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Research Article

Study of clinical and functional results of abdominal rectopexy using prolene mesh for complete rectal prolapse

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Abstract

Background and Objectives: Surgeries for complete rectal prolapse range from complex abdominal interventions to simple perineal procedures with varying results. The ideal procedure is still an enigma. Many surgeons today believe that abdominal rectopexy is the operation of choice not only in the young but even in the elderly patients, resulting in a low recurrence rate and restoration of continence in patients. Our study attempted to evaluate clinical and functional results of prolene mesh abdominal rectopexy for complete rectal prolapse.

Methods: Fifteen patients with complete rectal prolapse underwent prolene mesh abdominal rectopexy after investigations. Ethical clearance was obtained. Postoperative complications like haemorrhage, operative mortality, wound infection, infection around prolene mesh, bladder and erectile dysfunction were analysed. During follow up (mean 7.3 months), recurrence of rectal prolapse, changes in bowel frequency and restoration or deterioration in continence was noted.

Results: Significant (100%) improvement in one patient with incontinence, decrease in bowel frequency in 2 patients (13%), postoperatively, though no constipation noted.

No postoperative complications, mortality, recurrences.

Conclusion: Prolene mesh Abdominal rectopexy is a simple operation with satisfactory low recurrence rate, good functional out come and can be considered in all patients who are fit for abdominal procedure.

Keywords: Complete Rectal Prolapse; Abdominal Rectopexy; Prolene Mesh; Fecal Incontinence

1. Introduction

When an internal organ persists in an endeavour to become an external organ, it generally causes a great deal of trouble. The rectum is occasionally an offender in this respect. W. Ernest Miles, 1993.

Complete rectal prolapse or procidentia is a distressing and demoralizing condition. It is frequently associated with incontinence either because there is an underlying weakness in the sphincter mechanism which allows the prolapse to occur, or because of the presence of the prolapse protruding through the anal canal leads to poor sphincter function [1,2,3].

Although complete rectal prolapse occur at any age the mean age of incidence being in the fourth to seventh decades. The sex distribution ranges from 10 to 6:1, women to men in west. In Asia slight male preponderance is seen [2, 4]. Unfortunately there has been little if any advance in this respect with newer methods of treatment [2,4,]. The most common and successful operations are those that either use a synthetic material to fix the rectum to the sacrum, as described by Ripstein and Lanter and Wells, or those that resect a portion of the rectosigmoid, as described by Theuerkauf and others[5,6,]. Among abdominal procedures of rectopexy the most frequently used is some form of posterior rectopexy which involves mobilization of the rectum from the sacrum and fixation either directly or by the use of an artificial material such as Marlex mesh, Ivalon sponge (Well's operation) or an absorbable mesh such as vicryl.[7] Abdominal rectopexy has a low morbidity and mortality rate. The recurrence rate is usually less than 4% with recorded improvement in incontinence and constipation[7,8].

Fig: 1- preoperative photograph showing complete rectal prolapse.

1.1 Purposes of Study

Objectives of this study were;

1) To study recurrence and post operative complications of abdominal rectopexy using prolene mesh for complete rectal prolapse.
2) To study the functional results (bowel frequency and incontinence following abdominal rectopexy).

2. Materials and Methods

This prospective clinical study included 15 cases of complete rectal prolapse who underwent abdominal rectopexy using prolene mesh. These patients were admitted to Chigateri General Hospital and Bapuji Hospital attached to J.J.M Medical College Davangere, during the period from January 2004 to December 2005. Ethical committee approved our study.

The patients coming with a history of protrusion of mass per anus were interviewed and a diagnosis of complete rectal prolapse was made essentially on clinical examination.

2. Inclusion Criteria:

Patients with complete rectal prolapse who underwent abdominal rectopexy using prolene mesh.

2.2 Exclusion Criteria:

1) Cases of complete rectal prolapse where sigmoidectomy or colectomy was combined with abdominal rectopexy.
2) Cases which could not be followed up for a minimum period of 6 months.

No distinction was made between occasional and regular episodes of incontinence.

For assessing bowel function, constipation was defined as passage of hard stools with frequency less than once a day or marked straining at stools. Fecal frequency was more than 3 bowel actions a day.

Following investigations were done in all cases.

- Blood: Hb%, TC, DC and ESR.
- Urine: sugar, albumin, microscopy.
- FBS, serum creatine, HIV, HbsAg.
- Chest x-ray and ECG.
- Sigmoidoscopy.

All 15 cases were subjected to abdominal rectopexy using prolene mesh and were followed up for a minimum period of 6 months.

