



Rectosigmoid prolapse – A case report

Rektosigmoidni prolaps

Vasilije Jeremić*[†], Srdjan Mijatović*, Slobodan Krstić*[†], Sanja Dragašević[‡],
Tamara Alempijević^{†‡}

*Clinic for Emergency Surgery, [‡]Clinic for Gastroenterology and Hepatology, Clinical Center of Serbia, Belgrade, Serbia; [†]Faculty of Medicine, University of Belgrade, Belgrade, Serbia

Abstract

Introduction. Many factors have been indentified as a possible cause of rectal prolapse. Despite the fact that it is not a life-threatening condition, its clinical presentation varies, and sometimes it can present as an emergency. We presented a patient with prolapse of an unusually large segment of the rectosigmoid colon caused by chronic constipation, as an incarcerated segment repaired surgically. **Case report.** A 62-year-old female patient was referred to the Emergency Department in bad condition with severe pain in the perianal region. On examination a complete rectal prolapse as well as a part of sigmoid colon were found. Macroscopically, the prolapsed segment appeared edematous, livid, with ulcerations. An attempt to manually reduce prolapse failed, therefore resection of 50 cm of sigmoid colon with rectopexy had to be performed. No complications occurred and the patient was without symptoms six months later. Colonoscopy did not reveal any abnormality. **Conclusion.** Although the preoperative management and preparation of the patient was limited, emergency surgical intervention for such a case was the strategy of choice due to magnitude of the prolapsing segment. It provided a successful and permanent solution.

Key words:

rectal prolapse; colon, sigmoid; surgical procedures, operative; treatment outcome.

Apstrakt

Uvod. Mnogi faktori mogu prouzrokovati prolaps rektuma. Mada se ne radi o životno ugrožavajućem stanju, klinička manifestacija može biti različita, a ponekad se manifestuje i kao urgentno stanje. Prikazali smo bolesnicu sa prolapsom većeg segmenta creva – prolapsom rektosigmoidalnog kolona, nastalog usled hronične konstipacije koji je bio u stanju uklještenja, uspešno rešenim hiruškim putem. **Prikaz bolesnika.** Bolesnica, stara 62 godine upućena je u urgentno odeljenje u lošem stanju, sa jakim bolovima u perianalnoj regiji. Pregledom je nađen kompletan rektalni prolaps kao i prolaps sigmoidnog kolona. Makroskopski, prolabirani segment je bio lividan, edematozan, sa ulceracijama. Kako je manuelna repozicija bila nemoguća, sprovedeno je urgentno hirurško lečenje transabdominalnim pristupom, repozicija i resekcija 50 cm izmenjenog rektosigmoidalnog segmenta, sa prednjom rektopleksijom. **Zaključak.** Iako je preoperativna dijagnostika i priprema bolesnice bila ograničena, stanje prolabiranja segmenta creva zahtevalo je urgentnu hirušku intervenciju. Primena navedene procedure dala je povoljan efekat.

Ključne reči:

rektum, prolaps; kolon, sigmoidni; hirurgija, operative procedure; lečenje, ishod.

Introduction

Complete rectal prolapse (*prociidentia*) is the protrusion of the entire thickness of the rectal wall through the anal sphincter complex ¹.

Its first description can be dated to the Ebers Papyrus of Ancient Egypt (approximately 1,500 BC) ^{1,2}.

In the twentieth century two competing theories of rectal prolapse were evolved ³. In 1912 Alexis Moschowitz proposed that rectal prolapse was caused by sliding herniation of the pouch of Douglas through the pelvic floor

fascia into the anterior aspect of the rectum. The pelvic floor of prolapse patients is mobile and unsupported and it was registred that other adjacent structures can occasionally be seen alongside the rectal component of the prolapse. Due to advent of defecography, Broden and Snellman in 1968 were able to show convincingly that *prociidentia* is basically a full-thickness rectal intussusception starting approximately three inches above the dentate line and extending beyond the anal verge. According to these theories, it was concluded that the weakness of the pelvic floor in rectal prolapse cases, the concept of herniation, and the obser-

vation that there are abnormal anatomic features characterize this condition³.

