

# A Prospective Study of Complete Rectal Prolaps Cases Treated with Abdominal Rectopexy using Prolene Mesh or Simple Suture

Dr Marshall Daud Kerketta<sup>1</sup>, Dr. A. K. Tiwary<sup>2</sup>, Dr Bikram Kumar<sup>3</sup>, Dr Hikeno K Yeptho<sup>4</sup>,  
Dr Akash Kumar Gupta<sup>5</sup>, Dr Manoj Kumar Das<sup>6</sup>, Dr Chandan Kumar Samal<sup>7</sup>, Dr Kavita Topno<sup>8</sup>

RIMS, Ranchi, Jharkhand, India. Pin - 834009

**Abstract:** Complete rectal prolapsed case is difficult to treat as there is too much of options available but none of them gives confidence to surgeon. Aim of surgery is to restore physiology by correcting the prolapse and improving continence and constipation with acceptable mortality and recurrence rates Perineal procedures are done for older frail patients with significant comorbidity where as abdominal operations are ideal for young and fit patients. In recent time laparoscopic treatment procedure is also changing the scenario, with their advantages of early recovery, less pain and less morbidity. In our study we have done abdominal rectopexy with a prolene mesh or done only suture rectopexy. We had operated on 26 patients of complete rectal prolapsed cases and assessed primary outcome measure (recurrence) and secondary outcome measures like- length of hospital stay, constipation, faecal incontinence morbidity, mortality etc.

**Keywords:** Complete Rectal Prolapse, Abdominal Rectopexy, Simple Suture, Mesh Rectopexy

## 1. Introduction

Prolapse of the rectum has been defined as a protrusion of part or all layers of the rectum through the anal orifice. Mucosal (or partial) prolapse in which anal and distal part of the rectal mucosa protrudes through the anal verge, and in complete rectal prolapse, All layers of the rectum extrude. Complete rectal prolapse is also referred to as rectal procidentia. If the rectal wall has prolapsed but does not protrude through the anus then it is referred to as occult prolapsed or internal intussusceptions.

The diagnosis of complete rectal prolapse is straightforward and based upon a history and evaluation of anorectal area.

The goal of surgical management is to correct the anatomical defect and to restore normal bowel function with a procedure, which has minimal morbidity and an acceptable recurrence rate.

Generally prolapse repairs are categorized into perineal and abdominal approaches.

- a) *Perineal procedures* –(1) Anal encirclement (Thiersch procedure). (2) *Delorme procedure (Mucosal Sleeve resection)* (3)*Altmeier procedure (Perineal rectosigmoidectomy)*
- b) *Abdominal procedures* - They can be classified as – (1) Resection alone (2) *Rectal mobilization with resection and rectopexy* – Frykman initially described rectopexy along with resection in 1955. (3) *Rectal mobilization with rectopexy* (4)*Ripstein procedure* – Ripstein and Lanter in 1963 described an anterior sling rectopexy that is commonly performed in the United states.(4) *Well's procedure (Ivalon sponge)* – Historically British surgeons have preferred the posterior rectopexy described by Well in 1959. In the Well's procedure, an Ivalon sponge made of polyvinyl alcohol is used instead of the mesh. (5)*Suture rectopexy*

Perineal repairs are associated with higher recurrence rates but the morbidity is slightly lower than an abdominal approach.

Considering the merits and demerits of each procedure for repair of rectal prolapse, we preferred to work on abdominal rectopexy with subsequent observations.

In our study, an attempt of sacral rectopexy was done for patients of complete rectal prolapse admitted in the Department of Surgery, Rajendra Institute of Medical Sciences, Ranchi to give a better result, as it is easy to perform, less time consuming, minimal hospital stay, minimal blood loss, minimal morbidity and mortality and its lower recurrence rate.

## 2. Material and Method

Twenty six cases of complete rectal prolapse admitted in Surgical wards, during the period from January 2016 to June 2019 in the department of general surgery, Rajendra Institute of Medical Sciences, Ranchi, Jharkhand, India; comprised the material for the present study.

