

Laparoscopic Rectopexy for Complete Rectal Prolapse

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ABSTRACT

Both perineal operations and abdominal operations have been used for permanent cure of rectal prolapse. Abdominal operations are more invasive but have a lower rate of recurrence. Recently, less invasive laparoscopic surgery has been used to treat rectal prolapse. We performed laparoscopic surgery with a modified procedure in 6 patients with complete rectal prolapse who had psychosis or were elderly. The duration of surgery averaged 3 hours 23 minutes, and no patients had early postoperative complications such as bleeding. No late postoperative complications, such as recurrence and stenosis, had occurred after 6 months to 3 years of follow-up. Fecal incontinence and desire to evacuate the bowels improved after surgery in 83% of patients, but constipation improved in only one patient. Laxatives were needed to control the dyschezia in other patients. Our modified surgical technique is appropriate for patients with intercurrent psychosis and elderly patients who can tolerate general anesthesia because it requires a relatively short operation time, is associated with a low rate of recurrence, and enables oral intake and ambulation to be started soon after surgery.

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Key words : rectal prolapse, laparoscopic rectopexy, psychosis

INTRODUCTION

Several surgical procedures for permanent cure of rectal prolapse have been described. The procedure used should be selected on the basis of such factors as the severity of rectal prolapse, the presence of complications, and patient age, because procedures differ considerably in terms of postoperative course and recurrence rate. Both perineal operations and abdominal operations have been described. Abdominal operations are more invasive but have a lower rate of recurrence¹. The Frykman-Goldberg method (with involving enterectomy) of proctopexy^{2,3}, which is often used in Europe and the United States, this method more invasive than Ripstein method (without involving enterectomy). Recently, laparoscopic sur-

gery has been used to treat rectal prolapse because it is less invasive and has been shown to be useful^{4,5}. So the modified Ripstein method with laparoscopy involves the use of a mesh sling without enterectomy⁵, has yielded good results while being less invasive.

In the present study, we reviewed surgical outcomes of our modified method of laparoscopic surgery in 6 patients with complete rectal prolapse who had psychosis or were elderly.

INDICATIONS

We always perform surgical correction for patients with complete rectal prolapse regardless of age or previous laparotomy if the patient can tolerate general anesthesia.

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SURGICAL TECHNIQUE

1. Position: The patient is initially placed in the lithotomy position, then, after the first trocar is inserted, is placed in the head-down position. When the rectum is mobilized, the patient is turned bilaterally to a slight extent.

2. Trocar insertion site (Fig. 1) and securing the surgical field: A 10- to 12-mm-diameter laparoscopic trocar is inserted through the upper or lower umbilical region, depending on the patient's physique, to examine the abdominal cavity. Then, a second 10- to 12-mm-diameter trocar is inserted for the right side of the abdominal cavity and a 5-mm-diameter trocar is inserted for the left side of the abdominal cavity. In female patients in whom the prolapsed uterus obstructs these manipulations, a straight needle (with #2-0 or thicker nylon or Prolene) is inserted in the midline just above the suprapubic margin to pierce the corpus uteri. The abdominal wall is then transfixed from within the abdominal cavity, and the needle is drawn externally from the abdominal cavity to lift the uterus and secure the surgical field (Fig. 2).

3. Separation of the rectum: Incisions in the mesorectum are made on both sides of the rectum

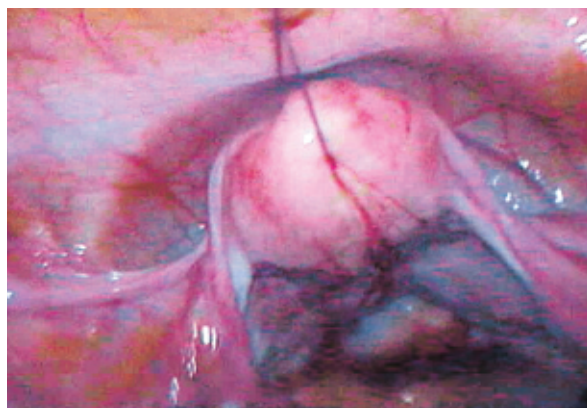


Fig. 2. To lift the uterus for securing the surgical field.

