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Case report

Management of irreducible giant rectal prolapse: A case report and literature review

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ABSTRACT

Introduction and importance: Rectal prolapse is defined as herniation of mucosa or full-thickness of the rectal wall through the anal canal. It has a negative impact on the quality of life and therefore, it should be treated as soon as diagnosis is confirmed. Definitive treatment is surgical and it depends on the clinical characteristics of the patients. We aimed to present the one of the largest rectal prolapse case in the literature.

Case presentation: A 32- years- old male patient with a history of severe constipation was admitted to our institution with a giant rectal prolapse. The prolapsed segment was incarcerated, and a semi-emergent procedure was performed though a mid-line laparotomy. The sigmoid colon was redundant and therefore sigmoid colon and the upper two thirds of rectum were resected and end to end anastomosis was performed. The patient was discharged postoperative day 7 without any complication.

Clinical discussion: Rectal prolapse has a negative impact on quality of life and should be operated as soon as the diagnosis is reached. The surgical strategy depends on the compliance of the patient as well as the experience of the surgical team.

Conclusion: Clinicians should know that chronic constipation together with other factors may result in rectal prolapse which may become disproportionately large in size.

1. Introduction

Rectal prolapse (RP) is defined as the prolapse of the full thickness rectal or rectosigmoid wall through the anal canal [1–26]. RP can be seen in all age groups; however, it is more frequent in children, females and in patients who are older than 50 years. Reason for increased incidence in children may be due to a defect in the pelvic connective tissue and or the musculature of the sphincter muscle which may be the result of congenital diseases [1]. On the other hand, the factors that increase the RP risk in adults are; age older than 40 years, female gender, multiparity, vaginal delivery, previous pelvic surgery, chronic diarrhea, chronic constipation, cystic fibrosis, dementia, cerebrovascular occlusion, dysfunction of the pelvic musculature (such as paradoxical spasm of the puborectalis muscle and non-relaxing puborectalis muscle) anatomic abnormalities oof the pelvic floor (for example rectocele, cystocele, enterocele, deep cul-de-sac) [1,2]. Its incidence in the adult ranges between 2.5 and 4.2 per 100,000 population [3,4]. Its prevalence in individuals older than 65 years of age is estimated to be 1% [4].

RP is estimated to be about 10 times more frequent in the female than male patients [5]. It has a major impact on the quality of life of the individuals [6]. It can be spontaneous or can be observed when the patient stands still or during Valsalva maneuver during defecation or coughing. The mucosa of the herniating segment of the rectum is usually edematous, ulcerated and fragile. The majority of the RPs' can reduce spontaneously, or the patient can manually reduce the prolapsed segment. In rare occasions, the prolapsed segment of the bowel cannot be reduced and becomes incarcerated. The complications of this event can be severe pain, bleeding, strangulation and even perforation. In the present study, we report a case of giant RP in a young male patient and we discuss our treatment protocol with reference to the current literature.

2. Case presentation

A 32 years old male patient (BMI: 27.7 kg/m^2) was admitted to our institution with the complaints of rectal protrusion during defecation. Direct examination revealed that the patient had giant rectal prolapse. History showed that the patient suffered from severe constipation for a long time and the size of the prolapsed segment had increased in the last

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5 months. The patient stated that there was no such disease or symptoms in his family. Anamnesis showed that, in the initial stages of the disease the bowel could be reduced spontaneously; however, recently, he could only reduce it manually with by applying considerable pressure. Physical examination showed that prolapsed bowel segment was 40 cm in length and a few ulcerations were present in the mucosa (Fig. 1). In rectosigmoidoscopy, 2 polyps were determined at 15 cm from the anal verge. The polyps were removed by snare polypectomy and the colonoscopy was performed until the splenic flexure that showed no luminal pathologies. Pathologic examination of the polyp showed no malignancy. After colon preparation and antibiotic treatment, the patient was operated through midline laparotomy. The sigmoid colon was redundant and the mesorectum was thickened. The sigmoid mesocolon and mesorectum was dissected and mobilized. Sigmoid colon and upper two-thirds of the rectum was resected. Reconstruction was performed by end to end anastomosis without diverting colostomy. He had an uneventful postoperative course and was discharged on postoperative 7th day. The postoperative 6th month follow-up was normal and the patient had no symptoms. The surgical resection specimen was a 30 cm long bowel, 11 cm in the widest part and the mural thickness was 2 cm. Mucosa was flattened and vascular congestion was observed. This case report has been reported in line with the SCARE criteria [27].

