Is it Sufficient to Apply Only Presacral Mesh in Rectal Prolapse? Our Single-Center Experience

Rektal Prolapsusta Sadece Presakral Mesh Uygulanması Yeterli Midir? Tek Merkez Deneyimimiz

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ABSTRACT

Objectives: Rectal prolapse is still a disease that causes social problems with an unknown etiology. In our study, we aimed to compare the results of the presacral mesh application and perineal surgical procedures performed in our clinic and to determine the effectiveness of the methods.

Methods: Between 2014 and 2020, perineal surgery was performed only in patients with rectal prolapse with high comorbidity, and presacral mesh without resection was applied to those with low comorbidity. In the preoperative and postoperative follow-up, the symptoms of the patients were standardized and compared according to Rome II and Boutsis Ellis criteria.

Results: The results of 20 patients who underwent abdominal (n=15) and perineal procedures (n=5) due to rectal prolapse were retrospectively evaluated. There was a statistically significant difference between the two groups between age (p=0.041), American Society of Anesthesiology score (p=0.000), and type of anesthesia applied (p=0.016). In the abdominal group, the complaint of constipation was found to be statistically significantly different in the preoperative and postoperative evaluations (p=0.000). There was no significant difference in the perineal group (p=0.151). Incontinence complaints were significantly decreased postoperatively in the abdominal group (p= 0.000), while there was no significant difference in the number of patients whose symptoms continued in the perineal group despite the decrease in the stages of symptoms (p=0.07).

Conclusion: Presacral mesh application alone is an effective minimally invasive method that can be applied with a low risk of complications in patients with rectal prolapse.

Keywords: Constipation; incontinence; presacral rectopexy; rectal prolapse.

ÖZET

Amaç: Rektal prolapsus hala etyolojisi belli olmayan sosyal problemlere sebep olan bir hastalıktır. Çalışmamızda kliniğimizde uyguladığımız presakral mesh uygulaması ve perineal cerrahi prosedürlerinin sonuçlarını karşılaştırıp yöntemlerin etkinliğini tesbit etmeyi hedefledik.

Yöntem: 2014-2020 tarihleri arasında sadece rektal prolapsusu olan hastalarda komorbiditesi yüksek olanlara perineal cerrahi, komorbiditesi düşük olanlara ise rezeksiyonsuz presakral mesh uygulaması yapıldı. Ameliyat öncesi ve sonrası takiplerinde hastaların semptomları Roma II ve Boutsis Ellis kriterlerine göre standartize edilip karşılaştırıldı.

Bulgular: Rektal prolapsus nedeniyle abdominal (n=15) ve perineal prosedür uygulanan (n=5) toplam 20 hastanın sonuçları retrospektif olarak değerlendirildi. İki grup arasında yaş (p=0,041), ASA (American Society of Anesthesiology) skoru (p=0,000), uygulanan anestezi tipi (p=0,016) arasında istatistiksel olarak anlamlı fark mevcuttu. Abdominal grupta kabızlık şikayeti ameliyat öncesi ve sonrası yapılan değerlendirmede istatistiksel olarak anlamlı farklı bulundu (p=0,000). Perineal grupta ise anlamlı fark saptanmadı (p=0,151). İnkontinans şikayeti ise abdominal grupta ameliyat sonrası istatistiksel olarak anlamlı ölçüde azalırken (p=0,000), perineal grupta semptomların evrelerinde azalma olmasına rağmen semptomu devam eden hasta sayısında anlamlı fark görülmedi (p=0,07).

Sonuç: Sadece presakral mesh uygulaması rektal prolapsuslu hastalarda düşük komplikasyon riskiyle uygulanabilecek etkili bir minimal invaziv yöntemdir.

