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THE EFFICIENCY OF ALTEMEIER PROCEDURE FOR THE TREATMENT OF RECTAL PROLAPSE IN GERIATRIC POPULATION

KEY WORDS: Altemeier, rectal prolapse, Wexner score

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ABSTRACT

We aimed to exhibit early results of the patients treated with the Altemeier procedure. A retrospective analysis of the patients who underwent Altemeier procedure was conducted between January 2015 and December 2016. Patient demographics, length of resected bowel segment, length of stay, complications and follow-up periods were recorded. The quality of life assessment at admission and postoperative month 6 were analyzed with Wexner incontinence scoring. Of the patients, 11 were female (73.3%), and 4 were male (26.7%). The median age was 65.7 (59 to 76) years. The preoperative median Wexner score was 13.9 (12 to 16). The median length of the specimen was 31.27 (22 to 42) cm. The median length of stay and follow-up time was 5.73 (2 to 10) days and 6.73 (0 to 12) months respectively. Although anal tonus of the two patients did not change, 13 patients' anal tonus significantly increased at postoperative month 6 as compared to preoperative analysis, moreover 3 of those achieved complete anal tonus. The median Wexner score by postoperative month 6 was 9.13 (6 to 16). A significant decrease of Wexner score was observed in 14 patients. The Altemeier procedure may be performed on appropriate patients with the advantages of being easy applicable under regional anesthesia, providing resection, low recurrence rate, and improvement in continence. It should also be considered as a good option for the patients who do not have the chance of surgery with abdominal approach.

INTRODUCTION

Complete rectal prolapse, which is defined as protrusion of rectum through anal channel, is frequently encountered in geriatric population, and is a significant disease that negatively affects the quality of life with the coexisting incontinence complaints [1]. Most of the patients with rectal prolapse usually complain of protruding mass through anus, wetting, gas and/or fecal incontinence. Since the disease is more common in geriatric population that has habitual comorbidities, the type of procedure for the management of the disease has a vital role [1, 2]. Principally, surgical treatment of rectal prolapse may be classified as abdominal and perineal approaches, another distinction may be the ones with or without resection. In 1889, Miculicz first performed perineal recto-sigmoidectomy, and by 1970s Altemeier popularized this technique, which provides resection trough perineum [3, 4].

In this study, we aimed to exhibit early results of the Altemeier procedure performed on a geriatric patient population.

MATERIALS AND METHODS

After obtaining informed consent of all patients,15 patients who were treated with Altemeier procedure in General Surgery Department were investigated retrospectively between January 2015 and December 2016. Patient demographics, previous medical history, coexisting diseases, physical examination findings, American Association of Anesthesiology (ASA) physical status classification score, type of anesthesia, operative time, length of resected bowel segment, length of stay, complications, and follow-up periods were recorded. Wexner incontinence scoring was utilized for quality of life assessment. Pre-treatment and post-treatment month six Wexner incontinence scores of the patients were considered.

Depending on the patient's availability, control Wexner analysis was conducted with face-to-face interview or with telephone encounters. In order to evaluate intraabdominal additional pathologies, preoperative routine abdominal computed tomography scan and diagnostic colonoscopy was performed on all patients. Same surgical team accomplished all of the operations. Resection of bowel segment was done with ultrasonic vessel sealing device (Harmonic Scalpel , Ethicon) and single layer anastomosis was carried out with interrupted atraumatic 3/0 round needle polyglactin sutures. Patients were fed with parenteral nutrition for 3 days, and enteral nutrition support was achieved by oral intake on postoperative day 4.

RESULTS

In approximately two-year time frame, perineal recto-sigmoidectomy procedures in our department were analyzed. Of the patients, 11 were female (73.3%), and 4 were male (26.7%). The median age of the patients was 65.7 (59 to 76) years. Preoperative ASA physical status classification scores were "3" in 11, and "4" in 4 patients, respectively. Thirteen patients were operated under spinal anesthesia, one patient was operated under epidural anesthesia, and one patient was operated under general anesthesia.

