

Original Research Article

Assessment of incidence of recurrence and constipation in patients of rectal prolapse undergoing rectal mobilization only with division of lateral stalks

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ABSTRACT

Background: Rectal prolapse is a pelvic floor disorder that can occur in men and women of all ages. It results in pain, bleeding per rectum, seepage, diarrhoea or constipation and a disabled quality of life. With the advent of twentieth century, perineal operative procedures have become more common. Perineal procedures though have lower morbidities but have higher recurrence rate and high incidence of post-operative constipation. Novel abdominal approaches to rectal prolapse repair also became common during the first half of this century. Numerous types of surgical procedures have been attempted. Most techniques developed till now have some advantages and some short comings. CT Speakman and Pollen et al have shown in their studies that division of lateral ligaments caused new onset constipation and they attributed this effect to denervation of rectum. As the issue of recurrence and post-operative constipation remained unsettled.

Methods: This was an observational study to assess the incidence of recurrence and post-operative constipation in patients of rectal prolapse. In well selected patients, we performed complete rectal mobilization with division of lateral ligaments. We assessed the patients on the basis of Cleveland clinical constipation scoring system.

Results: Out of 25 patients, 4 patients developed constipation, 2 had mild and 2 had moderate constipation and 2 patients had recurrence. Patients were kept under six monthly follow-up till a period of eighteen months.

Conclusions: Only rectal mobilization with division of lateral ligaments can be a good surgical option in patients of rectal prolapse not having severe constipation.

Keywords: Rectal prolapse, Rectal mobilization, Division of lateral pedicles

INTRODUCTION

Rectal procidentia, also called rectal prolapse, is a pelvic floor disorder that typically occurs in older adult women, but can occur in men and women of all ages.¹ Rectal prolapse results in local symptoms (e.g., pain, bleeding, and seepage), bowel dysfunction (e.g., constipation, incontinence), and a diminished and disabled quality of life.¹ In 1912, Alexiz Moschowitz proposed that a rectal prolapse was caused by sliding herniation of the pouch of Douglas through pelvic floor into the anterior aspect of

the rectum.² With the advent of defecography in 1968, Borden and Snellman were able to show convincingly that procidentia is basically a full thickness rectal intussusception starting approximately 3 inches above the dentate line and extending beyond the anal verge.³

Patients with prolapse are frequently found to have specific anatomic characteristics i.e. diastasis of the levator, abnormal deep cul-de sac, redundant sigmoid colon, patulous anal sphincter and loss of rectal sacral attachments.⁴ Chronic or lifelong constipation with a

component of straining is present in more than 50% of patients and 15% experience diarrhoea.⁵ Differential diagnosis of rectal prolapse is prolapsed incarcerated internal haemorrhoids.

The purpose of treatment for rectal prolapse is correction of the prolapsed rectum as well as recovery and prevention from defecation dysfunction postoperatively.⁶ Therefore, when selecting surgical methods, operator should understand exact causative factors and anatomical variations.⁷ Perineal approaches were the dominant types of operation for rectal prolapse at the turn of twenties century.⁸ Theirsch's anal encirclement operation was described in 1891, In 1900, Delorme's mucosal sleeve resection was described and later in 1933, Miles performed rectosigmoidectomies.⁹

Perineal approaches have lower morbidities but have higher recurrence rate and high incidence of post-operative incontinence. Novel abdominal approaches to rectal prolapse repair also began to proliferate during the first half of his century.⁹ The Ripstein anterior sling has frequently been denigrated that it causes obstructive defecation and no improvement in constipation. because of concern of this, posterior sling has been favored described by Wells in 1959, associated with low incidence of post-operative constipation.¹⁰ Frykman and Goldberg described resection rectopexy in 1969. They concluded that resection of rectosigmoid in patient of constipation relieves constipation.⁷ Numerous types of surgeries have still been introduced and attempted. Most surgical techniques developed until now and have both advantages and shortcomings.