Patients with rectal prolapse suffer from anal incontinence (50–75%), constipation (30–50%), mucus or blood discharge from the protruding tissue (25%) and pain during bowel movements. Rectal prolapse is most frequently seen in elderly multiparous women, but the etiology is not fully explained.

Although numerous possibilities have been proposed, the exact cause and mechanism of rectal prolapse is not completely understood^{4,5}. Conditions resulting in increased intraabdominal pressure such as pregnancy, obesity, perianal injury, chronic opstipation can cause rectal prolapse^{4,6}. The anatomic abnormalities and variations associated with rectal prolapse are intussusception, deep *cul-de-sac* or pouch of Douglas, absent fixation of the rectum and sigmoid colon, weakness of the pelvic floor and sphincter muscles⁴. Functional abnormalities that can occur are fecal incontinence, constipation or incomplete evacuation⁴.

The main clinical feature of rectal prolapse is a protruding mass following defecation or occurring spontaneously upon standing or coughing. It can be accompanied by rectal bleeding or mucoid discharge^{4,6}.

When the prolapsed rectum becomes edematous, rectal blood supply can become compromised, creating life-threatening gut ischemia as a result of strangulation.

Rectal prolapse is diagnosed entirely clinically and the treatment is primarily surgical, including laparotomy and internal reduction when possible, or perineal resection.

Untill now there has not been reported prolapse of this magnitude in the medical literature, so we designated it as rectosigmoid prolapse.

Case report

A 62-year-old female patient was referred to the Emergency Department in bad condition, with severe pain in the perianal region, because of an acute protruded rectal mass following defecation. The patient reported no rectal bleeding nor mucoid discharge, her medical history revealed no previous illnesses. She had two vaginal deliveries, and in the last 20 years she was constipated with occasional rectal bleeding and prolapsing, what she grasped as hemorrhoids, and seek no medical attention. The patient had pudendal damage caused by direct trauma (obstretical) during her deliveries, demonstrated in prolapse and responsible for denervation atrophy of external sphincter musculature, pelvic floor and anal sphincter weakening. Her physical examination revealed only mild tenderness in the left lower abdomen and an edematous, livid, visible mass with ulcerations (Figure 1). The rectal mucosae was thickened and ulcerated.

An attempt to manually reduce prolapse failed. Routine laboratory analysis showed a slightly elevated white cell number, and a higher sedimentation rate (32/h) without any other abnormalities in total blood count, nor biochemical tests.

Plain abdominal X-ray showed signs of aerocoly. Abdominal ultrasonography examination was performed and



Fig. 1 – Complete rectal and partial sigmoid prolapse.

showed no abnormalities. Due to the magnitude of the prolapsed segment with signs of ischemia and necrosis, failure of an attempt to manually reduce it, indication for general anesthesia and urgent surgical treatment was appointed.

The main purpose of surgery in correcting rectal prolapse is to protect or restore fecal continence. The abdominal treatment approach was chosen due to its better results in terms of success in restoring anatomy and function. The incarceration of the prolapsed segment, as a complication of perianal rectosigmoidectomy, is sometimes manually reduced in general anesthesia.

Intraoperatively, dolichosigma was registered in the elongated mesorectum (midrectum?) of rectosigmoid. There was a mild dilatation of the proximal colon, with normal macroscopic morphology of the bowel wall and minimal residue particules of feces and gas in the lumen. The anal sphincter was weak and distended. After a succesful reposition of the prolapsed segment due to the intraoperative finding, rectosigmoid resection and suture rectopexy were done. After the low midline incision, the lateral peritoneal reflection of the sigmoid colon was incised by electrocautery. The gonadal vessels and the left ureter were identified and swept posteriorly. The peritoneal incision was continued to the left side of the rectum, 1 cm laterally to the rectal wall and curved anteriorly to the rectouterine sulcus. The peritoneum at the base of sigmoid mesentery was incised and continued to the right side of the rectum to unite with the incision on the left side of the sulcus. Posterior mobilization was continued to the pelvic floor muscles. The tissues laterally to the rectal wall were swept away laterally. The areolar tissue plane between the anterior wall of the rectum and the vagina was entered in the midline. Lateral peritoneal attachments in the midrectum were divided, while the rectum was pressed strongly to the opposite side. The lateral ligaments that were distal to this level were preserved. The rectosigmoid segment with changed bowel wall in the length of 50 cm was transected, reanastomosed and sutured to the presacral fascia at about the upper part of the third sacrum.