For assessing functional results, continence was classified after Browning and Park's as follows[8]:

Classification of continence (Browning and parks)

Grade 1: Fully continent for flatus & stool

Grade 2: Continent for stools but not for Flatus

Grade 3: Incontinent for liquid stool

Grade 4:Incontinent for solid stool

3. Observation and Results

In our study patients ranged in age from 20- 60yrs. The overall mean age being 36.73 years. The highest occurrence (47%) was seen in age group of 41-50 years. The next age group affected (27%) was 31-40 years. Over all 67% of the cases were seen over the age of 40. there were twelve (80%) male patients and three (20%) female patients with male to female ratio of 4:1. All the female patients were parous and had normal vaginal delivery.

Table 1: Age distribution

Age in Years	No. of Cases	Percentage
21-30	1	6
31-40	4	27
41-50	7	47
51-60	3	20

Table 2: Sex distribution

Sex	No. of Cases	Percentage
Male	12	80
Female	3	20
Total	15	100

The predominant symptoms seen in all our patients were prolapse and mucus discharge form anal canal with a mean duration of 7.3 months. The next common symptom was occassional bleeding seen in 9 (60%) patients with mean duration of 3.2 months.

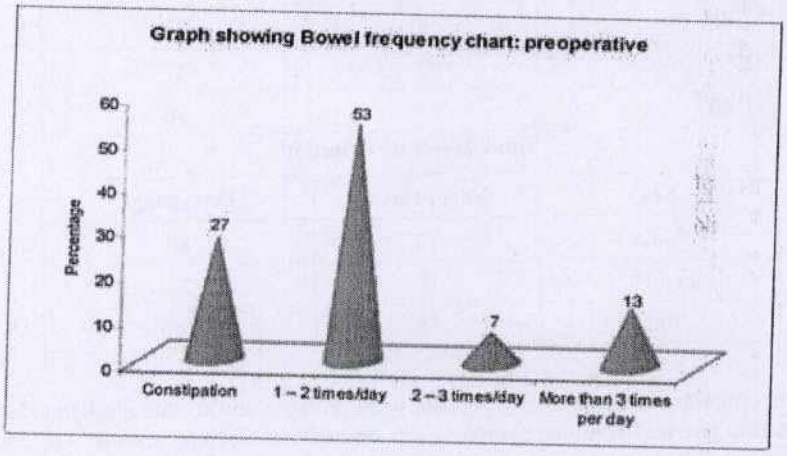
Constipation with straining at stool was seen in four (27%) cases. Only two patients (13%) had bowel frequency of more than 3 times per day and one among them complained of incontinence for liquid stools.

Table 3: Symptoms with duration

Symptoms	No of cases with percentage	Mean duration
Rectal prolapse	15 (100%)	7.3 months
Mucus discharge	15 (100%)	7.3 months
Occasional bleeding	9 (60%)	3.2 months
Loose stools	2 (13%)	2.6 months
Constipation	4(27%)	18 months
Straining at stools	4 (27%)	18 months
Incontinence to stool/flatus	1 (7%)	3 months
Uterine prolapsed	Nil	Nil

Table4: Bowel frequency chart: preoperative

Bowel frequency per day	No of cases	Percentage
Constipation	4	27
1 - 2 times/day	8	53
2 - 3 times/day	1	7
More than 3 times per day	2	13
Total	15	100



Four (25%) patients had undergone previous anorectal surgery. Haemorrhoidectomy (three), Thiersch stitch (one). One female patient had undergone vaginal hysterectomy with pelvic repair for uterine prolapse 3 years prior to noticing prolapse of rectum.

Table 5: Previous anorectal surgery/ vaginal hysterectomy with pelvic repair

	Male patients	Female patients
	(total no 12)	(total no 3)
Haemorrhoidectomy	2 (12%)	1(6%)
Thiersch stitch	1 (6%)	Nil
Vaginal hysterectomy with	-	1 (6%)
pelvic repair		

6 (40%) patients presented with complete prolapse which was manually reducible and there was no ulceration or bleeding. 9 patients (60%) presented with complete prolapse with ulceration and bleeding. There was no cystocele, rectocele or uterine prolapse in female patients. The anal canal was patulous in all cases. On sigmoidoscopy distal proctitis was noticed in 9 (60%) cases.