Previous medical history of the patients showed that 5 patients had cerebrovascular accident (CVA), 2 patients were operated for intracranial malignancy, one patient had muscular dystrophy, and one patient had spinal cord injury. For various reasons 11 patients had history of previous abdominal surgery, and of those 4 patients had multiple abdominal operations.

Preoperative diagnostic colonoscopies demonstrated solitary rectal ulcer in 4 patients. On physical examination, anal tonus was absent in 7 patients, and decreased in 8 patients. The preoperative median Wexner score was 13.9 (12 to 16).

The median operative time was 42.8 (32 to 64) minutes. The median length of the resected specimen was 31.27 (22 to 42) cm. The median length of stay was 5.73 (2 to 10) days, and the median follow-up time was 6.73 (0 to 12) months. While 12 patients did not have any postoperative complications, one patient had local bleeding from anastomosis site immediately after surgery, which was controlled with primary suturing under local anesthesia, another patient developed perianal infection on postoperative day 3, which was controlled with antibiotherapy, and healed without any anastomotic problems. However, despite anticoagulant prophylaxis one patient was lost following a sudden myocardial infarction on postoperative day 2.

The evaluation of anal tonus with digital rectal examination demonstrated no change in two patients on postoperative 6 months as compared to preoperative examination. However, 13 patients had significant increase in anal tonus, moreover 3 of those achieved complete anal tonus. The median Wexner score by postoperative month 6 was 9.13 (6 to 16). A significant decrease of Wexner score was observed in 14 patients. Wexner score did not change in one patient, and the patient who was lost during early postoperative period was excluded from Wexner score analysis.

DISCUSSION

Complete or incomplete rectal prolapse may result in serious social and psychological problems, and as it is particularly a geriatric disease this circumstance has the habitual comorbidities of geriatric population [2]. The patients usually complain fecal incontinence due to decreased anal tonus. Since it is a geriatric disorder, existence of incontinence requires close attention and care [1, 2, 5]. As a consequence of long-term presence of the prolapsed bowel outside of the anal channel, additional pathologies may be expected in rectal mucosa, as solitary rectal ulcer was observed in 4 of our patients. Strangulation of bowel is a rare occasion, and we have not encountered this circumstance in any of our patients.

Abdominal and perineal approaches are two principle treatment options of complete rectal prolapse. Most surgeons prefer abdominal approach, and even laparoscopic surgical procedures are currently at the forefront [6-8]. However, when we consider the difficulties of abdominal approach - particularly laparoscopic surgery - under regional anesthesia, ease of performing the procedure under regional anesthesia is an advantage of Altemeier procedure [8, 9]. In our series, while 13 patients were operated under spinal anesthesia, and one under epidural anesthesia, only one patient required general anesthesia following an insufficient spinal anesthesia attempt. Furthermore, even past history of abdominal surgery do not preclude abdominal rectal prolapse surgery, it may complicate, or at least extend the surgery time, evidently. Prolongation of surgery time is another issue in this patient group with a higher operative risk due to elder age, additional diseases, and past surgeries. In our series, the Altemeier procedure of 4 patients with a past history of Thiersch surgery had lasted longer than other patients, and increased the median operative time to 42.8 minutes. When those were excluded the median operative time was approximately 35 minutes.

Another classification of complete rectal prolapse surgery is methods with or without bowel resection [8, 10]. The recurrence risk of transabdominal or transperianeal methods without resection is higher than methods with resection [4, 9]. The Altemeier procedure provides resection without an abdominal incision with the aid of regional anesthesia in such a high-risk group of patients [8]. The median length of resected specimens of our patients was 31.27 cm. When 4 patients were reminded that diagnostic colonoscopy had detected solitary rectal ulcer, this approach with resection also accomplishes such issues. It is also important that this procedure is easily applicable under regional anesthesia, and as these patients are already at high-risk, minimal invasive procedures will reduce the postoperative intensive care unit demand. Although ASA physical status classification scores of our patients were "3" in 11, and "4" in 4, none of them required intensive care unit demand. Furthermore, the exposure provided by perineal resection may offer simultaneous levatorplasty procedure. In order to ensure standardization of the procedure, we did not perform levatorplasty on any patients. However, considering that we have easily mobilized the sigmoid colon up to the recto-sigmoid junction, and easily performed colo-anal anastomosis during the procedures, levatorplasty is a reasonable, and easy applicable procedure.