No complications occurred after the procedure and the patient was without symptoms and laboratory abnormalities on the control examination six months later. A colonoscopy

examination was performed as well, which revealed no abnormalities. Anorectal manometry and defecography were initially planned as a postoperative evaluation, but they were not conducted because the patient was not motivated to allow intervention.

Discussion

Despite the well-known etiology, pathophysiology and methods of surgical treatment, rectal prolapse remains a highly controversial disabling medical condition^{2,4}.

The prevalence of external rectal prolapse is relatively low, estimated to occur in less than 0.5% of the general population overall¹. It occurs more frequently in the elderly population and in females; estimation is that 3% of women in the United States have some form of pelvic organ prolapse, including rectal prolapse or uterine or vaginal prolapse, rectocele, cystocele, urethrocele, and enterocele^{2,7,8}.

Rectal prolapses can be caused by anatomical and functional abnormalities⁸. Anatomical features which can cause this condition include redundant sigmoid colon, diastasis of the *musculus levator ani*, loss of vertical position of the rectum and its sacral attachment and/or an abnormally deep *cul-de-sac*. Any kind of pelvic dyssynergia, paradoxical puborectal contraction or sphincter abnormalities can lead to the development of *prociencia*. Pregnancy, obesity, perineal injury, chronic constipation, or other conditions resulting in increased intra-abdominal pressure are associated with rectal prolapses^{4,8}.

The main clinical feature of rectal prolapse is a protruding mass following defecation⁸. In the beginning the mass retracts in an upright position. With disease progression, protrusion is more often, even unrelated to stool discharge (any reason of intrabdominal pressure increase as sneezing and coughing can cause rectal prolapses). Finally, rectum prolapses with daily activities such as walking and may progress to continual prolapse. In the majority of cases, the patients can manually return the rectum, incarceration may occur but rarely. Pain is variable. Even 10–25% of patients also have uterine or bladder prolapse, and 35% may have an associated cystocele. Constipation occurs in 15–65% of cases. There may also be rectal bleeding, with or without mucous discharge^{4,5,8,9}.

In the diagnostic workup, besides history and physical examination, colonoscopy is of great importance in order to

exclude the presence of tumors and prolapsed internal hemorrhoids as the cause of patient's symptoms, as well as the presence of other colonic pathology. The rectal mucosa shows signs of congestion, and this finding should be discriminated from inflammatory bowel diseases. Anorectal manometry and defecography can be used in selected patients in order to choose better surgical techniques that may improve the postoperative functional outcome, especially in patients with concomitant symptoms of abnormal bowel habits⁸.

Many procedures have been reported that repair rectal prolapses, and the procedure used depends on the severity of prolapse¹⁰. Rectopexy combined with anterior sigmoid resection is currently the most popular operation in the United States for rectal prolapse. Recurrence rates 0–9% are expected. In choosing a surgical technique, numerous factors must be considered, such as patient's age, comorbidities, gender, and importantly, preoperative constipation^{5-7,9}. Abdominal and perineal operations are the main surgical choices. Abdominal approaches such as rectopexy, resection and fixation and, recently, laparoscopic approaches are also widely performed in younger patients. However, these procedures tend to be time-consuming, they demand advanced surgical techniques, and the recurrence rate is not low². In terms of perineal approaches, Delorme's and Gant-Miwa procedures might be feasible for mild prolapses in the elderly, whereas the Altemeier's procedure is the surgical option of choice for severe rectal prolapses⁸.

Since 1993 the laparoscopic approach has been used, as well. A randomized controlled trial of perineal proctosigmoidectomy with pelvic floor reconstruction vs open resection rectopexy and pelvic floor reconstruction showed no difference in recurrence rates; however, incontinence was significantly improved in the resection rectopexy group¹¹.

We found only one case report in the literature describing a complete rectal prolapse in a young male patient, but contrary to our patient with no underlying colonic disease diagnosed, that patient suffered from rectal adenoma⁷.

Conclusion

Although the preoperative management and preparation of the reported patient with unusually large rectosigmoid prolapse was limited, emergency surgical intervention was the strategy of choice.

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