement of the function after surgery may not be a true reflection of the postoperative change and is therefore one of the limitations of this study. A relatively lower response rate to fill the questionnaires by the patients, lack of regular postoperative clinical assessments and the absence of a questionnaire about the sexual function are the limitations which could have changed the overall findings of this study.

Conclusion

Open PMR is favored for repair of rectal prolapse and pelvic floor dysfunction because of excellent functional bowel recovery, low recurrence rate and low incidence of postoperative mesh related complications. The recurrence rate in this series was the same as reported in the literature. Most of the recurrences in this study were seen in the cases re-operated for recurrent prolapse. A careful selection of patients, vigorous preoperative workup, and a meticulous surgical technique are recommended for the management of this debilitating condition.

References

1. Broden B, Snellman B. Procidentia of rectum studies with cineradiography. Dis Colon Rectum. 1968;11:330-347.
2. Wassef R, Rothenberg DA, Goldberg SM. Rectal prolapsed. Curr Probl Surg.1986;23:397-451.
3. Penninckx F, D'Hoore A, Sohier S, Kerremans R. Abdominal resection rectopexy versus Delorme's procedure for rectal prolapse: a predictable outcome. Int J Colorectal Dis 1997;12(01):49–50.
4. Maglinte DD, Kelvin FM, Fitzgerald K, Hale DS, Benson JT. Association of compartment defects in pelvic floor dysfunction. AJR Am J Roentgenol 1999;172(02):439–44
5. Wexner, edited by Andrew P. Zbar and Steven D. Coloproctology. New York: Springer. 2010;143.

6. Watson DI, Thompson SK, Devitt PG, Smith L, Woods SD, Aly A, Gan S, Game PA, Jamieson GG. Laparoscopic repair of very large hiatus hernia with sutures versus absorbable mesh versus nonabsorbable mesh: a randomized controlled trial. Annals of surgery. 2015 Feb 1;261(2):282-9.
7. Mäkelä-Kaikkonen JK, Rautio TT, Koivurova S, Pääkkö E, Ohtonen P, Biancari F, Mäkelä JT. Anatomical and functional changes to the pelvic floor after robotic versus laparoscopic ventral rectopexy: a randomised study. International urogynecology journal. 2016;27(12):1837-45.
8. Wong MT, Abet E, Rigaud J, Frampas E, Lehur PA, Meurette G. Minimally invasive ventral mesh rectopexy for complex rectocoele: impact on anorectal and sexual function. Colorectal Disease. 2011 Oct 1;13(10):e320-6.
9. Madoff RD, Mellgren A. One hundred years of rectal prolapsed surgery. Dis Colon Rectum. 1999; 42(04):441–450.
10. Williams JG, Rothenberger DA, Madoff RD, Goldberg SM. Treatment of rectal prolapse in the elderly by perineal rectosigmoidectomy. Dis Colon Rectum. 1992;35(09):830–834.
11. Marchal F, Bresler L, Ayav A, Zarnegar R, Brunaud L, Duchamp C, Boissel P. Long-term results of Delorme's procedure and Orr–Loygue rectopexy to treat complete rectal prolapse. Diseases of the colon & rectum. 2005 Sep 1;48(9):1785-90.
12. Smart NJ, Pathak S, Boorman P, Daniels IR. Synthetic or biological mesh use in laparoscopic ventral mesh rectopexy–a systematic review. Colorectal Disease. 2013 Jun;15(6):650-4.
13. D'Hoore A, Cadoni R, Penninckx F. Long-term outcome of laparoscopic ventral rectopexy for total rectal prolapse. Br J Surg. 2004; 91(11):1500–1505.
14. Randall J, Smyth E, McCarthy K, Dixon AR. Outcome of laparoscopic ventral mesh rectopexy for external rectal prolapse. Colorectal Dis. 2014;16(11):914–919.
15. Tadataka Yamada: associate editors, David H. Alpers Textbook of gastroenterology (5th Ed), Chichester West Sussex: Blckwell Pub. 2009; 1725.