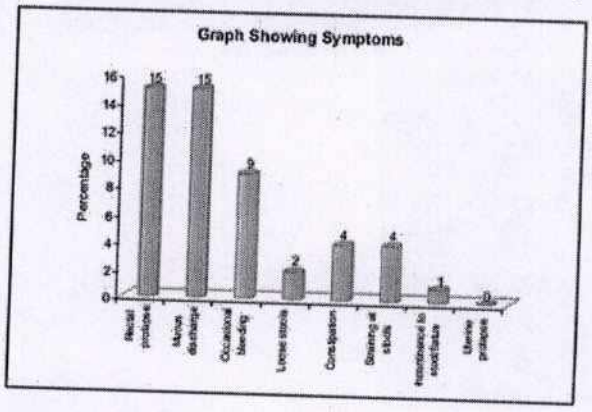
Average duration of operation was 1 hour 33 minutes. There was no mortality. There were minimal post operative complications. Only one case of prolonged ileus was seen extending for seven days which resolved on conservative treatment.

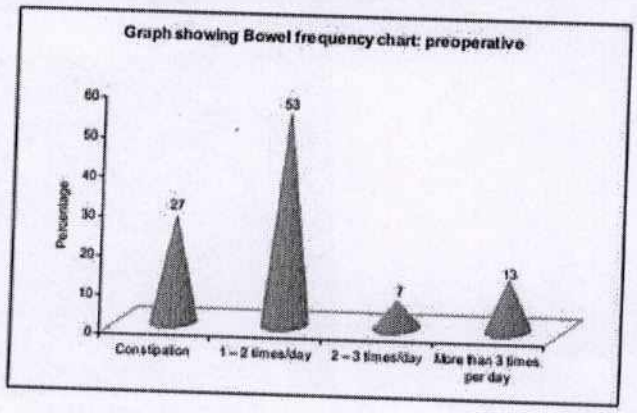
The average duration of hospital stay was 8 days and the average time taken by patient to return to normal daily activities was 7 days.

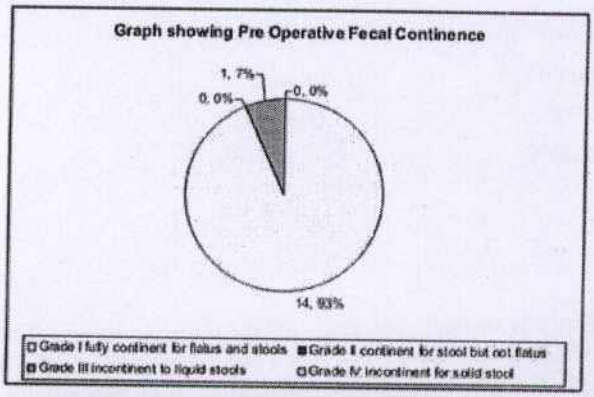
Table 6: Post operative complications

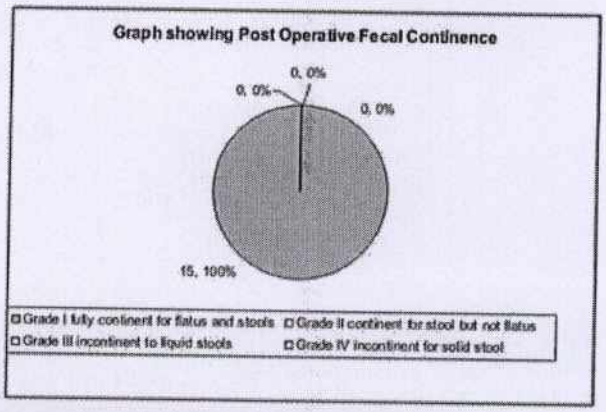
Complications	No of cases	Percentage
Haemorrhage	Nil	0
Prolonged ileus	1	7
Mesh infection	Nil	0
Wound infection	Nil	0
Bladder dysfunction	Nil	0
Erectile dysfunction	Nil	0
Mortality	Nil	0

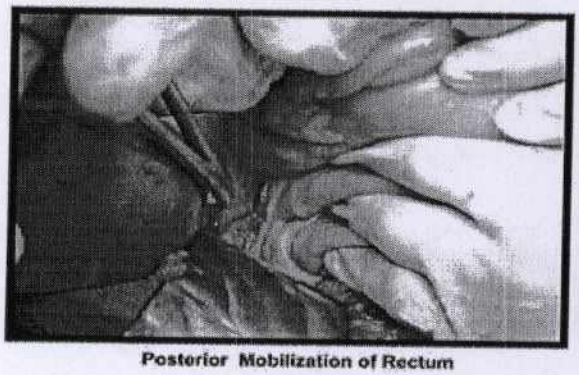
There was no recurrence of rectal prolapse either partial or complete for a mean follow up period of 7.3 months. Bowel frequency of more than 3 times per day seen in 2 patients preoperatively improved to 1-2 times per day postoperatively. Out of 4 patients with preoperative constipation, improvement was seen in only one patient who had incontinence to liquid stools had improvement after rectopexy and was fully continent after wards.



