

Original Article

Surgical Management of Complete Rectal Prolapse

Chung-Chi Huang
Hong-Hwa Chen
Shung-Eing Lin
Chia-Lo Chang
Chien-Chang Lu
Wang-Hseng Hu
Ko-Chao Lee

Division of Colon and Rectal Surgery,
Department of Surgery, Chang Gung
Memorial Hospital - Kaohsiung Medical
Center, Chang-Gung University, College of
Medicine, Taiwan.

Key Words

Rectal prolapse;
Rectopexy;
Recurrence.

Purpose. To review our experience in the surgical management of complete rectal prolapse.

Methods. Medical records of 40 patients (16 males, 24 females; mean age 59.6 ± 20.7 years; range 17-86 years) who received surgical treatment of complete rectal prolapse from January 1997 to December 2006 were reviewed retrospectively.

Results. Patients in the abdominal group (n = 28) underwent recto-sigmoidectomy with or without rectopexy, of which eight patients underwent laparoscopic surgery. No postoperative mortality occurred. Major perioperative complications included one anastomotic leakage in both the abdominal group and the perineal group (n = 12). Recurrence rates were 2 of 28 (7.2%) in the abdominal group and 4 of 12 (33.3%) in the perineal group; $p = 0.034$. Only 2 of the latter 4 patients received surgical treatment for the recurrent rectal prolapse (one abdominal procedure and one repeated perineal procedure). The latter patient experienced internal bleeding and was converted to laparotomy.

Conclusions. An abdominal procedure can have a significantly lower recurrence rate than the perineal procedure, and so is recommended for younger and healthier patients. The perineal procedure, which has a higher recurrence rate but lower surgical risk, is more suitable for elderly patients or those with higher operative risk.

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Rectal prolapse is a protrusion of the rectum through the anal canal. Precisely how a complete rectal prolapse develops is not thoroughly understood. Possible etiologies include a defect of the pelvic floor, redundant rectosigmoid colon, deep Douglas pouch, gender (female), psychiatric problems and nulliparity.^{1,2} Pathogenesis may involve a sliding hernia or a circumferential intussusception.³ Treatment of rectal prolapse can involve a variety of approaches, based on resection of redundant colonic or rectal walls, repair

of the pelvic defect and fixation of the lateral rectal wall to presacral fascia (rectopexy).^{4,5} Despite the availability of these different techniques, recurrence of complete rectal prolapse after surgery still occurs, and the proper surgical approach for recurrent rectal prolapse remains undetermined.

The objective of the presently reported study was to review our experience in the surgical management of complete rectal prolapse over a recent 10 year period (1997-2006) to more accurately define proper

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Correspondence to: Dr. Hong-Hwa Chen, Division of Colon and Rectal Surgery, Department of Surgery, Chang Gung Memorial Hospital - Kaohsiung Medical Center, No. 123, Ta-Pei Road, Niao-Sung Hsiang, Kaohsiung Hsien 833, Taiwan. Tel: 886-7-731-7123 ext. 8114; Fax: 886-7-731-7123 ext. 8150; E-mail: yang-ming-chi@yahoo.com.tw

procedures.

Methods

Medical records for 40 patients who received surgical treatment for complete rectal prolapse at Chang Gung Memorial Hospital-Kaohsiung Medical Center over the 10 years encompassing January 1997 to December 2006 were reviewed retrospectively. Complete rectal prolapse was defined as full-thickness protrusion of the rectal wall through the anus; patients presenting with only anal mucosal prolapse were excluded. Demographic and clinical data included gender, age, operative procedures, complications, length of hospitalization, follow-up intervals and recurrence.

