



A STUDY ON CLINICAL OUTCOMES FOLLOWING ABDOMINAL RECTOPEXY AND DELORME'S PROCEDURE FOR RECTAL PROLAPSE

Surgery

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ABSTRACT

Objective: This study was conducted to evaluate the morbidity, recurrence and other clinical outcomes following Abdominal rectopexy and Delorme's procedure for rectal prolapse at Assam Medical College and Hospital, Dibrugarh. **Materials and Methods:** Seventeen patients presenting with complete rectal prolapse over 1 year, were included in this prospective study. Patients underwent either Abdominal rectopexy or Delorme's procedure after evaluation, based on clinical judgment of experienced surgeons. Patient characteristics, complications, post-operative length of hospitalisation, clinical outcomes and recurrence were assessed. Patients were followed up for a mean duration of 6 months. **Results:** Nine patients underwent Abdominal rectopexy (Posterior mesh rectopexy), eight patients underwent Delorme's procedure. No postoperative mortalities or major complications were noted. Post operative morbidity was 44% in Abdominal rectopexy group and 37% in Delorme's group. Incontinence improved in all four patients who underwent either rectopexy (three) or Delorme's procedure (one) group. Two patients (22%) in rectopexy group reported increase in constipation post operatively and one patient had increase in constipation post operatively (11%). No patient had new onset constipation in Delorme group. There was one recurrence in Delorme's procedure group with no recurrences in Abdominal rectopexy group. **Conclusion:** The treatment of rectal prolapse should be individualized to achieve best results. Abdominal rectopexy can be safely applied in most of patients with minimal post operative increase in constipation and recurrence by using posterior mesh rectopexy technique. Delorme's procedure can be performed with minimal morbidity and shorter hospital stay and good functional results with acceptable recurrence rate. Delorme's can be considered as an alternative to rectopexy not only in patients unfit for laparotomy but also in individuals with a short prolapse, avoiding a laparotomy.

KEYWORDS

Abdominal rectopexy, Delorme procedure, Rectal prolapse

INTRODUCTION

Rectal prolapse (procidentia) is the protrusion of full thickness rectal wall through the anal canal. It is a relatively rare condition. Although rectal prolapse was described in Ebers Papyrus in 1500 BC, the etiopathogenesis remains an enigma [1]. Proposed etiologies include pregnancy, perineal nerve injury, chronic constipation straining, neurologic and psychiatric disorders, and other conditions resulting in increased intra-abdominal pressure [2,3]. Many theories were proposed to explain the pathogenesis of this disease. The most accepted theories include the one proposed by Moschowits [4] in which he suggested that the anterior rectal wall herniates through the defect in the pelvic fascia. This theory was challenged by Broden and Snellman [5], who demonstrated with the aid of cine defecography, that rectal prolapse is a circumferential intussusception of the rectum through the anus. This theory is widely accepted as 50% normal individuals have intussusceptions as demonstrated by Shorvon et al., [6] by cine defecography. Over a 100 surgical procedures have been described in literature. These procedures can be categorised into abdominal and perineal procedures[7]. In general, perineal surgical repairs cause less morbidity and mortality, but are attributed to have greater recurrences when compared with abdominal operations. They are considered especially in the elderly and/or high-risk patients as they can also be done under regional anaesthesia. Abdominal procedures are preferred for all patients fit for abdominal surgeries and is the most commonly performed procedure [8]. This study was conducted to evaluate the clinical outcomes following Abdominal rectopexy and Delorme's procedure for rectal prolapse at our hospital.

METHODOLOGY

Aims and Objectives

To evaluate the morbidity, recurrence and other clinical outcomes following Abdominal rectopexy and Delorme's procedure for rectal prolapse at Assam Medical College and Hospital, Dibrugarh.

This prospective, observational study was conducted after approval by Institutional Ethics Committee. Study was conducted between August 2020 and July 2021. Patients presenting with mass per rectum were evaluated and diagnosed clinically as having rectal prolapse were included in study.

Inclusion Criteria

1. Full-thickness rectal prolapse, externally visible on straining.
2. Patient has given written informed consent.

3. Aged 18 years or older.

Exclusion Criteria

1. Recurrence of full-thickness rectal prolapse.
2. Patient who underwent resection with rectopexy.
3. Patient with stoma.
4. Patient with inflammatory bowel disease.
5. Patient currently under chemotherapy.

History was noted including detailed history of bowel habits. Incontinence was graded using Browning and Park's grading. Constipation was defined using Rome III criteria.

Base line blood investigations and sigmoidoscopy were performed.

Patients underwent Abdominal rectopexy or Delorme's procedure after evaluation, based on clinical judgment of experienced surgeons. Patients with longer prolapse (more than 10 cm) fit for general anaesthesia underwent abdominal rectopexy. Patients with high risk to tolerate major surgery, patients with short prolapse (less than 10 cm) underwent Delorme's procedure. One Female patient with associated utero-vaginal prolapse underwent a simultaneous vaginal hysterectomy with pelvic floor repair and Delorme's. All procedures were performed by senior surgeons experienced in colorectal surgery. Bowel was prepared the day before surgery using a balanced polyethylene-glycol solution, and antimicrobial prophylaxis was given just before surgery.