**Inclusion Criteria** - Only those cases which were confirmed to have complete rectal prolapse on clinical examination were operated upon, and were included in our study.

**Exclusion Criteria**-- Partial rectal prolapsed patients were not included in our study.

Each case was studied as per following plans:

- a) Details of Patients
- b) Case History
- c) Investigations

### Routine investigation, radiological examination-x-ray chest AP and Lateral views, Plain X-ray abdomen in erect posture

#### Special investigation:

- Proctoscopy and sigmoidoscopy- The following were noted: Lumen of rectum normal, ballooned or contracted, content of rectum, empty or containing faeces, foreign body, growth or blood and mucus, appearance of mucous membrane, pale smooth with visible capillaries, necrotic or sloughed, ulcerated or having growth or polyp
- Double contrast Barium exam whenever necessary
- Ultrasonography of whole abdomen and pelvis to exclude other diseases.

#### Operative Management

This was done as follows:

- Patient having associated systemic disorders were treated accordingly to their problems.
- Immediate pre-operative preparation:
  - Mechanical preparation consisting of
    - Dietary – The diet was restricted to clear fluids for three days prior to surgery with low residue solids.
    - Enema after use of saline laxatives
    - Ingestion of Repilac or Peglac 24 hours prior to operation
  - Oral antibiotics were administered for gut sterilization
    - Cefuroxime 750 mg plus Metronidazole 500 mg one hour before surgery, plus another two doses of each drug at 6 and 12 hours after the operation.
    - In some cases – Metronidazole (400 mg) + Ciprofloxacin (500 mg) from 2 hours prior to surgery
- Surgical management:

There are two surgical approach options are available--

- Perineal approach – Not included in this study.
- Transabdominal approach– Fourteen cases were treated by sacral rectopexy with the help of Simple suture only and twelve patients were treated by rectopexy with prolene mesh.
  - Anaesthesia – Usually the operations were performed under general anaesthesia or spinal anaesthesia.
  - Incision – Lower vertical midline incision or lower left paramedian incision was given.
  - Dissection – After retracting the wound edges and packing off the small gut into the upper abdomen, dissection done to mobilize the rectum completely.
  - Fixation

**Rectopexy with Mesh--** The rectum was lifted forwards from the hollow of the sacrum. A sheet of polypropylene mesh (we had used prolene mesh), 8-10 cm square was attached to the fascia in front of the sacrum, from the promontory down to the 3<sup>rd</sup> or 4<sup>th</sup> segment inserting all sutures (we had used prolene 1/0 or 2/0) into the presacral fascia before passing them through the mesh. The rectum was then drawn firmly upwards; the mesh sheet was folded around it, to cover all except the anterior one quarter or one fifth of its circumference, and was secured by three or four stitches uniting its lateral margins to the bowel wall. In few

cases the mesh was fixed to the sacral promontory through interrupted prolene suture and then sutured by prolene 2-0 on both side of rectum. Thus the mesh was wrapped around the lateral sides of the rectum but the anterior rectal wall was left free. Finally, the peritoneal flaps were sutured in front of the bowel or against its sides, so that the mesh was completely buried.

**In rectopexy with multiple suture--** After complete mobilization of rectum, it was fixed to the front of the sacrum directly without intermediary of any sheet. The presacral sutures had all been placed and, starting with the lowest one, each stitch was being inserted superficially on the posterior rectal wall (we had used prolene 1/0 or 2/0 suture)

- Operative time
- Parenteral infusion – Usually terminated in 36-48 hours except in transient paralytic ileus.
- Blood transfusion – Usually not required.
- Hospital stay
- Early and late surgical complications
- Outcome (result) of surgery
- Postoperative care – To avoid faecal accumulation by daily enema for 10-15 postoperative days.
- Follow up – This was done at monthly/three monthly/six monthly/ at one year to detect any -
  - Bowel dysfunction
  - Incontinence
  - Recurrence