with care to avoid injury to the hypogastric nerve, and the posterior wall of the rectum is freed from the anterior aspect of the sacrum. This rectal separation is performed to the sacral promontory rostrad and to the region of peritoneal reflection anally. A 5-mm-diameter trocar is then inserted through the wall of the left lower quadrant, followed by insertion of a Nelaton tube, which is passed into the mesorectum so that the rectum can be retracted orally (Fig. 3). The elasticity of the Nelaton tube prevents injury to the intestine by eliminating excessive intestinal traction as well as traction on the rectum when a Teflon mesh

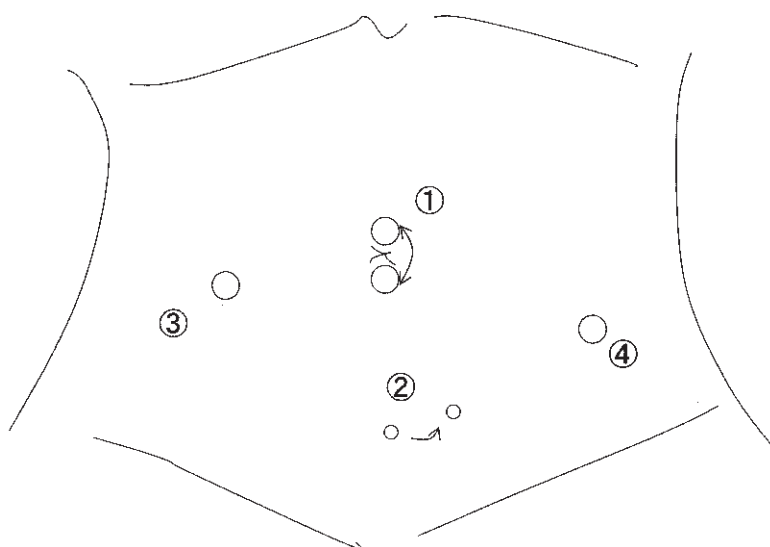


Fig. 1. Schema of trocar placement.

- ① 12-mm-diameter trocar for laparoscope; above or below umbilicus.
- ② 5-mm-diameter trocar for Nelaton catheter; lower median abdomen.
- ③ 12-mm-diameter trocar for harmonic scalpel or other surgical forceps; right abdomen.
- ④ 12-mm-diameter trocar for forceps; left lower abdomen.

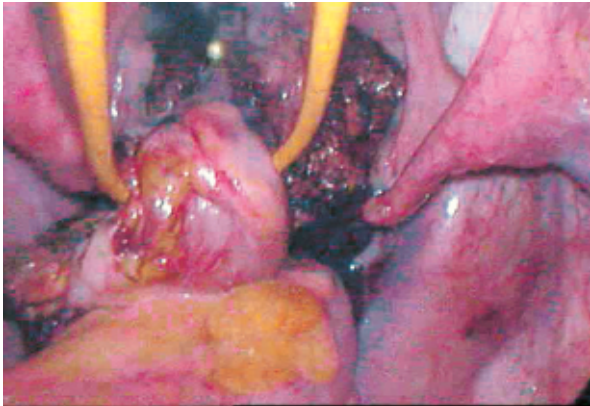


Fig. 3. A Nelaton catheter is passed into the mesorectum so that the rectum can be retracted orally.

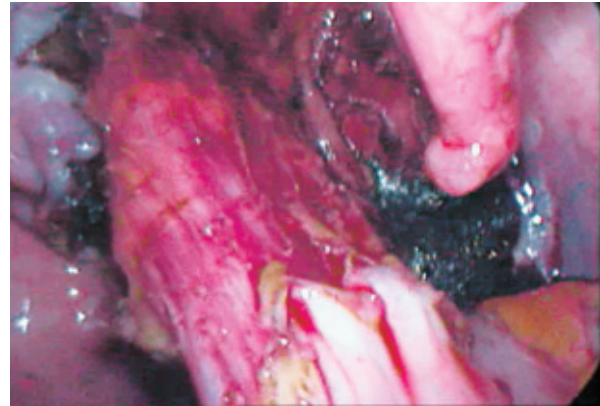


Fig. 4. As the Nelaton catheter is pulled with moderate tension, the anterior wall of the rectum is detached up to the region of posterior aspect of the vagina in female patients.

