



Research Article

Complete Rectal Prolapse Associated with Redundant Sigmoid Colon in Young Psychiatric Patients: Anterior Resection of the Rectosigmoid is a Safe and Effective Choice of Operation

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Abstract

Introduction: Complete Rectal Prolapse is a chronic condition affecting older patients, mainly females and more rarely children. The disease is rare in middle aged patients and surgery is the only treatment option.

Goal: To describe a selected and rare group of patients with complete rectal prolapse with redundant colon, psychiatric diseases and severe constipation.

Material and methods: Twelve patients were studied with regards to demographics, past medical history, physical examination findings, surgical treatment and short-term outcomes.

Results: There were 12 patients (7 females, 5 males, and age range 25-39yrs, mean age 32yrs) all of whom had a history of psychiatric disease, constipation and redundant sigmoid colon on endoscopy. The complete rectal prolapse was present less than 6 months. The main characteristics were severe constipation, absence of incontinence and absence of other pelvic floor disorders. All females were nulliparous without a current or past diagnosis of any other pelvic floor prolapse. The redundant sigmoid colon was diagnosed by endoscopy. The surgical treatment applied in all cases was anterior resection of the rectum and the redundant sigmoid colon with an anastomosis in the mid rectum. No rectopexy was performed. There was no formation of any stoma. There were no anastomotic leaks and no major complications. The functional result was good in all cases with subjective improvement of the constipation. Follow up was 6 months (4-14). There were no recurrences of rectal prolapse.

Conclusions: Complete rectal prolapse in young patients with psychiatric disease and redundant colon is a special group that may be unsuitable for rectopexy. The existence of the redundant sigmoid colon, probably participate significantly in chronic preoperative constipation and is a cause of postoperative constipation. We have showed that in patients with similar characteristics one-stage anterior resection of the rectosigmoid is a safe and effective operation.

Keywords: Rectal prolapse; Epidemiology; Surgery; Treatment; Associated factors; Symptoms; Management.

Introduction

The complete rectal prolapse (rectal procidentia or full thickness rectal prolapse) is a condition where the rectum prolapses through the anal canal. The etiology is unclear but several other associated conditions may coexist such as constipation, pelvic floor disorders (diastasis of pubo-rectalis muscles, deep pouch of Douglas, lax lateral ligaments and patulous anal sphincter),

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neurologic disorders, the female gender, lack of fixation or the rectum to sacrum and the presence of a redundant sigmoid colon. Epidemiologic data for the epidemiologic aspects of the complete rectal prolapse [1] show a mean annual incidence of 2.5/100.000 population with a female/male ratio 9:1, the condition affects older ages (mean=69yrs) and the majority of patients present with constipation or anal incontinence and 15% of patients suffer from psychiatric diseases. In another more recent study on the epidemiological trends in surgery for rectal prolapse [2] in an 11-year period, admissions and operations for rectal prolapse were increasing year by year and probably the decision making for surgery has changed over the time in favor of surgical treatment with an increase of laparoscopic operations. A female/male ratio 7:1 was reported with a median age of 73 years. Laparoscopic rectopexy was a popular procedure with favorable outcomes in duration of stay in hospital, low mortality and reoperations rates.

Most patients are women older than 70 years old. In children [3] rectal prolapse is a more rare condition and if they are less than 4yrs old, conservative treatment may be effective, while children older than 4 may require surgical treatment more often. Rectal prolapse is an uncommon condition in middle aged patients. The group of patients with psychiatric disease has not been adequately studied but there are indications [4] that medication-induced constipation is a factor associated with rectal prolapse in this selected group of patients. These patients presented in the previous study redundant colon in 61% (found intraoperatively, corrected by open or laparoscopic surgery) and the most common operation in 48% of patients was a resection-rectopexy procedure. The goal of our study is to present a selected and rare group of young age patients with complete rectal prolapse in psychiatric patients with severe constipation and redundant recto-sigmoid colon. The redundant recto-sigmoid colon was diagnosed preoperatively in all patients. Our decision making for open abdominal surgery with an alternative surgical operation for the resection of the redundant loops and sigmoid colon, and anastomosis in lower pelvis without rectopexy procedure is described, as well as the short term functional outcomes.