Perineal approach has lower complication rates as compared to abdominal procedures [5, 11, 12]. Of our patients, one was complicated with bleeding from anastomosis site, which was accomplished by simple local intervention, and one patient developed local infection controlled by antibiotherapy. Unfortunately, we lost one patient following an acute myocardial infarction.

Another advantage of the Altemeier procedure is that anal tonus may increase in time as compared to preoperative period [1, 12]. Neither abdominal recto-sigmoid resection, nor rectopexy procedures offer such results, and procedures like Thiersch usually do not improve incontinence [4]. While any change was observed in 2 of our patients, anal tonus of 13 patients was increased. Wexner incontinence scores of the patients at postoperative month 6 were significantly decreased as compared to preoperative scores.

The lack of anorectal manometry analysis is the limitation of our study. Since we could not make anorectal manometry due to technical reasons, anal tonus evaluation was made with digital rectal examination, and quality of life evaluation was made with Wexner incontinence scoring.

CONCLUSIONS

Several methods have been described for the treatment of complete rectal prolapse with either abdominal or perineal approach. The Altemeier procedure may be performed on appropriate patients with the advantages of being easy applicable under regional anesthesia, providing resection, low recurrence rate, and improvement in continence. It should also be considered as a good option for the patients who do not have the chance of surgery with abdominal approach. In order to support our results regarding recurrence, and continence status of the patients, longer follow-up period is required.

REFERENCES:

1. Cirocco WC. The Altemeier procedure for rectal prolapse: an operation for all ages. Dis Colon Rectum. 2010; 53:1618-23.
2. Gopal KA, Amshel AL, Shonberg IL, Eftaiha M. Rectal procidentia in elderly and debilitated patients. Experience with the Altemeier procedure. Dis Colon Rectum. 1984; 27:376-81.
3. Cernuda RB, Angel JP, Fernandez NT, Sanchez-Farpon JH, Perez JA. Perineal Rectosigmoidectomy (Altemeier Procedure) as Treatment of Strangulated Rectal Prolapse. J Gastrointest Surg. 2016; 20:2102-3.
4. Cirocco WC. Explaining the undulating outcomes of perineal rectosigmoidectomy (Altemeier Procedure) for rectal prolapse over the last century: technique matters! Tech Coloproctol. 2014; 18:979-80.
5. Bhandari RS, Lakhey PJ. Altemeier rectosigmoidectomy for strangulated rectal prolapse. J Nepal Health Res Counc. 2011; 9:189-91.
6. Gravante G, Venditti D. The Altemeier procedure: new technologies for an old technique. Dis Colon Rectum. 2006; 49:1801-2.
7. La Greca G, Sofia M, Primo S, Randazzo V, Lombardo R, Russello D. Laparoscopic implementation of the Altemeier procedure for recurrent rectal prolapse. Technical note. Int J Surg Case Rep. 2014; 5:347-9.
8. Elagili F, Gurland B, Liu X, Church J, Ozuner G. Comparing perineal repairs for rectal prolapse: Delorme versus Altemeier. Tech Coloproctol. 2015; 19:521-5.
9. Carditello A, Milone A, Stilo F, Mollo F, Basile M. [Surgical treatment of rectal prolapse with transanal resection according to Altemeier. Experience and results]. Chir Ital. 2003; 55:687-92.
10. Regenet N, De Kerviler B, Lehur PA. [Perineal rectosigmoid resection for exterior rectal prolapse (Altemeier operation)]. J Chir (Paris). 2001; 138:153-6.
11. Ben Ameur H, Rejab H, Beyrouti MI. Altemeier operation for recurred and strangulated rectal prolapse. Indian J Surg. 2013; 75:224-6.
12. İbrahim Tayfun Şahiner Murat Kendirci. Perineal Approach in Rectal Prolapse Surgery: Reliability of the Altemeier Procedure. Turk J Colorectal Dis. 2017; 27:84-8.