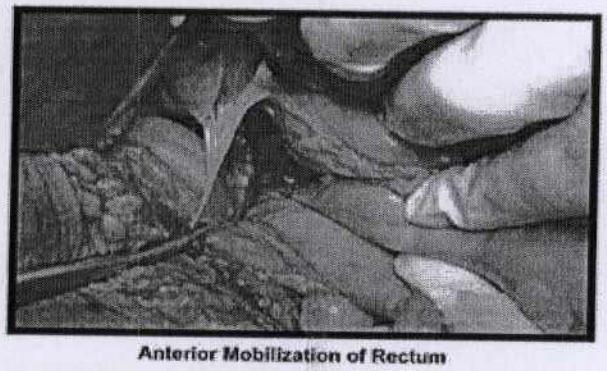




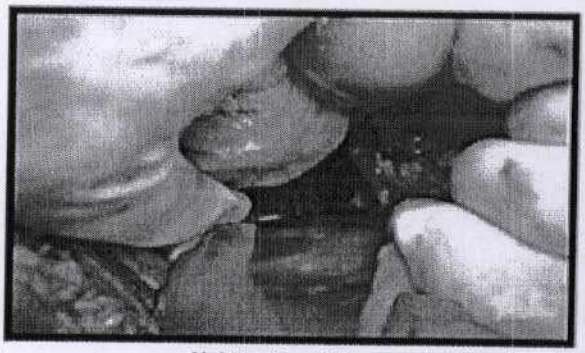




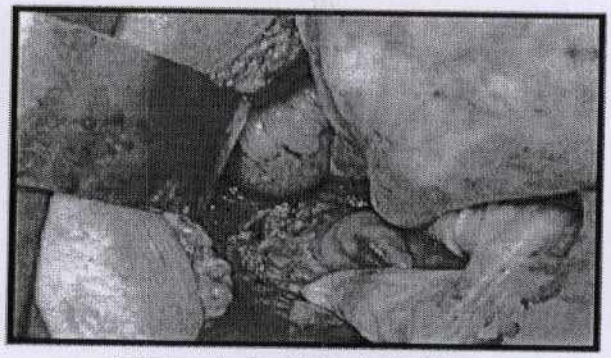
Posterior Mobilization of Rectum



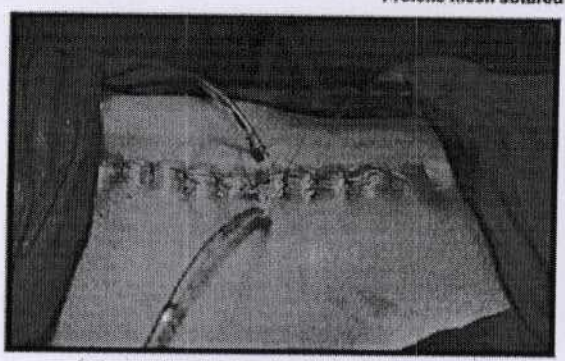
Anterior Mobilization of Rectum



Mobilization of Rectum



Prolene mesh sutured to lateral wall of Rectum



Abdomen closed with Redivac drain in Presacral space

4. Discussion

Complete rectal prolapse, a distressing condition is more common in adults than in children. We have seen in our study that this condition is seen predominantly after the age of 40 nearly in 67% of cases. We did not have any paediatric case with complete rectal prolapse in our series. [1,2]

Women are principally affected in West with female to male ratio of 6:1. However in our series there is male preponderance with male to female ratio being 4:1.[3, 4]

Increased incidence in males with slight male preponderance is also reported in India and other Asian countries[4,5]. All the female patients in our series were parous without any evidence of cystocele, rectocele or uterine prolapse.

Disordered bowel habit particularly constipation with straining is considered to be one of the predisposing factors in the aetiology of prolapse. We have found constipation only in 4 (27%) patients preoperatively.

Incontinence of various grades are reported in different studies in West that range from 30% to 80% .But our series had only one patient (7%) who complained of incontinence for liquid stools only. Probably this is because of the fact that we may be seeing the patients at much younger age than in the West[5,6,7]

Over the past 30 to 35 years, abdominal rectopexy has become the accepted management of complete rectal prolapse in patients fit enough for an abdominal procedure. [8,9,10]

5. Conclusion

Prolene mesh abdominal rectopexy is easy to learn and master. There were no significant postoperative complications including intractable constipation, mesh infection etc. Functional result in the form of improvement in incontinence was also excellent. There was no mortality or recurrence in our study. Therefore we consider abdominal rectopexy using prolene mesh an ideal operation for complete rectal prolapse for patients who are fit for an abdominal procedure.

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