Material and Methods

A retrospective study of 12 consecutive psychiatric patients with complete rectal prolapse, redundant recto-sigmoid colon (dolichocolon), and severe constipation. All patients were referred for surgical assessment of the rectal prolapse from the psychiatric department of the hospital. Only patients with complete external rectal prolapse were included. The presence of the prolapse was reported in all cases to be less than six months. All prolapses were extending more than 5 centimeters distally to the dentate line and were considered unsuitable for perineal repair. All patients had

psychiatric diseases and they were under anti-psychotic agents and laxatives for severe constipation. The personal history of the patients was obtained by the patients, medical records and from the first degree relatives of the patients.

Demographics, the physical examination of the patients and symptoms were registered in all patients. A complete colonoscopy was performed in all patients and it reported in all cases a redundant recto-sigmoid colon which made the examination difficult. There were no solitary rectal ulcers. As all the patients had external rectal prolapse defaecography was not deemed necessary. The psychiatric conditions of the patients were considered an obstacle for the performance of anorectal manometry - physiology; however this investigation is not mandatory in external rectal prolapse. The choice of surgery was an abdominal procedure due to the size of the prolapse and the concerns of higher recurrence of the perineal procedures in this particular population of patients. The presence of a redundant sigmoid colon in all twelve cases with an association of severe chronic constipation caused concerns that rectopexy procedures had a high risk of causing additional constipation. Therefore the option of an anterior resection of the rectosigmoid which would incorporate the redundant sigmoid colon and the upper rectum was chosen. An end-to-end double-stapled anastomosis was performed in the mid rectum in all cases. An intraoperative anastomotic fire-test for leak was in all cases negative. No prophylactic stomas were performed. All operations were open surgery (laparotomy).

Results

There were 12 patients (7 females, 5 males, age range 25-37 yrs. mean age 32yrs, 3 patients <30yrs and 9 >30yrs) with psychiatric diseases under treatment with antipsychotic agents and medical treatment for chronic constipation. All patients had external rectal prolapse less than 6 months. All females were nulliparous. All patients had no pelvic operations in their history and no prolapse from the middle and anterior pelvic compartments. The main clinical symptom was the presence of an external full thickness rectal prolapse with associated mucorrhea, chronic constipation on laxatives with no more than 2 bowel movements/week; chronic constipation pre-existed by several years the presence of the complete rectal prolapse. Difficult evacuation with straining, without rectal digitation, was reported by 4 patients.

No patient had incontinence for either flatus or stools. There was mucous secretion at times when the rectal prolapse was exteriorized. The anal sphincter resting and squeeze tones were found normal on clinical examination in all cases. Endoanal ultrasound and anorectal manometry - physiology were not deemed appropriate investigations because of the psychological vulnerability of those particular patients.

There was no history of sigmoid volvulus.

None of the female patients had any urinary symptoms or relevant history.

In physical examination of the perineum the external rectal prolapse was apparent on straining in all patients. All patients had a spontaneous re-entry of the prolapsed rectum in pelvic cavity after evacuation. There was no permanent incarceration or other complications of the external rectal prolapse. The length of the prolapsed rectum was from 5-8 cm from the dentate line. No patulous anus was detected.

The middle pelvic compartment in female's patients (on gynecologic examination) was without findings of middle and anterior compartment prolapse. All patients were ASA Grade I.

A complete colonoscopy was performed in all patients. A redundant sigmoid colon with the loop of the sigmoid extending into the right iliac fossa was found in all cases. There were no solitary rectal ulcers, no diverticulosis and no inflammation. Colonoscopy is necessary in patients [6] with rectal prolapse, in order to exclude neoplastic lesions in the sigmoid colon as they may be the initial cause of the rectal prolapse.

A laparotomy and anterior resection of the recto-sigmoid was performed in all cases. During surgery the entire redundant sigmoid colon and prolapsed rectum were removed. A double-stapled end-to-end anastomosis was performed at the level of mid rectum, below the promontory. No rectopexy was performed. The lateral ligaments of the rectum were not divided. There was low ligation of the superior rectal artery and entry into the mesorectal posterior plane of dissection but extending only to the level of mid rectum. A tire-test for anastomotic leak was negative in all cases and no stomas were performed. There was no placement of abdominal drains and no nasogastric tubes. All patients were entered an enhanced recovery program with immediate mobilization and provision of clear fluids and feeding within 46 hours. There were no major postoperative complications. There were only two minor wound infections treated conservatively. All patients were placed on fiber supplements and paraffin oil starting on the 7th postoperative day. Short term functional outcomes after surgery were satisfactory in all patients; there was improvement of chronic constipation with 5 or more bowel evacuations per week. There was no postoperative urge of defaecation or incontinence for either flatus or stools. Median follow-up was 6 months (4-14 months). During that period there was no prolapse recurrence.