Patients were classified into a perineal group (n = 12) and an abdominal group (n = 28). The former group received perineal procedures under general or spinal anesthesia in the lithotomy position. The prolapsed rectum was pulled out as much as possible and was resected. The rectum was sutured with absorbed materials. In the abdominal group, 8 patients

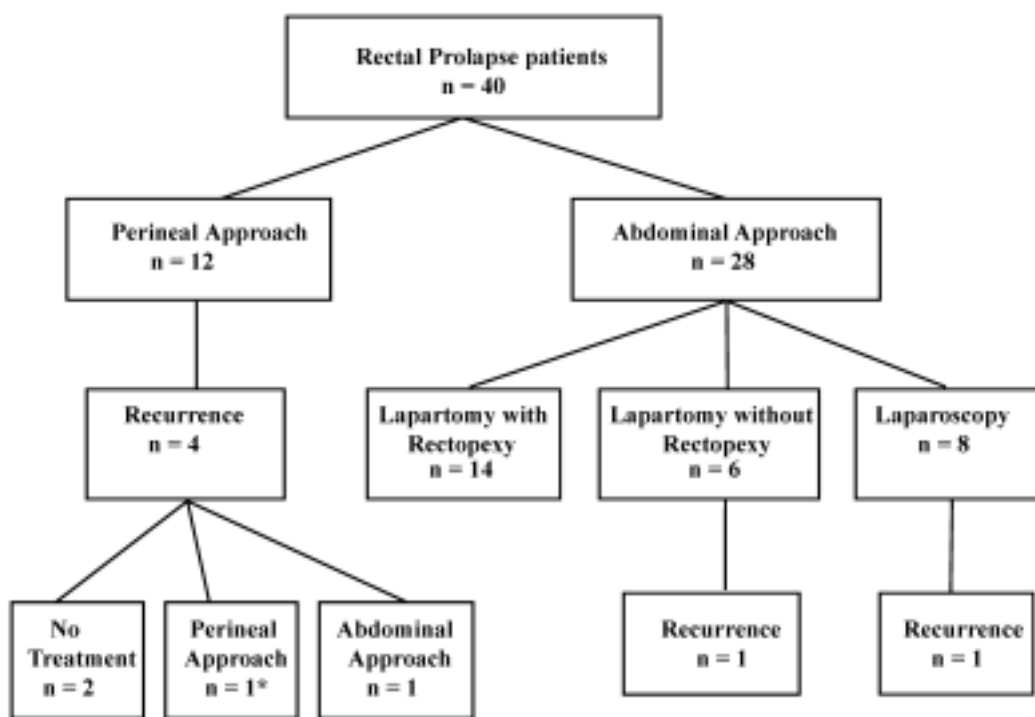
received laparoscopic rectosigmoidectomy without rectopexy, and the remaining 20 patients underwent rectosigmoidectomy under open laparotomy with rectopexy (n = 14) or without rectopexy (n = 6). Anterior resection with or without rectopexy was the standard abdominal procedure for treatment of complete rectal prolapse. The rectum was completely mobilized down to the pelvic floor. No slings or mesh were used for treatment of rectal prolapse. The redundant rectosigmoid colon was resected and anastomy performed to the proper level.

Data was analyzed using the SPSS11.5 statistics software program (SPSS Science, Chicago, Ill). The level of significance was set at $p < 0.05$.

Results

The 40 enrolled patients constituted 16 males and 24 females. The mean age was 59.6 ± 20.7 years (range 17-86 years).

The surgical procedures used to treat complete rectal prolapse are summarized in Fig. 1. There were



* Complicated with internal bleeding

Fig. 1. Patient management and outcome.

12 patients in the perineal group and 28 patients in the abdominal group. In the latter, 8 patients received a laparoscopy and 20 patients underwent bowel resection under open laparotomy either with rectopexy ($n = 14$) or without rectopexy ($n = 6$). No statistically significant differences in age, sex ratio, follow-up interval (mean of 23.5 and 23.3 months for perineal and abdominal groups, respectively), American Association of Anaesthetists (ASA) pre-operative score, and hospital stay were noted between the abdominal and perineal procedures. However, the perineal group tended to be older and had a shorter hospital stay than patients in the abdominal group (Table 1).