Anahtar sözcükler: Rektal prolapsus, kabızlık, inkontinans, presakral rektopeksi

Rectal prolapse was first described by Caddy in 1890.[1] With the increasing experience about the disease, its definition was made as all layers of the rectum emerged from the anus.[2] It is a clinical picture that usually progresses with constipation and incontinence and causes serious social and medical problems. Although many reasons are blamed in its etiology, the actual etiological cause and the most ideal treatment method are still controversial.[3] Various hypotheses have been proposed regarding the etiology of rectal prolapse. Among these hypotheses; longer than normal sigmoid colon, lateral ligament relaxation and accompanying muscular atony, mobile mesorectum, and pudendal nerve damage due to pelvic floor changes are only a few.[4] Although it is seen at a rate of approximately 0.5% in the society, it is seen 6 times more in women over the age of 50 compared to men. Although multiparity is blamed for this situation, it should be kept in mind that 1/3 of female patients are nulliparous.[5] Interestingly, there is a frequency of autism or psychiatric medication use in younger patients in both genders. Although rectal prolapse is a benign condition, it can be debilitating because of the discomfort of prolapsing tissue both internally and externally, associated drainage of mucus or blood, and the common occurrence of concomitant symptoms of fecal incontinence, constipation, or both.[6] More than 300 methods have been applied for the surgical treatment of rectal prolapse. The choice of surgical method to be applied is generally made in line with the experience and preference of the surgeon, taking into account the patient's age, physical condition, accompanying pelvic floor disorders, degree of incontinence, and constipation history.[7]

In our study, we aimed to report on the presacral mesh application, which is our first choice in patients with good condition, and the results of perineal surgery performed in patients with poor condition.

Methods

The data of 20 patients who were operated with the diagnosis of rectal prolapse in the Gastroenterology Surgery Clinic of Antalya Training and Research Hospital between 2014 and 2020 were retrospectively evaluated. Patients with complete pelvic relaxation were excluded. Patients' gender, age, American Society of Anesthesiology (ASA) scores, symptoms, frequency of symptoms, fertility history in women, preferred type of surgery, length of hospital

Table 1. Rectal Prolapse Altemeier et al. according to the recipe
Stage 1 mucosal prolapse
Stage 2 intussusception of the rectum or rectosigmoid junction
Stage 3 true rectal prolapse

Table 2. Boutsis-Ellis scoring for fecal incontinence
Stage I: Normal control, rarely wetting with mucus
Stage II: Impaired gas control, often wetting with mucus
Stage IIIa: Frequent loss of control, wetting with feces in cases such as diarrhea
Stage IIIb: Wetting with stool, total loss of control

Table 3. Rome II criteria for constipation
Presence of two or more of the following for at least 12 weeks in the last 12 months;
1. Stripping, showing too much effort
2. Lump or hard stool
3. The feeling of incomplete ejaculation
4. The occurrence of anorectal congestion feeling
5. The necessity of defecation with the help of hand and also;
Fewer than three bowel movements a week, inability to have soft bowel movements and the criteria for irritable bowel syndrome in which constipation prevails should be insufficient.

stay, post-operative early and late complications, and recurrence were recorded. Patients who did not attend their follow-ups regularly were reached by phone and their complaints were questioned. The typing of the prolapse of the patients was made according to the description of Altemeier et al.,[8] and all patients were evaluated as stage 3 (Table 1). Incontinence and constipation complaints of all patients were standardized according to Boutsis Ellis criteria (Table 2) and Rome II criteria (Table 3) based on the histories of preoperative and postoperative patients.[3] Preoperative colonoscopy, pelvic computed tomography, or magnetic resonance imaging were performed in all patients. Perineal methods were applied to all patients with elderly and comorbid diseases. Laparoscopic presacral prolene mesh fixation was performed in all patients who underwent abdominal surgery. Surgeons experienced in colorectal surgery performed all operations. A fiber diet was recommended to all patients at discharge and oral laxative was given for 1 month. Preoperative and postoperative complaints of patients who underwent abdominal and perineal surgery were compared, and the effectiveness of the operations were compared.

