

## Original Article

# Outcome of Delorme's Procedure for Full-Thickness Rectal Prolapse: Our experience in Bangabandhu Sheikh Mujib Medical University, Dhaka.

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### Abstract:

The study was undertaken to determine the efficacy and safety profile of Delorme's procedure as the treatment for full-thickness rectal prolapse. In this study, outcome of Delorme's procedure for full-thickness rectal prolapse were assessed retrospectively. All the patients who underwent this surgery (22 patients) from July, 2013 to June, 2015 were included in the study. There were 18 males and 4 females with mean age of 37.4 years (range 12-70). The mean operative time was 92.6 minutes (Range 60-180 minutes). There was no mortality and blood loss was minimal. Mean hospital stay was 3.5 days (2-6 days). Outcomes of the procedure were satisfactory and no patient reported recurrence of the disease within the follow up period. Delorme's operation is safe and effective treatment for complete rectal prolapse in patients of all age and sex.

**Key words:** Complete rectal prolapse, Delorme's procedure, Full thickness rectal prolapse, Perineal procedure.

### Introduction:

A full-thickness rectal prolapse is a formidable and debilitating condition that needs surgical management. It can usually be easily diagnosed with a careful history and physical examination. The associated symptoms are tenesmus, incomplete evacuation, obstructed defecation, mucus discharge, bleeding, the need to manually assist in defecation by pushing in the perineum, functional complaints like incontinence, constipation and even diarrhea<sup>1-3</sup>.

Many abdominal and perineal operations have been described for the correction of rectal prolapse. In most of the literature, success rate of abdominal procedures are claimed to be more than the perineal procedures<sup>4-9</sup>. The aim of treatment is to repair the prolapse and to resolve functional problems like incontinence and constipation with a low complication rate, an acceptable mortality rate, and a low recurrence rate<sup>8,9</sup>.

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Delorme's procedure was initially described in 1900 as a technique to correct an overt rectal mucosal prolapse in three young men<sup>5,10</sup>. In transabdominal approaches neurologic complications (including sexual or urologic disturbances) related to extensive dissection within the pelvic region have been reported<sup>11</sup>. This study was performed to investigate the effectiveness of Delorme's procedure and to review the clinical outcomes for patients who underwent that procedure.

### Patients and Methods:

The study was done in Bangabandhu Sheikh Mujib Medical University, Shahbag, Dhaka. This is a multispeciality tertiary level hospital in the capital city of Bangladesh and is the only institute where a separate colorectal surgery unit is running. Twenty Two patients with full-thickness rectal prolapse who were operated on with Delorme's procedure within July, 2013 to June, 2015 were retrospectively analyzed in this study.

After preoperative bowel preparation, under spinal anesthesia, and in lithotomy position, the prolapsed rectum was identified and pulled tightly downward with sponge holding forceps so that the redundant rectal wall was taken into the prolapsed segment. After

injecting 1:100,000 adrenaline in normal saline in the sub mucosal plane, circumferential incision was made 1.5-2 cm proximal to the dentate line. Mucosal dissection from inner layer of muscle fibers was done cephalad till the end of redundant segment. Plication of rectal wall, excision of dissected mucosa, and closure of mucosal defect were done. Injectable prophylactic antibiotic (Ceftriaxone and metronidazole three doses) was given in all patients; then orally continued upto 7th postoperative day. Mild laxatives were given for 2 weeks. Patients were advised not to strain at stool and to use commode for 3 months.

The patients were followed up for recurrence, incontinence, and constipation after 2 weeks, 2 months and then every 6 months postoperatively.



**Figure 1:** prolapsed rectum is being identified and pulled downward with swab holding forceps.



**Figure 2:** Injection of epinephrine solution (1:100,000) into the sub mucosa in patients with a full-thickness rectal prolapse.



**Figure 3:** After giving circumferential incision 1.5-2 cm proximal to the dentate line, mucosa is dissected from inner layer of muscle fibers.



**Figure 4:** Insertion of plicating sutures in the muscular wall of the rectum after dissection of the mucosa from the muscularis layer.



**Figure 5:** Suturing the cut ends of the mucosa together.



**Figure 6:** Outcome following the surgery.

### Results:

There were 18 males and 4 females with male-female ratio 4.5:1 and mean age of 37.4 years (range 12-70). Presenting complaints were something coming down per rectum in 100% cases, mucus discharge & perineal soiling in 53%, per rectal bleeding in 33% and constipation in 20%. The length of the prolapsed rectum was 4 to 12 cm. Mean operating time was 92.6 minutes (Range 60-180 minutes).