Recurrent cases were noted in the abdominal group ($n = 2$; 7.2% of total) and the perineal group ($n = 4$; 33.3% of total). The difference was significant ($p = 0.034$). Only 2 patients in the perineal group were treated surgically for recurrent rectal prolapse; one patient was treated using an abdominal procedure and the other received a repeated perineal procedure. No recurrence was noted after repeated surgery. The other 4 patients with recurrence refused further surgical management.

Anastomotic leakage was noted in one perineal and one abdominal procedure. Three abdominal group patients and 2 perineal patients experienced postoperative constipation (Table 2).

Discussion

The present study retrospective study was undertaken to clarify the treatment of complete rectal prolapse. An ideal surgical procedure remains unclear, if it indeed exists. It may well be that there is no one procedure that is applicable to all patients. In the present analysis, no statistical differences in age and pre-operative vigor were apparent between the perineal and abdominal patient groups. However, the perineal group had a proportionately higher number of more elderly patients and those with a higher ASA score. This may reflect the decision by the surgeon to use the abdominal procedure for younger and relatively healthier patients.

Recurrence rates in the perineal procedure can exceed 10%, versus $< 10\%$ in the abdominal procedure.^{6,7} The present results were comparable. An increasing recurrence rate with increasing follow-up time has been described⁷. This was difficult to address retrospectively in the present study. While we noted no significant difference in recurrence rates, the assessments were made within 2 years post-operatively. Since rectal prolapse was not a malignancy, patients would not come back to our clinic if there were no post-operative complications, and the patients were lost to follow-up.

Table 1. Patient Demographics

Variable	Abdominal Approach (n = 28)	Perineal Approach (n = 12)	p value
Age mean(yr)	57.9 22.1	63.7 17.2	0.565 ^a
Age range	17 ~ 86	18~85	
Male/female ratio	10/18	6/6	0.404 ^a
Mean follow-up(months)	23.5 27.9	23.3 30.8	0.835 ^a
Mean hospital stay (days)	12.6 17.8	10.9 11.9	0.126 ^a
ASA scores 1+2(%)	21 (75%)	8 (66%)	0.827 ^b
ASA scores 3(%)	7 (25%)	4 (33%)	0.687 ^b

ASA scores: American Society of Anesthesiologist physical status classification.

Mean standard deviation. ^a Mann-Whitney U test. ^b Chi-squared test.

Table 2. Complication related to abdominal and perineal procedure

Type of complication	Abdominal group (n = 28)	Perineal group (n = 12)	p value
Anastomotic leakage	1/28 (3.6%)	1/12 (8.3%)	0.527
Constipation	3/28 (10.8%)	2/12 (16.6%)	0.602
Recurrence	2/28 (7.2%)	4/12 (33.3%)	0.034*

All results were analyzed with chi-square test. * $p < 0.05$ was considered statistically significant.

In a previous study, other authors reported that, of the 114 rectal prolapse elderly patients treated by perineal rectosigmoidectomy, 11 suffered a recurrence (9.6%), with 6 of those recurrences not occurring until more than 2 years after surgery.⁷ Our 33.3% recurrence rate after the perineal procedure is markedly higher, but may reflect our lack of experience in the procedure.

Our assessment of whether recopexy influenced the outcome of rectosigmoidectomy did not reveal a statistically significant difference (1 of 6 for rectosigmoidectomy without rectopexy versus 0 of 12 for rectosigmoidectomy with rectopexy). However, the small numbers of patients makes any meaningful evaluation tenuous. However, the present data is consistent with previous studies, which compared a myriad of factors, indicating that rectopexy is not influential to patient outcome.⁸⁻¹¹

Presently, we documented a single instance of recurrence in the 6 patients treated using a rectosigmoidectomy without rectopexy, and no recurrences in the 12 patients treated using rectosigmoidectomy with rectopexy group. While not significant, the small patient numbers precludes any conclusions. However, support for the current findings is provided by a previous review of independently selected studies from the literature, which documented that rectopexy does not influence recurrence.⁹ However, it is conceivable that mobilization of the rectum might play a more important role.^{13,14}

The perineal approach may produce lower anastomotic leakage rate if anastomosis tension could be avoided, and if the anastomotic blood supply is sufficient.¹⁵ Presently, a 68-year-old female patient suffered from anastomotic leakage after perineal procedure. A swollen rectal wall caused by acute incarceration was noted, making the contribution of an inadequate blood supply unlikely.