### 3. Observation

**Table 1:** Distribution of Cases According to Age and Sex

Age group (in years)	Male		Female		Total cases
	No. of cases	%	No. of cases	%	
20-30	03	11.53	00	0	03
31-40	05	19.23	01	3.85	06
41-50	07	26.92	02	7.69	09
51-60	03	11.53	03	11.53	06
61-70	00	00	01	3.85	01
> 70 years	00	00	01	3.85	01
Total	18	70	08	30	26

Male: Female ratio was 2.33:1. Almost 70% patients were under 50 years of age. In age group of >60 years, there was two cases and both of them were females. In younger age group (< 40 years). There was only one female case.

**Table 2:** Clinical Presentation

Clinical presentation	No. of cases	Percentage (approx.)
Mass protruding per anus	26	100
Mucous discharge	18	70
Bleeding per anus	05	20
Pruritus ani	02	8
Constipation	13	50
Associated anaemia	03	12
Faecal incontinence	01	04

**Table 3:** Distribution of cases showing operative time taken

Operative time (in minutes)	No. of cases	Break up of cases according to type of operation		Mean operative time (in minute)	
		Prolene mesh rectopexy	Sutured rectopexy	Prolene mesh rectopexy	Sutured rectopexy
60-75	12	03	09	70	64.00
76-100	12	07	05	92	86.00
101-125	02	02	00	114	00
Total	26	12	14	92.00	75.00

Overall mean operative time taken was 92.00 minutes for prolene mesh rectopexy and 75 minutes for sutured rectopexy.

**Table 4:** Distribution of Cases Showing Final Outcome

Presenting symptoms	No. of cases	Nature of operation		Surgical outcome	Success rate in percentage	
		Prolene mesh rectopexy	Sutured rectopexy		Prolene mesh rectopexy	Sutured rectopexy
Mass protruding per anus	26	12	14	Relieved	100	100
Mucous discharge per anus	18	07	09	Relieved	100	100
Bleeding per anum	04	3	1	Relieved	100	100
Faecal Incontinence	03	2	1	Relieved	50	100
Constipation	14	6	8	Relieved partially	66.7	87.5
Associated anaemia	02	0	2	Fully corrected	--	100
Overall success rate approximately					84%	98%

All the presenting symptoms were fully relieved after rectopexy except constipation and faecal incontinence. Constipation was present in 14 cases, among these, prolene mesh rectopexy was performed in 6 cases and sutured rectopexy was done in 8 cases. Out of 6 cases of prolene mesh rectopexy, only 4 cases (66.7%) got rid off their problem after surgery. Constipation persisted in one patient who underwent simple suture rectopexy. Faecal incontinence was not completely improved in one case who underwent mesh rectopexy. This patient was advised about perineal exercise to increase anal tone and thus continence.

#### 4. Follow-Up

Follow up of operated patients was done according to the following schedule –first at one month interval then after 3 months, six months and at one year interval.

Constipation was observed in 3 patients after 6 months of follow up. Only one case developed faecal impaction presenting with subacute intestinal obstruction in an old lady after 6 months of follow-up. Other presenting symptoms were not observed during one year of follow-up. There was no recurrence of rectal prolapse either.

#### 5. Summary

- 1) In the present series, twenty-six cases of complete rectal prolapse admitted in Surgical ward of Rajendra Institute of Medical Sciences, Ranchi were selected for study.
- 2) Almost 60% of patients were below 50 years of age. In older age group, females outnumbered males. Overall M:F ratio was 2.33:1.
- 3) Clinically all presented with mass protruding per anus. Minor complaints of constipation, bleeding per anum and faecal incontinence were present in less than 20% of the cases.
- 4) 50% of cases had constipation and straining at stool. 20% of cases showed no predisposition whereas two out of eight female cases had undergone hysterectomy in the past.