Speakman et al and Pollen et al have studied effects of division of the lateral ligaments on bowel functions and anorectal physiology during rectopexy. They concluded that division of lateral ligaments causes new onset constipation but with decreased incidence of recurrence. They attributed this effect to denervation of rectum.¹¹ Nelson et al have done full posterior rectal mobilization without sigmoid resection/rectopexy in patients and found that rectal mobilization alone decreases the incidence of recurrence and may be the major component of success.¹² Thus issue of recurrence and constipation remained unsettled in patients with rectal prolapse who underwent various rectal prolapse procedures specially rectal mobilization only and division of lateral ligaments. We performed this observational study to see the incidence of recurrence and constipation in the patients of rectal prolapse undergoing only rectal mobilization with the division of lateral pedicle.

Aims and objectives

To assess the incidence of recurrence in patients of rectal prolapse who underwent rectal mobilization only with division of lateral ligaments, to assess the incidence of newer onset constipation, alteration and severity of bowel habits after rectal mobilization only with division of

lateral ligaments and assessment of any other complications with above mentioned procedure.

METHODS

The present observational study was carried out in the Department of Surgery, Gandhi Medical College and Associated Hamidia Hospital, Bhopal (M. P.) India from March 2018 to February 2019. Total of 25 patients were included in the study with diagnosis of rectal prolapse who underwent only rectal mobilization with the division of lateral ligaments. All the cases of rectal prolapse, who belonged to 18-70 years age group, who had reducible prolapse, who were able to give informed consent and who agreed to come for follow-up, were included in the study. Those with chronic intestinal inflammatory disease, malignancy, severe constipation, concomitant pelvic floor descent, redundant sigmoid colon, irreducible prolapse, prior surgery for rectal prolapse, were excluded from the study. The study was approved by Gandhi Medical College, Bhopal from ethical committee prior to the commencement of the study.

Eligible patients were subjected to no rectopexy only rectal mobilization with the division of lateral ligaments. Patient were given bowel preparation, prophylactic intravenous antibiotics and deep vein thrombosis prophylaxis before surgery. Procedure was performed through a midline laparotomy. The rectum was mobilized down to levator ani posteriorly and to rectovesical/vaginal septum anteriorly. Posterior division was done close to mesorectum to spare the hypogastric nerves. The extent of rectal mobilization and the division of the lateral ligaments was done upto middle rectal artery. The splenic flexure was not mobilized. After the procedure, mobilized rectum was pulled and gently without tension, sutured to sacral promontory with single vicryl suture. Drain was kept in pre sacral space. Midline laparotomy was closed.

In post-operative period, all the patients were started intravenous patient- controlled analgesia with fentanyl (1-2 mg/kg), maximum (6 times/hour) up to post-operative day 2, oral analgesia was started on post op day 2. Nasogastric tubes were removed at the end of the operation. Liquids were offered in the evening on the day of surgery. If oral liquids were tolerated, diet was given, laxatives were avoided. Early mobilization was encouraged and patients were discharged after having a bowel movement, tolerating solid food, being able to walk properly and being made comfortable with oral analgesia. Follow-up consisted of one visit per month ensuing over six months up to 11/2 years to check for any complication like constipation or recurrence. Approval was sought from ethical committee of Gandhi Medical College, Bhopal.

The data was not subjected to any statistical analysis. We assessed the post-operative outcome on the basis of Cleveland clinical constipation scoring system (CCCS).¹³

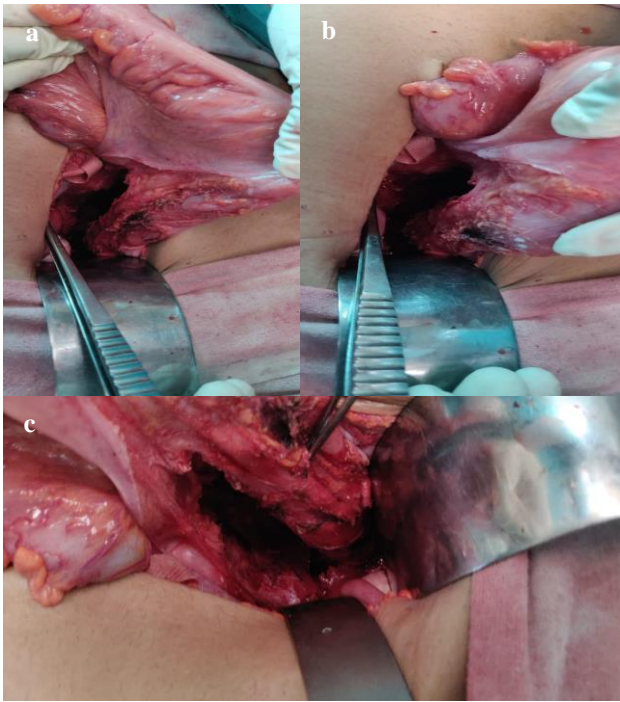


Figure 1 (a-c): Intra-operative pictures of rectal mobilization Courtesy-Hamidia hospital.