Surgical Technique

After general anesthesia, a 10 mm vertical incision made under the umbilical. veress needle was placed in the abdomen and pneumoperitoneum was provided with CO_2. As in laparoscopic anterior resection, a 10 mm trocar was placed in the right lower quadrant, a 5 mm trocar in the right upper quadrant, and a 5 mm trocar in the left upper quadrant. The retroperitoneal area was entered from the promontory level and advanced up to 4 cm superiorly. Inferiorly, the holy plan was advanced in the presacral area up to the perineal area. The lateral ligaments were not opened on both sides and the hypogastric plexus was preserved. A prolene mesh was placed in the area opened in the holy plane and the mesh was fixed to the promontory with the aid of a tacker. The peritoneal defect, which was opened at the promontory level, was closed with 3.0 vicriyl suture in a way to allow temporary hanging of the rectum. Colon resection was not performed in any patient, and a drain was not placed in the abdomen.

Statistical Analysis

SPSS 23.0 package program was used for statistical analysis of the data. Categorical measurements were summarized as numbers and percentages, and continuous measurements as mean and standard deviation (median and minimum–maximum where necessary). Chi-square test was also used in comparison of categorical variables. The statistical significance level was taken as 0.05 in all tests.

Results

Twelve (60%) of the patients were female, 8 (40%) were male, and their mean age was 47 (23–77). The most common complaints were rectal prolapse and constipation (according to the Rome 2 constipation stage, a total of 15 patients were stage 1: 1, stage 2: 6, stage 3: 6, stage 4: 1, stage 5: 1). Thirteen (65%) of the patients were ASA 1, 4 (20%) were ASA 3, and 3 (15%) were ASA 2. Nine patients (45%) had various previous surgical history. 8 (66.6%) of 12 female patients had a history of delivery. It was determined that the number of births was at least 2 and at most 7. General anesthesia was applied to 16 (80%) of the patients and regional anesthesia was applied to 4 (20%) of them. Abdominal intervention was performed in 15 (75%) patients and perineal intervention was performed in 5 (25%) patients. While only presacral mesh was applied to all patients who underwent abdominal procedure, the dolerme procedure was performed in the per-

ineal approach. The mean follow-up period of the patients was 126.2 (24–315) weeks. None of the patients needed intensive care, and the average length of stay in the hospital was 3.6 (2–7) days. In the postoperative follow-up, it was learned that constipation complaints decreased in three patients and the intensity of rectal pain in 1 patient decreased but did not disappear. The complaint of sagging did not recur in both abdominal and perineal procedures. Presacral mesh was applied to a patient with a history of recurrence after abdominal suture rectopexy, and no recurrence was detected in their follow-up (Table 4).

Table 4. Demographic and characteristic findings of patients who underwent surgery for rectal prolapse

	n	%
Age, year, median (min.–max.)	47 (23–77)	
Gender		
Female	12	60
Male	8	40
Previous surgery history		
Perineal surgery		
Hemorrhoidectomy	1	5
Perianal condiloma excision	1	5
Abdominal surgery		
Appendectomy	1	5
TAH+BSO	2	10
Cholecystectomy	3	15
Suture rectopexy	1	5
Rome 2 Criteria constipation complaint		
Stage 0	5	25
Stage 1	1	5
Stage 2	6	30
Stage 3	6	30
Stage 4	1	5
Stage 5	1	5
Boutsis-Ellis Incontinence Criteria		
Stage 1	10	50
Stage 2	7	35
Stage 3a	3	15
ASA score		
ASA 1	13	65
ASA 2	3	15
ASA 3	4	20
Complications		
Atelectasis	1	5
Bleeding	1	5
Hospital stay, days, median (min.–max.)	3.6 (2–7)	
Follow-up time, weeks, median (min.–max.)	126.2 (24–315)	

ASA: American Society of Anesthesiology; Min: Minimum; Max: Maximum.

Table 5. Comparison of patients who underwent surgery with abdominal and perineal approaches for rectal prolapse

	Abdominal surgery		Perineal surgery		p
	n	%	n	%	
Age, years, median (min.−max.)	42.1 (23−77)		61.6 (49−77)		0.041
Gender					
Male	5	33.3	2	40	
Female	10	66.7	3	60	
Previous surgery history					0.808
Abdominal	4	80	3	75	
Perineal	1	20	1	25	
ASA score					0.000
ASA 1	13	86.7	0	0	
ASA 2	2	13.3	1	20	
ASA 3	0	0	4	80	
Anesthesia type					0.016
General	15	100	1	20	
Regional	0	0	4	80	
Follow-up time, weeks, median (min.−max.)	118.2 (24−315)		150 (49−267)		0.560
Hospitalization day, days, median (min.−max.)	3.7 (2−7)		3.2 (3−4)		0.380
Postop early complication	1 (Atelectasis)		1 (Bleeding)		

ASA: American Society of Anesthesiology.