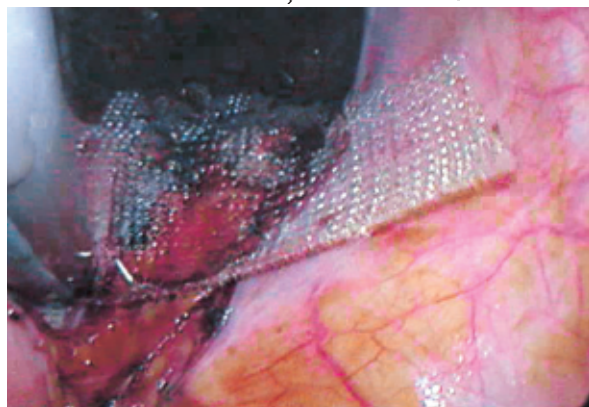
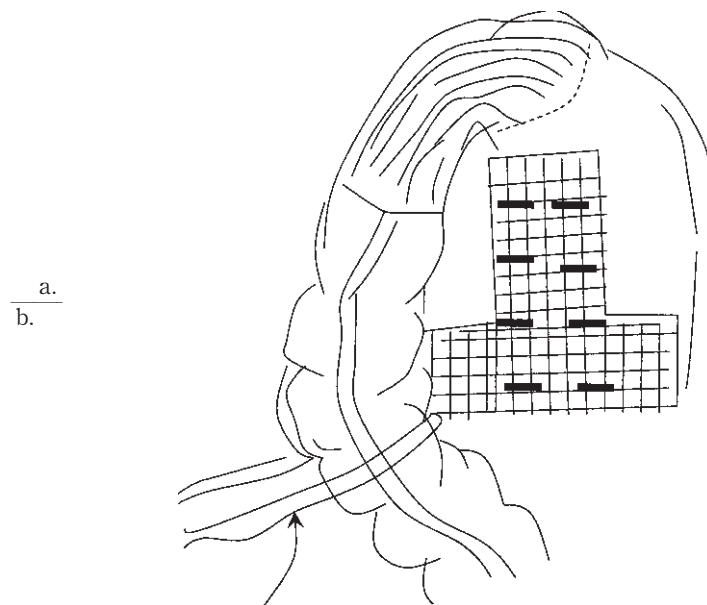


Fig. 5. a. Scheme : a trimmed, T-shaped handle of a mesh sling is anchored with a hernia stapler onto the anterior surface of the sacrum. → : Nelaton catheter
b. This picture shows a T-shaped mesh sling anchored with a hernial stapler onto the anterior surface of the sacrum.