Cleveland Clinic Constipation Score (CCCS)			
Agachan et al. Dis Colon Rectum. 1996;39(6):681-5.			
Frequency of bowel movements	score	Time: minutes in lavatory per attempt	
1-2 times per 1-2 days	0	Less than 5	
2 times per week	1	5-10	
Once per week	2	10-20	
Less than once per week	3	20-30	
Less than once per month	4	>30	
Difficulty: painful evacuation effort		Assistance: type of assistance	
Never	0	Without assistance	
Rarely	1	Stimulative laxatives	
Sometimes	2	Digital assistance or enema	
Usually	3	-	
Always	4	-	
Completeness: feeling incomplete evacuation		Failure: unsuccessful attempts for evacuation per 24 h	
Never	0	Never	
Rarely	1	1-3	
Sometimes	2	3-6	
Usually	3	6-9	
Always	4	>9	
Pain: abdominal pain		History: duration of constipation (yr)	
Never	0	0	
Rarely	1	1-5	
Sometimes	2	5-10	
Usually	3	10-20	
Always	4	>20	

Figure 2: Cleveland clinic constipation score.

RESULTS

In our study, 60% were females and 40% were males. Majority i.e. 52% patients were in the age group 21-40 years age group, 24% in 41-60 years age group, and only 12% each in <20 years and 61-80 years age group (Table 1). Out of total 25 patients, 15 patients i.e. 60% were females and 40% were males (Table 2).

Besides, prolapsed mass per rectum, mucus discharge, pain while defecation, diarrhoea, bloody discharge and

urinary incontinence were common pre-operative symptoms among patients. During the pre-operative period, 9 patients had mild CCCS, 14 had moderate constipation and 2 had moderate constipation (Figure 1).

Table 1: Age wise distribution of patient (n=25).

Age group in years	Number of patients	Percentage
<20	3	12
21-40	13	52
41-60	6	24
61-80	3	12

Table 2: Sex wise distribution of patient (n=25).

Sex	Number of patients	Percentage
Male	10	40
Female	15	60

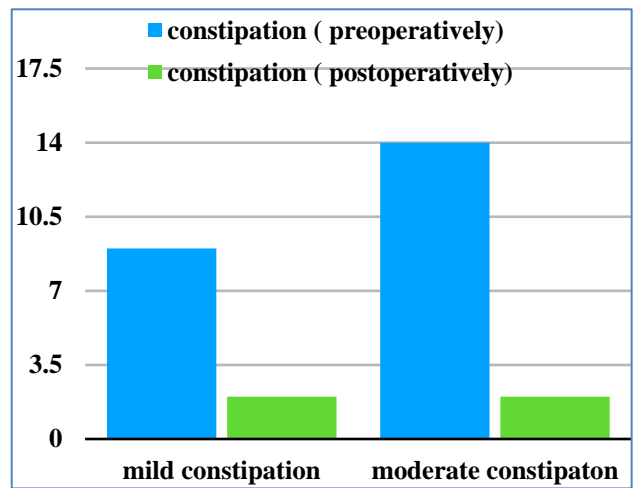


Figure 3: Patients having constipation pre and post operatively calculated from CCCS.

Main post-operative symptoms included pain in abdomen, nausea, vomiting and abdominal fullness. In the post-operative period, 16% patients had constipation, 12% had pelvic abscess, 8% had recurrence and none of the patients complained of bladder or erectile dysfunction.

Table 3: Post-operative complications (n=25).

Complications	Number of patients	Percentage
Constipation	4	16
Recurrence	2	8
Bladder dysfunction	0	0
Erectile dysfunction	0	0
Abscess/pelvic abscess	3	12

Table 4: Follow up.