3. Discussion

RP is classified in to three clinical subtypes: mucosal invagination, incomplete (partial; internal), and complete (full-thickness; external) [2]. The patients have variety of complaints including a sensation of incomplete evacuation, rectal fulness, perianal pain, and a mucous discharge. About one-third of patients have urinary incontinence; and in female patients, cystocele and uterine prolapse may accompany the clinical presentation. Majority of the patients experience chronic constipation, and they use digitation to assist defecation. Advanced forms of RP cause incontinence with varying severity; the patients need strenuous Valsalva maneuver during defecation and have continuous anal discharge which has a negative impact on the quality of life of the individuals.

RP may be missed during physical examination. The anamnesis should be taken very carefully to show the complaints. The prolapsed segment can be better visualized with the patient erect position and performing a Valsalva maneuver. In the diagnostic work up; anal manometry, trans-anal ultrasonography, defecography, anal electromyography, pudendal nerve terminal motor latency test, colonoscopy and magnetic resonance imaging can be used for diagnosis [8,9]. The anal sphincter can be evaluated using manual inspection during digital rectal examination and anal manometry. Pudental neuropathy can cause weakness in internal and external anal sphincter and cause prolapse. Pudental nerve functions can be evaluated using electromyography. However, these tests rarely have an impact on the operative strategy in the patients. Since patients usually have constipation colonic transit time should be evaluated in the patients. Colonoscopy is required in all patients because polyps, cancer and colitis may be the underlying cause in some patients [1]. In the present study, we could not perform electromyographic tests and physiologic studies because of the need for semi-emergent operation due to incarcerated bowel protrusion. However, we performed colonoscopy and found a polyp which was not malignant. Intraoperative findings showed that the patient had a redundant sigmoid which was the cause of severe constipation which may have cause the giant RP in our patient.

Fig. 1. View of giant rectal prolapse with mucosal ulcers.

The term giant RP has been used in only a few articles in the literature. Looking at the content of this articles, it is seen that the prolapsed segment is equal or larger than 10 cm in most of the cases. Therefore, we also consider it appropriate to define RP larger than 10 cm as giant or huge. Based on that view, we performed a literature search in PubMed/Medline and Google Scholar databases using the key words " giant rectal prolapse" and "huge rectal prolapse". We found that there were 15 cases with a prolapse length greater than 10 cm [16,17,22–27]. The results of the analysis of these studies are presented in Table 1.

The risk factors for RP include redundant sigmoid colon, diameter difference between the sigmoid and rectum, connective tissue diseases, psychiatric disorders, obesity, mobile mesorectum, loose lateral ligaments of mesorectum, presence of a deep Douglas pouch, lax or atonic anal sphincter musculature, pudental neuropathy, insufficient attachment of rectum to the sacral connective tissues, colorectal tumors, and polyps [10–12]. Pudendal nerve damage due to neuropathy, trauma or tumors invading the sacral plexus may also cause RP by weakening the connective tissue and muscular structures of the pelvic diaphragm [12,13].

The reducibility of RP decreases as the size of the herniating sac increases as in the case presented here. Incarceration, strangulation and necrosis are rarely seen [14,15]. Acute incarceration can develop; as well. El Moussaoui and colleagues have reported an acute incarcerated RP in a patient who did not have previous constipation or signs and symptoms of RP; which was the first case in literature [16].