- 5) Surgical treatment in the form of prolene mesh rectopexy was offered to 12 of the cases while 14 were operated by sutured rectopexy. Majority of the cases (66.66%) were operated under spinal + epidural anaesthesia. Lower midline incision was preferred over lower left paramedian incision (80% Vs 20%).
- 6) The mean operating time was variable for prolene mesh and sutured rectopexy. In cases who had undergone prolene mesh rectopexy, the mean operative time was 92 minutes whereas it was only 75 minutes for sutured rectopexy.
- 7) The mean postoperative hospital stay period also varied depending upon type of operation performed. It was 10.94 days for cases who underwent prolene mesh rectopexy while it was 9.95 days for cases operated by sutured rectopexy.
- 8) Out of the 12 cases who had undergone prolene mesh rectopexy, 08 were relieved of their presenting symptoms while four cases showed persistence of constipation even after operative treatment. In this study, the overall success rate of prolene rectopexy was approximately 84%. All the 14 cases of sutured rectopexy were relieved of their presenting symptoms after undergoing operative management. The overall success rate for sutured rectopexy was 98% in our series.
- 9) After one year of follow up study, there was no recurrence of mucosal or complete rectal prolapse.
- 10) There was no any mortality.

#### 6. Conclusion

Following conclusions can be derived after observing the results of this study:

- Complete rectal prolapse is a disease of younger age group in this part of the world (Jharkhand) as compared to the western population.
- Males showed greater incidence of disease than females in contrast to western population.
- The overall success rate of sutured rectopexy was 98% in terms of relief from presenting symptoms whereas the

success rate observed for prolene mesh rectopexy was approximately 84%.

- The net result for both the procedure of operative management is that operation can be done in short duration with minimal blood loss, shorter hospital stay, lesser morbidity & no mortality and no recurrence.

## 7. Conflict of Interest

There is no conflict of interest.

## 8. Limitation

This was a small randomized study. Further larger randomized study with long duration of follow up are required to get a more conclusive evidence.

## References

- [1] Altemeier WA, Cuthbertson WR, Schwengerdt C and Hunt J. Nineteen years experience with the one stage perineal repair of rectal prolapse. *Annals of Surgery*, 1971;172:993-1006.
- [2] Anderson JR, Wilson BG et al. Complete rectal prolapse- the results of Ivalon-sponge rectopexy. *Postgrad Med. J*, 1984;60:411-414.
- [3] Blatchford GJ, Perry RE, Thorson AG et al. Rectopexy without resection for rectal prolapse. *Am. J. Surg* 1989;158:574.
- [4] Boulos PB, Stryker SJ, Nicholls RJ. The long-term results of polyvinyl alcohol (Ivalon) sponge of rectal prolapse in young patients. *British Journal of Surgery* 1984;71:213-4.
- [5] Jacobs LK, Lin YJ, Orkin BA. The best operation for rectal prolapse. *Surg. Clin. North Am.* 1997 Feb; 77(1):49-70.
- [6] M.Cicconi et al. *G.Chir.* Jan-Feb 2003. Abdominal Wells Rectopexy with patch micromesh PTFE(Goretex)
- [7] The functional and manometric results of 2 surgical methods of posterior abdominal rectopexy . Scaglia M. et al. *Minerva Chir* 1994. PMID 7970034 Italian.
- [8] Surgical management of rectal prolapse. Thandin Kosi E. Madiba et al. *Arch Surg* 2005. PM ID-15655208 Review.
- [9] Surgery for rectal prolapse :Orr Loygue ventral rectopexy with limited dissection prevents postoperative –induced constipation without increasing recurrence. Guillaum Portier M.D., Francisco Lovino M.D, et al. *Disease of the colon and rectum.* 49,1136—1140 (2006)
- [10] Surgical management of rectal prolapse. Marderstein EL et al *Nat Clin Pract Gastroenterology Hepato/* 2007/PMID 17909532.