Visits (in months)	No. of patients who visited	Constipation	Percentage	Recurrence	Percentage
6	24	1/24	4.1	0/24	0
12	24	2/24	8.3	0/24	0
18	22	1/24	4.1	2/24	8.3

Patients were advised six monthly followup for a period of 18 months.

DISCUSSION

The aim of the study was to evaluate the effect of only rectal mobilization colonic and anorectal functions which we tried to infer by assessing constipation. Rectal prolapse is mostly a disorder of adults and elderly with 52% prevalence in age group 21-40 years and only 12% in <20 years and 61-80 years age group. Female preponderance noted in our study with 60% being females and only 40% males. Similar result was also reported in Speakman et al and Mollen et al studies.^{11,17} Following clinical symptoms were present pre-operatively with prolapsing mass in 100%, pre-operative constipation in 92% (23 patients), pain while defecation 72% of patients, while diarrhoea was also a complaint in 40% with urinary incontinence 20% of preoperative patients. Pain in abdomen was the most prevalent post op symptoms with 28% prevalence, whereas nausea, vomiting and abdominal fullness was noted only in 20% and 4% respectively. Incidence of post-operative constipation noted in 16% of patients in our study which was less as compared to Speakman, where constipation was 71.4%.¹¹ And recurrence in our study was noted in 8% of patients while in Speakman, only a single case of post-operative recurrence was noted. None of the patients had bladder or erectile dysfunction after surgery. Pelvic abscess has been reported among 12% of patients.¹¹ While post-operative stay was upto 3 days for 16 patients, only 4 patients remained admitted up to 5 days post operatively, a meagre of 3 remained until the 7th post-operative day. 2 patients had to stay upto 15 days postoperatively. So maximum was discharged within first 3 post-operative days.

Out of the various preoperative/intra-operative risk factors identified most important seemed to be redundancy of rectosigmoid colon (intra-operative) with 28% prevalence. Other risk factors were like various forms of psychiatric illness in 24%, previous pelvic surgery in 20% patients preoperatively. IBS and family history were both present in 4% of patients.

While keeping up the follow up of post-operative patients at 6, 12 and 18 months, constipation and recurrence was seen with 4.1%, 8.3%, 4.1% and 0%, 0%, 8.3% respectively. Follow up was advised to all 25 patients, out of which 24 patients came for follow up amounting to a mean follow up of 88.2. Amongst them 4 patients

suffered from constipation and 2 patients from recurrence at the end of visits.

According to CCCS, number of patients having mild (constipation score 1-10), moderate (CS 11-20) and severe constipation pre-operatively were 9, 14 and 0. Similarly number of patients with post-operative constipation according to CCCS were 2, 2 and 0 for mild, moderate and severe constipation grade, respectively.¹³ Thus clearly indicating the benefits of mere only rectal mobilization for rectal prolapse.

Several previous studies were performed in the past but none of them had been successful to show whether only rectal mobilization or rectopexy combined will improve or will have no effect on the ultimate outcome. Joshua et al in 2011 performed study to compare the recurrence rate in no rectopexy and rectopexy group of patients in which he found rectopexy was superior to no rectopexy with regards to the rate of recurrent FTRP at 5 year after surgery.¹⁶ As in our study also only rectal mobilization noted a reduced recurrence rate as compared to the study. Mollen et al in 2000 performed the study on the effects of rectal mobilization and lateral ligaments division on colonic and anorectal functions found out rectal mobilization had a statistically significant effect on colonic function in terms of total and segmental colonic transit times but no significant effect on anorectal functions.¹⁷ Also division of lateral ligaments did not significantly influence post-operative functional outcome i.e. constipation.¹⁷ Speakman et al in 1991 performed study on 26 patients out of which rectopexy with division of lateral ligaments was performed in 14 patients in which 10 patients had constipation and none of them had recurrence.¹¹

In the present study, only rectal mobilization and division of lateral ligaments was performed in 25 patients, a reduced rate of constipation as complication postoperatively noted (only 4 out of 25) and also recurrence was only in 2 patients. This difference in the rate of post-operative constipation and recurrence can be inscribed to the additional rectopexy performed in patients by Speakman et al.

Table 5: Comparison of postoperative outcome of our study with Speakman's study.