Discussion

Complete rectal prolapse is an uncommon condition but it is more common in certain groups of patients. Little evidence exists in the literature regarding the characteristics of the particular group of psychiatric patients, associated

risk factors, the management of the disease and guidelines for the treatment of external rectal prolapse. In the study by Sun C, 61% of young patients had redundant recto-sigmoid colon found intraoperatively and 41% chronic psychiatric diseases, treated by surgery, where a resection-rectopexy was performed in 58% of patients. In another study with young patients less than 50 years old [7], 50% of patients had psychiatric diseases and this factor was related with poor postoperative outcomes.

On the other hand redundant sigmoid colon (otherwise called dolichocolon=elongated colon) is an anatomic variant of the colon. Redundant colonic segments may be found in any anatomic area of the colon, but they occur predominantly in the sigmoid, causing constipation and occasional sigmoid volvulus [8]. Physiologic studies show that redundant sigmoid colon is associated with decreased colonic motility and slow colonic transit [9]. Our group of patients had 4 main characteristics; complete rectal prolapse, psychiatric disease, young age and chronic severe constipation. Surgery is the only treatment of external rectal prolapse but the choice of procedure can be challenging as numerous abdominal and perineal procedures are described. Preoperative investigations were limited only to clinical assessment and colonoscopy. Defacography, MR proctography and anorectal manometry - physiology were deemed unnecessary because of the presence of large external prolapse. Furthermore, those investigations were considered too invasive for psychiatric patients without a substantive benefit. Several procedures claim a position in the guidelines for the treatment of external rectal prolapse [10]. In the Cochrane Database of systematic reviews for the surgical treatment of complete rectal prolapse in adults the best surgical treatment is not yet identified [11], the data originate from studies in older patients. We were of the opinion that perineal procedures were not suitable for our group of patients because of their young age, the psychiatric history, the higher risk of recurrence and the presence of the redundant sigmoid colon. We believed that, as none of the patients had prior abdominal surgery and they were young and fit, there was a good chance of the abdominal approach being uncomplicated. A rectopexy procedure on its own was in our opinion contraindicated because of the possibility of acute angulation of the redundant sigmoid colon at the point of fixation on the promontory. This is a known mechanism of development of de novo constipation post rectopexy and we believe that the phenomenon would be worse in our group because of the redundancy of the sigmoid. According to the guidelines the sigmoid resection and a posterior suture rectopexy is recommended (evidence 1B) in patients with preoperative constipation. This operation known as Frykman operation was reported in 1955 [12], and presents low recurrence rates <2% with morbidity at 4% related to anastomotic leak and without mortality [13]. A modified technique without rectopexy was used in our patients studied due to the presence of redundant sigmoid loops and the core

points during surgery were the following; a) to remove the redundant sigmoid colon with the most possible length of the sigmoid colon, b) to mobilize and remove the upper rectum c) to remove the mobilized bowel loop and sigmoid colon in the most central point of the sigmoid colon, but leaving the correspondent length of the central sigmoid colon of some cm for the creation of an anastomosis in lower pelvis without tension, d) to protect and leave intact the left colic vessels, e) there was no rectopexy f) there was entry into the mesorectal plane up to the upper rectum level and the superior rectal artery was divided but the lateral ligaments of the rectum were not divided; there are indications showing that division of lateral ligaments, decreases the recurrences but may influence negatively the constipation.

Following an end-to-end double - stapled anastomosis a negative tire-test for anastomotic leak was performed. There were no prophylactic stomas, so they were all one-stage resections. The young age of our patients, the ASA Grade I, the absence of bowel inflammation or diverticulosis inspired confidence that the risk of anastomotic leak would be very low and a stoma unnecessary, and our choice was confirmed. This decision - making would be possibly different when dealing with different patient material. In short terms outcomes, the number of evacuations per week was increased without straining during defecation. In our patients males are over represented in comparison to the general prolapse population, this is a consequence of the psychiatric history being on of the selection criteria. The lack of anal incontinence in our patients may be explained by the young age, the nulliparity and the short duration of the complete rectal prolapse; all patients had presence of the external rectal prolapse < 6 months.

Conclusions

Complete rectal prolapse in young patients with psychiatric disease and redundant colon is a special group that may be unsuitable for rectopexy. The existence of the redundant sigmoid colon, probably participate significantly in chronic preoperative constipation and is a cause of postoperative constipation. We have showed that in patients with similar characteristics one-stage anterior resection of the rectosigmoid is a safe and effective operation.

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