There was no mortality. Post operative complications were urinary retention in 5 cases i.e. 22.7% which was transient, hemorrhage in 3 cases i.e. 13.6%, mild anal stricture in 2 cases i.e. 9% and constipation in 1 case (4.5%). All these complications were successfully managed conservatively. Mean hospital stay was 3.5 days (2-6 days). Information on postoperative incontinence was available for 12 patients. 4 (33.3%) patients were completely recovered from incontinence. 5 (41.7%) patient reported improved continence while 2 (16.7%) cases had unchanged incontinence symptoms. Outcomes of the procedure were satisfactory.

### Discussion:

Abdominal procedures for treatment of complete rectal prolapse are presumed to entail better anatomic and functional results than perineal repair. They are prone to correct the loss of sacral attachments of the rectum and deep peritoneal reflection<sup>7</sup>. Concomitant resection provides adequate rectosigmoid shortening. After rectopexy, persistence of incontinence and residual disorders of defecation are the main causes of dissatisfaction. Constipation and difficulties in evacuating the rectal ampulla occur in up to 50% of patients<sup>1</sup>. Division of the lateral ligaments and posterior dissection that lead to partial denervation of the rectum may be responsible. All abdominal procedures have three drawbacks that might account for the functional results: (1) they entail a rectal mobilization with

subsequent changes in motility and sensation and (2) pelvic floor repair is presumably less effective from above than from below (3) neurologic complications (including sexual or urologic disturbances) related to extensive dissection within the pelvic region<sup>3</sup>.

With regard to correction of the prolapse, a significant improvement has been demonstrated by the present operation. Many series of Delorme's procedure reported a variable recurrence rate of 0-32%<sup>3</sup>. This may be related to the length of follow-up along with variations in case mix and patient selection. Factors associated with failure for Delorme's procedure include proximal procidentia with retrosacral separation on defecography, fecal incontinence, chronic diarrhea, and major perineal descent (9 cm on straining). In the absence of these factors, Delorme's procedure provided a satisfactory and durable outcome.

Delorme's procedure has two theoretic advantages: it avoids the hazards of anastomosis, and respects autonomic innervation of genito-urinary system. It has an additional advantage of excision of a concomitant rectal ulcer with concomitant improvement of associated bleeding and urgency.

Anastomotic stricture is related to mucosal excision excessive in length<sup>3,4</sup>. Stenosis is currently avoided by limited mucosal stripping not exceeding the apex of the prolapse. Two (16.7%) of our cases had unchanged incontinence symptoms. Pescatori et al<sup>12</sup>. combined Delorme's procedure with sphincteroplasty in 33 patients, with good results achieved in 79% of patients. Continence was improved in 70%, and constipation was cured in 44%. They concluded that Delorme's procedure combined with sphincteroplasty seemed indicated when both clinical and physiological findings showed a concomitant severe pelvic floor dysfunction. However, many other series without sphincteroplasty have shown improvement in continence.

Delorme's operation showed reported mortality rates of 0-4%<sup>3</sup>. Though in our study, there was no mortality. Delorme's procedure represents a surgical alternative for patients with prolapse who may be unable to tolerate a more extensive operation, such as the elderly frail patients, and those who are medically unfit for major surgery.

Results of recent studies are consistent with previously published experiences that most preoperative evacuatory symptoms resolve with repair of the prolapse, and serious complications are uncommon. The observation that recurrence and complication rates may be lower in younger, medically fit patients suggests Delorme's repair need not be restricted specifically to older, medically unfit patients.

Because of low incidence of postoperative constipation and significant improvement in rectal sensation and compliance, we believe that Delorme's operation, coupled with avoidance of abdominal procedures, is the treatment of choice in elderly frail patients and in patients with defecatory disorders. It is also suitable for young patients as it avoids extensive dissection within pelvic region and thus avoids neurological complications including sexual and urological disturbances. Recurrence can be successfully treated with repeated Delorme's operation<sup>4</sup>.

### Conclusion:

The most appropriate surgical procedure in the treatment of complete rectal prolapse is a matter of controversy. The surgeon should balance the related hazards and advantages in selecting the procedure. Our results indicate the efficacy of Delorme's procedure and its significantly better functional outcome and recurrence rate among young patients. With its minor complication, acceptable recurrence rate and good functional results, we believe that Delorme's procedure should be considered as the first choice for all patients, particularly young adults, presenting with complete rectal prolapse.

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