Factors	Speakman et al ¹¹ (n=14)	Present studies (n=25)
Constipation	10	4
Recurrence	0	2

Rectopexy led to higher incidence of constipation, where as in our study, where only rectal mobilization was performed without interruption of the hypogastric plexus accompanying superior rectal artery and its branches due to the dissection carried out in embryological plane of cleavage between the pre sacral fascia and mesorectum which led to the preservation of the autonomic nerve filers and there by maintaining the integrity of colonic movement. Other possible explanations for constipation after rectopexy include the redundant sigmoid loop which may form above the fixed rectum or the fibrous and immobilization of the rectal walls.¹⁸

CONCLUSION

So only rectal mobilization with the division of lateral ligaments can be a very good approach for patient with rectal prolapse not having severe constipation. There is no risk of mesh complications and recurrence rate is almost equal to patients with mesh rectopexy and suture rectopexy. This might suggest a future endeavour towards only rectal mobilization with the division of lateral ligaments.

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REFERENCES

1. Varma MG. Overview of rectal procidentia (rectal prolapse). *Dis Colon Rectum*. 2017;60:1132-5.
2. Greene FL. Repair of rectal prolapse using a pubo-rectal sling procedure. *Archives Surg*. 1983;118(4):398-401.
3. Cannon JA. Evaluation, diagnosis, and medical management of rectal prolapse. *Clinics Colon Rectal Surg*. 2017;30(01):16-21.
4. Cannon JA. Evaluation, diagnosis, and medical management of rectal prolapse. *Clinics Colon Rectal Surg*. 2017;30(01):16-21.
5. Liu LW. Chronic constipation: current treatment options. *Canadian J Gastroenterology Hepatology*. 2011;25(B):22B-8B.
6. Yoon SG. Rectal prolapse: review according to the personal experience. *J Korean Society Coloproctology*. 2011;27(3):107.
7. Shin EJ. Surgical treatment of rectal prolapse. *Journal Korean Society Coloproctol*. 2011;27(1):5.
8. Hamel CT, Wexner SD. Rectal prolapse. In *Surgical Treatment: Evidence-Based and Problem-Oriented*. Zuckschwerdt. 2001;27(1):5-12.
9. Joubert K, Laryea JA. Abdominal approaches to rectal prolapse. *Clinics Colon Rectal Surg*. 2017;30(01):57-62.
10. RF. *Pelvic floor anatomy and the surgery of pulsion enterocoele*. Springer Science and AMP; Business Media; 2013.
11. Speakman CT, Madden MV, Nicholls RJ, Kamm MA. Lateral ligament division during rectopexy causes constipation but prevents recurrence: results of a prospective randomized study. *British J Surg*. 1991;78(12):1431-3.
12. Nelson R, Spitz J, Pearl RK, Abcarian H. What role does full rectal mobilization alone play in the treatment of rectal prolapse. *Techniques Coloproctol*. 2001;5(1):33.
13. Chen AF. Cleveland clinical constipation score: a constipation scoring system to simplify evaluation and management of constipated patients. *Dis Colon Rectum*. 1996;39:681.
14. Cirocco WC. The Altemeier procedure for rectal prolapse: an operation for all ages. *Diseases Colon AMP Rectum*. 2010;53(12):1618-23.
15. Gama HA, Jacob CE, Jorge JM, Seid VE, Marques CF, Mantese JC, et al. Rectal procidentia treatment by perineal recto-sigmoidectomy combined with levatorani repair *Hepato-gastroenterology*. *Int J Surg*. 2006;53(68):213-7.
16. Mengensatzproduktion S, Stuckle D. The 51st Congress of the European Society for Surgical Research. May 25-28, 2016, Prague, Czech Republic: Abstracts. *European Surg Res*. 2016;57(1):1-41.
17. Mollen RM, Kuijpers JH, Hoek VF. Effects of rectal mobilisation and lateral ligaments division on colonic and anorectal function. *Diseases Colon AMP Rectum*. 2000;43(9):1283-7.
18. Nirnhuis,JE. *De rectum prolaps*. Erasmus University Rotterdam, 1983 Available at: <http://hdl.handle.net/1765/37541>. Accessed on 10 January 2019

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