We have had little experience in the treatment of recurrent rectal prolapse. A previous study reported that 78 recurrent rectal prolapses were more often associated with the perineal approach (n = 51; 37% recurrence rate) than the abdominal approach (n = 27; 15% recurrence rate).¹¹

Laparoscopic abdominal procedures for the treatment of complete rectal prolapse has been used more

frequently in recent years. Compared with laparotomy, laparoscopic procedures have the advantage of nearly the same prognosis, shorter hospital stay and decreased wound pain. In our study, there was no surgical morbidity or mortality. In previous studies, no increase in recurrence rates of laparoscopic approach was reported.^{8,10} However, we had a recurrent case with an 83-year-old female patient after a laparoscopic procedure, although she did not receive a repeated operation.

The perineal approach tends to be reserved for the elderly or the patients with higher operative risk. This technique was also suggested for younger males to preserve their sexual functionality. The latter could not be addressed presently, since we made no effort to compare sexual functionality in the patient groups, and because there were very few young male patients included in our study.

In summary, the abdominal procedure for complete rectal prolapse is the first choice if no severe medical problems are evident. Compared to the perineal approach, the abdominal approach does not increase the chance of complications, and lowers the chance of recurrence. If a patient is at high risk for an abdominal procedure, the perineal approach may be a prudent choice, keeping in mind bowel tension and blood supply to avoid anastomotic dehiscence or other major complications, especially if another perineal procedure becomes necessary. A laparoscopic abdominal procedure can yield the same result with shorter hospital stay and lower wound pain, and so represents another wise choice for the treatment of complete rectal prolapse.

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原 著

直腸脫垂手術治療

黃仲琦 陳鴻華 林尚穎 張家駱 盧建璋 胡萬祥 李克釗

高雄長庚紀念醫院 外科部大腸直腸外科

目的 此篇報告主要是回顧本院直腸脫垂手術治療的經驗。

方法 我們收集從西元 1997 年 1 月到 2006 年 12 月，40 位病患在高雄長庚紀念。

醫院因直腸脫垂接受手術治療，病例記載以回溯性的方式整理。

結果 男性有 16 位而 24 位是女性，平均年齡為 59.6 ± 20.7 (17 歲到 86 歲)，這些病人分成腹部手術組 ($n = 28$) 及會陰部手術組 ($n = 12$)，腹部手術組的病人是接受直腸乙狀結腸切除有或無合併直腸固定術，其中有 8 位是經由腹腔鏡；重大手術併發症，在腹部手術組的病人有一位發生術後吻合滲漏，而經會陰部手術組的病人也有一位；在術後復發率方面，腹部手術組有兩位 (2/28, 7.2%)，而經會陰手術組有 4 位 (4/12, 33.3%)， $p = 0.034$ ；術後發生再發的病人中，只有兩位接受會陰手術復發的病人再次接受手術，一個改接受腹部手術，而另一位則接受再一次經會陰手術，很不幸這位再次接受經會陰手術的病人手術中發生腹內出血的情形。

結論 由本院的經驗來看，經腹部手術來治療直腸脫垂的病人明顯比經會陰的手術有較低的復發率，因此較年輕較健康的病人，我們建議先考慮以經腹部的手術來治療直腸脫垂；而經會陰手術通常適用於年紀較大者或手術風險較高的患者，此手術方式一般較高復發率但是手術風險較低。

關鍵詞 直腸脫腸、直腸固定術、復發。