Initial therapeutic approach is to reduce the progression of the disease by administering laxative medication to relieve constipations in the patients. Edema can be reduced using various treatments such as topical application of household sugar (hypertonicity), hyaluronidase injection applying mild compression on the prolapsed segment by various orthosis [17]. The definitive therapy of RP is surgical therapy. Surgical options are reduction of the prolapsed bowel together with obliteration of the Douglas pouch (Moskowitz procedure), fixation of rectum to the sacral periosteum (Ripstein and Wells procedures), sigmoid resection in cases with redundant sigmoid colon together with rectopexy (Frykman-Goldberg procedure). Lahaut's operation is another alternative which involves impalnting redundant sigmoid colon to the posterior rectal sheath [18]. Perineal procedures include mucosal proctectomy and muscular plication (Delorme procedure), resection of the prolapsed rectum and sigmoid through the perineum (Altemeier's procedure), anal cerclage (Thiersch procedure) and Gant procedure [2,19]. Altemeier's procedure can be performed under spinal anesthesia and even in emergency setting. During the emergency operation, diverting loop colostomy/ileostomy is recommended. It is a viable option for both young and elderly patients [20]. Management strategy is chosen according to the presence of multiple factors such as age, gender, incontinence, co-morbidities, prior prolapse repairs, physiologic testing, surgeon's experience, and most important of all, presence of preoperative constipation [5,21]. Procedures through the perineal approach are more conservative. Abdominal approach is more radical and can be performed through a laparotomy or via laparoscopic approach [2,19].

Table 1
Summary of mediacal literature on giant rectal prolapse cases (≥10 cm).

References	Years	Country	Age	Sex	Size (mm)	Treatment	Recur.	Follow-up (mo)
Seenivasagam	2011	India	18	M	150	Wells' procedure	No	12
			40	M	120	Wells' procedure	No	12
			58	M	100	Perineal resection+Ileostomy	No	24
			37	M	450	Reduction	No	6
			60	F	100	Delorme's procedure	No	6
			50	M	200	Sigmoidectomy+Colostomy	No	6
Hassanin	2016	Egypt	35	F	150	NA		
Pandit	2019	Nepal	54	M	100	Altemier	No	24
El Moussaoui	2018	Belgium	26	M	200	Resection and Rectopexy	No	24
Cernuda	2016	Spain	57	M	100	Altemier	No	6
Azpuru	1974	USA	82	F	100	Rectosigmoidectomy	NA	NA
			88	F	110	Rectosigmoidectomy	NA	NA
Akici	2015	Turkey	84	M	100	Altemier	No	6
Yildirim	2001	Turkey	75	F	300	Altemier	No	Died

Perineal approach is the preferred in elderly patients with serious comorbidities. In younger patients with redundant sigmoid colon, constipation or incontinence, an abdominal approach would be more suitable. Our patient was a young male with severe constipation resulting in a giant prolapse and therefore, we chose to operate the patient though an abdominal approach. Laparoscopic approach could have also be an alternative for this patient. However, we planned the operation in an emergency setting and anticipated that the dissection of the mesorectum could have potential difficulties and this resulted in choosing an open approach. On other issue that is worth mentioning is the need for retroperitoneal fixation of remaining colon to prevent recurrence. In our opinion, we have eliminated the redundancy problem with sigmoid resection and also the wound healing process would provide the necessary fixation and prevent recurrence of the prolapse. For these reasons, we have not performed a posterior fixation of the remaining colon.

4. Conclusion

Giant RP is rarely seen in young male patients. It has a negative impact on quality of life and should be operated as soon as the diagnosis is reached. The surgical strategy depends on the compliance of the patient as well as the experience of the surgical team. Chronic constipation is the major underlying etiologic factor underlying RP. Treatment alternatives vary according to the patient characteristics, but definitive therapeutic modality is surgical. In patients whose prolapsed bowel segment cannot be reduced, either perineal or abdominal surgery should be performed quickly to avoid complications.

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Ethical approval

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Consent

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Research registration

According to the previous recommendation, registration is not required for case report.

Guarantor

Akbulut S and Sahin TT are the guarantors for the present study and they take full responsibility for the comments.

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Tuncer A, Akbulut S, Ogut Z and Sahin TT: Reviewed the literature and wrote the manuscript. Akbulut S and Sahin TT: Supervised the writing process and revised the manuscript.

Declaration of competing interest

The authors declared that they have no competing interest with respect to the research, authorship, and/or publication of this article.

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