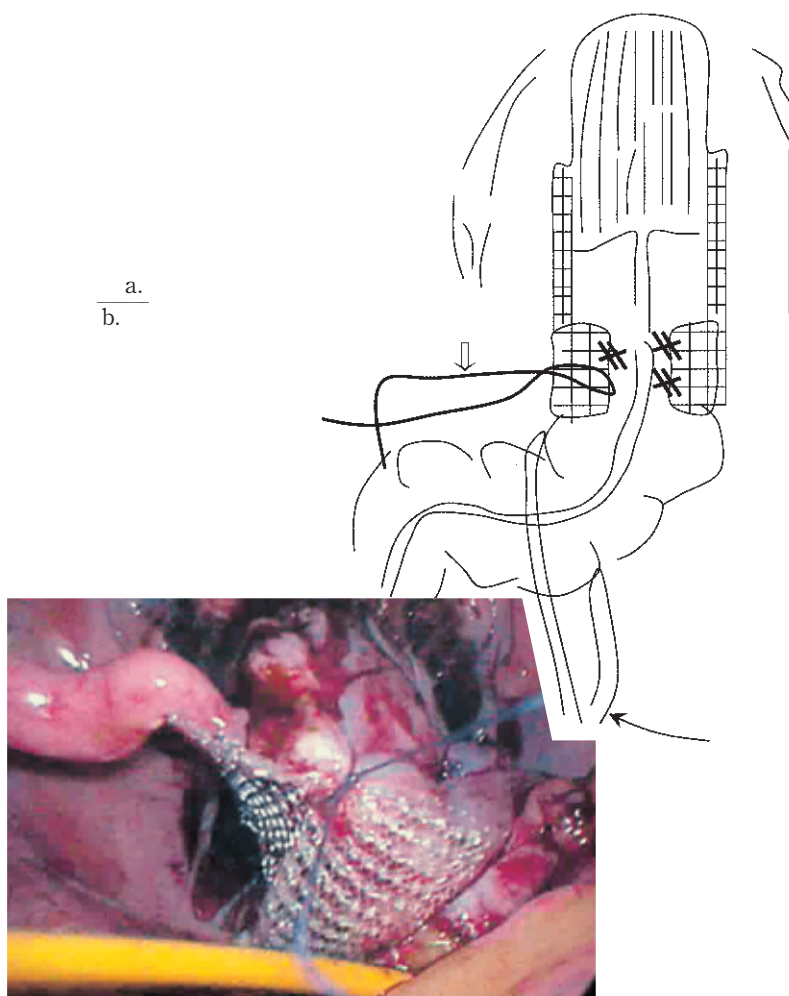


Fig. 6. a. Scheme: the rectum is fully retracted into the abdominal cavity, and the wings of the sling are sutured onto the lateral walls of the rectum with 2-0 absorbable sutures. →: Nelaton catheter, ⇨: 2-0 absorbable sutures
b. The wings of the sling are sutured onto the lateral walls of the rectum with 2-0 absorbable sutures.

sling is fixed. As the Nelaton tube is pulled with moderate tension, the anterior wall of the rectum is detached until the seminal vesicle becomes exposed in male patients or is detached to the region of the posterior aspect of the vagina in female patients (Fig. 4). The posterior wall of the rectum is freed to the sacrorectal ligament.

4. Immobilization of the rectum: A trimmed, T-shaped handle of a mesh sling is anchored with a hernial stapler onto the anterior surface of the sacrum, in the same manner as in the abdominal operation with Ripstein's procedure using a mesh sling (Figs. 5-a and 5-b). The rectum is then fully retracted into the abdominal cavity, and the wings of the

sling are sutured onto the lateral walls of the rectum with 2-0 absorbable sutures (Figs. 6-a and 6-b). To prevent postoperative enterostenosis, the mesh sling is trimmed and sutured at about two thirds of the intestinal circumference, leaving 1 to 2 cm of the rectal anterior wall unsutured to avoid full circumsutures.

5. Closure of the abdomen: After the abdominal cavity is confirmed to be free of hemorrhage, the incised retroperitoneum is closed or adhesion-protective Seprafilm (Genzyme, Cambridge, MA, USA) is applied to the inner surface of the lesser pelvis and mesh sling-sutured areas of the rectum (Fig. 7). Usually, no drainage is performed. To complete the surgery the wound at the insertion site of the 10- to