Five (33.3%) of the patients who underwent abdominal procedure (n=15) were female and 10 (66.7%) were male. Of the patients who underwent perineal procedure, 2 (40%) were male and 3 (60%) were female. The mean age of the patients who underwent abdominal surgery was 42.1 (23−77), and the mean age of the patients who underwent perineal surgery was 61.6 (49−77), which was statistically significantly different (p=0.041). In the abdominal group, the ASA score of 13 (86.7%) patients was 1, 2 (13.3%) of them were ASA 2. In the perineal group, 1 (20%) patient was ASA 2, 4 (80%) patients were ASA 3, and the ASA scores in the two groups were statistically different (p=0,000). While constipation was not observed in 3 (20%) patients in the abdominal group, 12 (80%) patients had constipation at different stages according to Rome 2 criteria. In the perineal group, 2 (40%) had no constipation, while 3 (60%) patients had constipation. Again, four of the patients in the abdominal group had abdominal surgery and one had a history of perineal surgery. In the perineal group, three patients had abdominal surgery and one had a history of perineal surgery, and there was no statistically significant difference between the two groups (p=0.808). According to the Boutsis-Ellis incontinence assessment criteria, all patients in the abdominal and perineal groups had incontinence at certain stages in the preoperative period. Incontinence continued, although it regressed in 2 (13.3%) of the patients who under-

went abdominal surgery and in 2 (40%) of the patients in the perineal group after the operation. While this situation was statistically significant after abdominal surgery (p=0.000), it did not make a significant difference in the perineal group (p=0.07). The average length of hospital stay in the abdominal group was 3.66 (2−7), and the patients in the perineal group were 3 (3−4) days, and there was no statistically significant difference between them (p=0.38). In early complications, atelectasis was observed in one patient in the abdominal group and postoperative bleeding was observed in one patient in the perineal group. While the mean follow-up period of the patients in the abdominal group was 118.2 (24−315) weeks, this period was 150 (49−267) weeks in the perineal group and was similar (p=0.56). In this process, the complaint of sagging did not recur in any of the patients. When the follow-up symptoms of the groups were evaluated within themselves, constipation was seen in 12 patients before surgery in the abdominal group, while only two patients had regressed postoperative stage and were found to be statistically different (p=0.000). Complaints of constipation were not statistically different before and after surgery in the perineal group (p=0.151). Incontinence complaints were significantly decreased post-operatively in the abdominal group (p=0.000), while there was no significant difference in the number of patients in the perineal group, although their stages were decreased (p=0.07) (Table 5, 6).

Table 6. Comparison of the preoperative and postoperative complaints of the patients

Preop and postop complaints	Abdominal			Perineal		
Rome 2 Constipation Criteria, n (%)	Preop n (%) (n=12)	Postop n (%) (n=2)	p=0.000	Preop n (%) (n=3)	Postop n (%) (n=1)	p=0.151
Stage 1	1 (8.3)	2 (100)		0	1 (100)	
Stage 2	4 (33.4)	0		2 (66.7)	0	
Stage 3	5 (41.7)	0		1 (33.3)	0	
Stage 4	1 (8.3)	0		0	0	
Stage 5	1 (8.3)	0		0	0	
Boutsis-Ellis Criteria incontinence, n (%)	Preop n (%) (n=15)	Postop n (%) (n=2)	p=0.000	Preop n (%) (n=5)	Postop n (%) (n=2)	p=0.070
Stage 1	8 (53.3)	2		2 (40)	1 (50)	
Stage 2	6 (40)	0		1 (20)	1 (50)	
Stage 3a	1 (6.7)	0		2 (40)	0	

Conclusion

Rectal prolapse is a benign disease whose etiology has not been fully clarified, is more common in the elderly female population, and brings social problems with it due to the symptoms it creates.[9,10] Since its etiology is not clear, there is no standard method in its treatment, so many surgical interventions have been defined.[11] With the abdominal presacral mesh application, we applied in our study, we restricted the mobilization of the mesorectum by increasing presacral fibrosis only. We eliminated both the risk of anastomosis and the risk of lateral nerve injury, and we found that patients' symptoms significantly improved during follow-up.