Surgical Technique

Posterior Mesh Rectopexy: The patient was placed in the Lloyd Davies position, and a urinary catheter inserted. The rectum is mobilised to the pelvic floor posteriorly, preserving nerves and ureters. Lateral ligaments were preserved in all patients. A monofilament knitted polypropylene mesh was placed in presacral space and was anchored to the sacral promontory with three 2-0 prolene sutures at three points, after mobilization of rectum. The mesh encircled three-fourth the circumference of the rectum and was fixed to rectum with seromuscular sutures with 2-0 prolene.

Delorme's Procedure: Patient was placed in lithotomy position and catheterised. Prolapse was exteriorised and held with grasping forceps, solution of adrenaline saline (1 in 200,000 or 300,000) injected submucosally just beyond the dentate line. Diathermy dissection was

used to strip mucosa from the underlying muscularis propria. This process was continued circumferentially to the apex of the prolapse and then inside as far as possible. The muscle wall was imbricated with a series of radial absorbable sutures. The two cut ends of mucosa were sutured together with interrupted absorbable sutures.

Clinical outcomes in form of primary and secondary outcomes were assessed.

Outcome Measures

Primary outcome measure was recurrence of full thickness rectal prolapse which is clinically the most relevant measure.

Recurrence was defined as the circular protrusion of rectal mucosa through the anal canal and was evaluated by history, clinical examination including examination of patients while performing a straining manoeuvre in a sitting position.

Secondary outcomes are morbidity, mortality, length of initial hospital stay, constipation, and faecal incontinence.

Morbidity occurring during the primary hospital stay was further differentiated into surgical and non-surgical complications.

Surgical Complications

1. Post-operative ileus
2. Post-operative haemorrhage
3. Intra-abdominal abscess
4. Surgical site infection
5. Urinary disturbances
6. Erectile dysfunction

Non-surgical Complications

1. Deep vein thrombosis
2. Pulmonary embolism
3. Post-operative pulmonary infection
4. Renal failure

Follow Up Patients were followed up at 1, 3, 6, 12 months and outcomes were assessed. The mean duration of follow up was 6 months.

RESULTS

Seventeen patients were included in the study of which 11 were female and 6 were male. Male female ratio was 0.54. The average age of presentation for males is 50 years, less than for female for whom average age at presentation is 55 years. The symptoms at presentation include mass per rectum in 17(100%) patients, mucous discharge in 11 (64%), bleeding per rectum in 8 (47%), painful defecation in 12 (70%), incontinence in 4 (23%), constipation in 9 (52%) patients. 2 (11%) patients had solitary rectal ulcer at presentation [Table 1]. Nine patients underwent abdominal rectopexy and eight patients underwent Delorme's procedure. The average duration of hospital stay for rectopexy group was 6.5 days and 5 days for Delorme's. There was no mortality in either group. Morbidity in abdominal rectopexy group was 44% (2 patient had prolonged post-operative ileus, 2 had minor surgical site infection) and in Delorme's was 37% (2 patient had minor surgical site infection and 1 had minor surgical site bleed) [Table 2]. Incontinence improved in all four patients who underwent either rectopexy (three) or Delorme's procedure (one) group. Two patients (22%) in rectopexy group had increase in constipation post-operatively. One patient (11%) developed new onset constipation post-operatively in rectopexy group. There was no new onset constipation or incontinence in delorme's group [Table 4].

Table 1:

Symptom	Number	Percentage
Mass per rectum	17	100%
Mucous discharge	11	65%
Bleeding per rectum	8	47%
Painful defaecation	12	70%
Incontinence	4	23%
Constipation	9	52%
Solitary rectal ulcer	2	35%

Fig 1: Symptoms at presentation

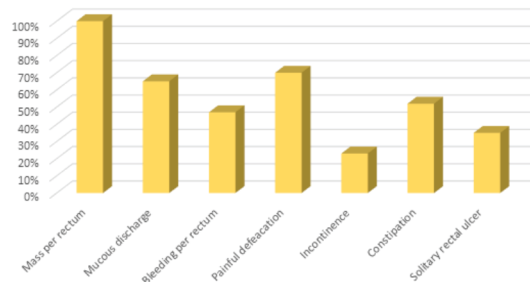


Table 2:

Occurrence Of Complications	Number	Percentage
Morbidity in Abdominal Rectopexy	4	44%
Morbidity in Delorme procedure	3	37%

Fig 2 : Occurrence of complications

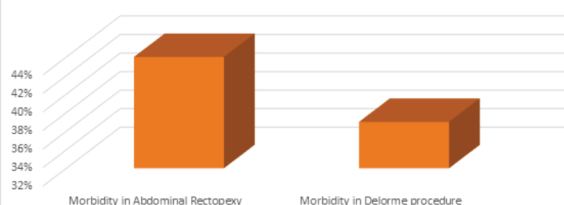


Table 3:

Incidence Of Recurrence	Number	Percentage
Recurrence in Abdominal rectopexy	0	0%
Recurrence in Delorme procedure	1	12%

Fig 3 : Incidence of recurrence

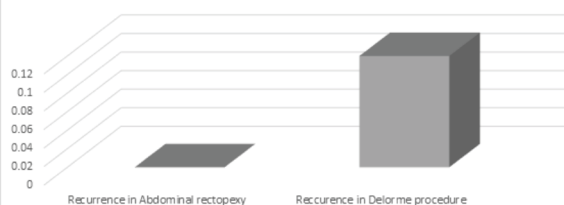
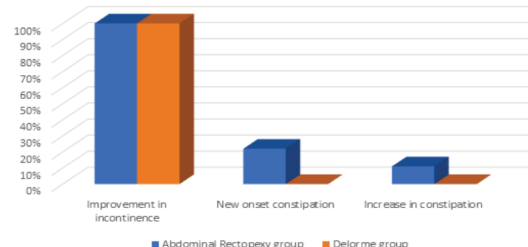


Table 4:

Clinical Outcome	Number		Percentage	
	Abdominal Rectopexy	Delorme	Abdominal Rectopexy	Delorme
Improvement In Incontinence	3	1	100%	100%
New Onset Constipation	2	1	22%	0%
Increase In Constipation	1	0	11%	0%

Fig 4 : Clinical outcome



All patients with constipation could be managed with laxatives. There was 1 recurrence in Delorme's procedure group at 6 month of follow-up [Table 3]. Patient was a 57-year-old female presented with simultaneous utero-vaginal prolapse, underwent Delorme's procedure combined with vaginal hysterectomy and pelvic floor repair, and later underwent abdominal rectopexy. There were no recurrences in rectopexy group.

DISCUSSION

Rectal prolapse is described as the disease of elderly females in western literature [9], but in our study there is slight predominance of female compared to males, with 88%(n=15) of patient below 50 years. This distribution is consistent with previous studies reported from India [10,11]. Posterior mesh rectopexy could be done with no recurrences and no mortality. Morbidity was 44% of which all were minor. Incontinence improved in all 3 patients who had pre-operative incontinence in the rectopexy group. The incidence of new onset constipation is 22% with only 11% of patients developing increase in constipation. These results may be due to the preservation of lateral ligaments preventing denervation of rectum [12] and technique of modified posterior mesh rectopexy in which the mesh encircles only a third of circumference which prevents obstructed defecation. There was no new onset constipation in Delorme's group and incontinence was cured in one patient who was under this group [13]. There was one recurrence in Delorme's group.

General belief is that abdominal procedures have lower recurrence rates [14,15]. The recurrence rates abdominal procedures in various studies reported range between 0% to 12% [12]. The recurrence rates in Delorme's procedure are between 0% to 20% [8,12,16]. This wide variations in reported recurrence rates may be due to different duration of follow-up and patient selection.

The lesser recurrence rates of abdominal rectopexy comes with some complications like new onset constipation, the general hazards of laparatomies, risk of pelvic nerve damage, which may cause sexual dysfunction in men, and adhesion formation. In a study, retrograde ejaculation and impotence were seen in 17.2% of the patients after posterior rectopexy [17]

Delorme's operation is simple, fast and can be carried out under general or regional anaesthesia. The hospital stay is shorter as there is no need to wait for resolution of ileus. New onset constipation is rare as innervation to the rectum is not interfered [8]. Failed Delorme's operation does not compromise subsequent abdominal procedures as was with one of our patients. Rectal stenosis can be a long term complication in patients whom extensive prolapse is repaired by Delorme's procedure.

Traditionally, recurrence rate was the most important factor in determining the procedure. It was believed that recurrence rate was high in patients undergoing Delorme's procedure. However recent trails have failed to demonstrate that one procedure is superior to the other when functional outcome, operational morbidities and overall costs have been considered [12,18].

Senapati et al., [18] conducted a study in which patients were randomized between abdominal and perineal surgeries. This study concluded that there were no significant differences in outcomes of various procedures. Further several prospective and retrospective studies suggest that Delorme's procedure which was earlier reserved for elderly patients can be used in young adults with satisfactory results [19,20]. Hence the role of Delorme's procedure in management of rectal prolapse should be reconsidered and it should be used in appropriate patients.

CONCLUSION

Better outcomes can be achieved when treatment is individualized to each patient with rectal prolapse as demonstrated by our study. Posterior mesh rectopexy can be used in patients who can tolerate laparotomy with predominant symptom of incontinence. It improves incontinence with a minimal risk of increasing constipation. Delorme's procedure should be considered as an alternative to abdominal rectopexy in young patients with shorter prolapse, as complications of abdominal rectopexy like erectile dysfunction and other morbidities of a laparotomy can be avoided with slightly higher risk of recurrence.

Limitations

This is a small non randomized study . Further larger randomized

studies with long duration of follow-up are required to get a conclusive evidence.

Conflicts Of Study: Nil.

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