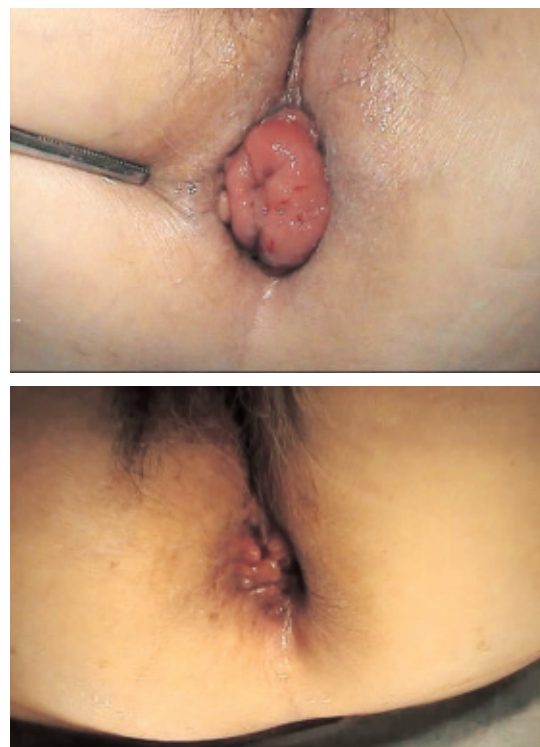


Fig. 7. Adhesion-protective Seprafilm is applied to the inside of the lesser pelvis and mesh sling-sutured areas of the rectum.

12-mm-diameter trocar is closed by placing sutures in two layers in the abdominal wall and the skin; the wounds at the 5-mm-diameter trocar insertion sites and the skin are closed with a skin stapler (anal region: Fig. 8, a, before surgery; b, after surgery).

POSTOPERATIVE MANAGEMENT

Although patients might be able to start ambulation soon after surgery, we always use epidural block for pain control and allow ambulation only after the patient has been confirmed to have intestinal peristalsis and be capable of oral intake, as problems may arise in the postoperative care of elderly patients or patients with intercurrent psychosis. Most patients have dyschezia, such as constipation, since before the surgery, so laxatives are positively prescribed to control bowel evacuation postoperatively.



a.
b.

Fig. 8. a. Anal region before surgery: prolapsed of rectum.
b. Anal region after surgery: resolution of rectal prolapse.

RESULTS AND DISCUSSION

This surgical procedure was performed in 6 patients with complete rectal prolapse who were elderly or had psychosis (Table 1). The duration of surgery averaged 3 hours 23 minutes, and no early postoperative complications, such as bleeding, occurred. Furthermore, no late postoperative complica-

Table 1. Cases of laparoscopic rectopexy for rectal prolapses (Feb. 1999~Oct. 2002)

No	age	sex	Suffering (period)	Complication	Operative (period)	Follow up (period)	outcome
1	74	F	8M	DM	3 h 10 min.	3Y6M	rec. (-), S
2	72	F	13M	none	3 h 55 min.	3Y3M	rec. (-), S
3	62	F	12M	psycho	2 h 10 min.	2Y3M	rec. (-), S
4	59	F	8M	psycho	3 h 45 min.	1Y7M	rec. (-), S
5	86	F	10M	none	2 h 55 min.	1Y1M	rec. (-), S
6	49	F	6M	psycho	2 h 45 min.	3M	rec. (-), S

1 *Y: Year, 2 *M: Month, 3 *h: hour, 4 *min.: minute, 5 *rec.: recurrence, 6 *S: Survive

tions, such as recurrence or stenosis, occurred during follow-up of 6 months to 3 years. Fecal incontinence and desire to evacuate the bowels improved in 83% of the patients, but constipation decreased in only one patient. Dyschezia in other patients was treated with laxatives.

The surgical technique used in our series was a modified Ripstein method (without involving enterotomy) with laparoscopy, which we have been using with some modifications because of its low recurrence rate and earlier postoperative start of oral intake and ambulation.

Laparotomic surgeries are associated with low recurrence rates and are recommended for patients with relatively low surgical risk who can tolerate general anesthesia⁷. However, laparoscopic rectopexy also has a low recurrence rate and enables earlier nasogastric tube removal and oral drug administration. Use of laparoscopic rectopexy would help prevent postoperative complications in patients like those in this study, who are in good general condition but have a psychotic disorder or senility (with consequent difficulty in postoperative management or in performing a second operation) or who require drug administration or ambulation to begin earlier after surgery. Laparoscopic rectopexy may also help reduce the risk of malignant syndromes associated with interruption or reinstitution of psychotropic agents in patients with intercurrent psychoses⁸.

CONCLUSION

Laparoscopic rectopexy was performed in patients with complete rectal prolapse. Our surgical technique is appropriate for patients with intercurrent psychosis and elderly patients who can tolerate general anesthesia because it requires a relatively short operation time, is associated with a low rate of recurrence, and enables oral intake and ambulation to be started soon after surgery.

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