Preoperative colonoscopic and cross-sectional imaging should be performed in all patients and, rarely, masses that will cause prolapse should be ruled out.[12] In our study, we performed intraluminal and extraluminal evaluations in all our patients with pre-operative colonoscopy, computed tomography, or magnetic resonance. We did not encounter any mechanical obstacle that could cause rectal prolapse in any of the patients.

In the meta-analysis conducted by Brazzelli et al.[13] on rectal prolapse, it was found that preserving the lateral ligaments reduced the development of both incontinence and constipation. As Yabanoğlu et al.,[3] who obtained similar results in laparoscopic vental rectopexy studies, we found a decrease in incontinence and constipation complaints in our patients by preserving the lateral ligaments (p=0.000–p=0.000). However, there is a lack of data on genitourinary evaluation and it was found that the patients were not reported as active complaints during their follow-up.

The surgical technique in rectal prolapse is gathered under two main headings (abdominal and perianal approaches). Which of these 2 surgery groups will be preferred is significantly related to the general condition of the patient. Anesthesia risk is tried to be minimized by using regional anesthesia techniques in patients with poor general condition.[14] Resection and rectopexy are recommended for patients with constipation complaints and whose sigmoid colon is determined to be long by the surgeon during surgery.[15] However, there is no definitive evidence to show whether constipation is the cause or the result of the disease. In our study, the fact that constipation was observed in patients with a long sigmoid colon at surgery or in patients without long sigmoid colon supports that constipation is not related to the sigmoid colon length. Our goal in this benign disease is to minimize the social problems caused by this disease by keeping the morbidity to a minimum and to reduce the possibility of recurrence. For this, sigmoid colon resection was not added to the patients, and constipation problems were asked to be minimized with the recommended diet and exercise. When we evaluated the results, although constipation was described in 12 pre-operatively in patients who underwent abdominal surgery according to Rome 2 constipation criteria, this complaint persisted in only two patients post-operatively (p=0.000). It was observed that the severity of both of these patients decreased compared to the pre-surgery. In the abdominal method we used, there was no risk of anastomotic leak and lateral nerve injury, and it was observed that the patient's complaints were statistically significantly reduced (p=0.00–p=0.00).

Although perineal approaches have high recurrence rates, they are preferred especially in patients with high anesthesia risk. In addition, it is recommended for use in young men because of the lower risk of pelvic nerve damage.[16] In our study, perineal approaches were applied to five patients due to their existing comorbidities. No complications developed in the short term in the patients, except for minor bleeding in one patient. Although there was a decrease in the severity of symptoms in the perineal group according to the Rome 2 constipation criteria and the Boutsis-Ellis incontinent criteria in the postoperative period, there was no statistically significant difference in the number of patients with symptoms (p=0.151–p=0.07). We think that the regression of both constipation and incontinence after surgery in the abdominal method, but not statistically significant regression in both of the perineal groups can be explained by the fixation of the mesotectum after presacral fibrosis.

The most important limitations of our study are the rectospective nature, the lack of regular follow-up for a long time in all patients, the unquestioning of urinary and sexual dysfunction in all patients, and the low number of patients. In conclusion, presacral mesh application is an effective minimally invasive surgical method that can be applied with minimal risk of complications in rectal prolapse patients with symptoms such as constipation and incontinence. Gold standard treatment methods will be established by determining the etiology of the disease with stronger evidence. Prospective studies involving more and larger groups are needed for this.

Disclosures

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Conflict of Interest: None declared.

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