



Laparoscopic rectopexy

J. W. Nunoo-Mensah, J. E. Efron, T. M. Young-Fadok

Division of Colon and Rectal Surgery, Mayo Clinic, 13400 East Shea Boulevard, Scottsdale, AZ 85262, USA

Received: 21 February 2006/Accepted: 7 June 2006/Online publication: 27 December 2006

Abstract. Abdominal rectopexy has been advocated as the treatment of choice for complete rectal prolapse. Recurrence rates are low ranging from 0–12% and fecal continence has been documented to improve in 3–75% of patients. As most patients are elderly and not always fit enough to undergo abdominal procedure, various perineal approaches have been advocated. Depending on the type and extent of the operation, these procedures have a recurrence of up to 38%. Laparoscopic rectopexy represents the latest development in the evolution of surgical treatment of rectal prolapse. This technique aims to combine the good functional outcome of the open abdominal procedure with the low postoperative morbidity of minimal invasive surgery. We present a laparoscopic rectopexy on 72-year-old lady with a 10-year history of fecal incontinence and mucosal rectal prolapse.

Key words: Laparoscopic — Laparoscopy — Rectal prolapse — Rectopexy

The abdominal approach to rectopexy, with or without concomitant resection, has been advocated as the treatment of choice for complete rectal prolapse. Recurrence rates are low, ranging from 0% to 12%, and associated fecal continence, if present, has been documented to improve in 3% to 75% of patients [3, 4]. Because many patients are elderly and often have significant medical comorbidities, various perineal approaches have been used as alternatives. Depending on the type and extent of the operation, these latter procedures tend to have higher recurrence rates, reaching 38% [3, 4].

Laparoscopic rectopexy represents the latest development in the evolution of surgical treatment for rectal

prolapse [1, 2, 5, 6]. This technique aims to combine the good functional outcome of the open abdominal procedure with the low peri- and postoperative morbidity of minimally invasive surgery.

Methods

Patient

A 72-year-old woman presented with a 10-year history of fecal incontinence and recent rectal prolapse. At examination, she had a patulous anus, full-thickness circumferential rectal prolapse, and poor resting anal tone. Anorectal manometry confirmed significant weakness of both the internal (16 mmHg; normal, 40–70 mmHg) and external (38 mmHg; normal, >100 mmHg) anal sphincters.

Endoanal ultrasound showed an anterior thin external anal sphincter, but no defects. The internal anal sphincter was morphologically normal in appearance. In view of her rectal prolapse, the patient was offered a laparoscopic rectopexy. The purpose of this video is to demonstrate the essential steps for performing laparoscopic rectopexy.

Operative procedure

After induction of general anesthesia, the patient was placed in the Lloyd-Davis position. The surgeon, camera operator, and scrub nurse stood on the right side of the patient. The first assistant was positioned on the patient's left side. Two monitors were placed, one on either side of the patient, toward the feet for alignment of hands, instruments, and operative field during dissection in the pelvis. A supraumbilical cut-down was used for insertion of the blunt port, and a carbon dioxide pneumoperitoneum was achieved to 13 mmHg. A 10-mm 30° angled video scope was introduced. Under direct vision, three 5-mm ports were placed in the right and left lower quadrants, and in the suprapubic midline position. The patient then was placed in moderately steep Trendelenberg, with the left side inclined up.

Starting at the pelvic brim, the left lateral peritoneal reflection was opened alongside the distal sigmoid to identify and protect the left ureter, and the sigmoid was mobilized medially. The peritoneal attachments of the descending colon were left intact. The left lateral peritoneal line of dissection then was continued distally scoring along the left pararectal peritoneum just distal to the sacral promontory. This permitted entry into the bloodless presacral plane, which was further exposed by elevation of the mesorectum using a retractor via the suprapubic port.

With exposure facilitated by the first assistant, the rectum was mobilized in the presacral space as far distally as possible. The rectum

then was retracted to the patient's left side, and the right pararectal peritoneum was scored after identification and protection of the right ureter. The dissection next was joined in the presacral space with the dissection already performed from the left side of the rectum. With careful retraction and exposure, a full dissection of the posterior and lateral aspect of the rectum was performed in the correct presacral bloodless plane down to the pelvic floor. The lateral stalks were divided because this minimizes the risk of recurrence. Anteriorly, a sponge stick was placed in the vagina to identify the rectovaginal septum clearly during anterior dissection of the rectum. This is particularly important for the patient with a rectocele to avoid inadvertent injury. In this manner, the rectum was completely dissected down to the top of the anal canal, and this was confirmed by digital examination.

With the rectum under appropriate tension, so that it lay neither redundantly nor completely bow-stringing across the pelvis, the laparoscopic tacking device was used to tack the right pararectal tissues to the presacral area at the level of the sacral promontory. The rectum lay in correct anatomic position after this was performed.

Results

The operative time was 120 min, and the blood loss was less than 50 ml. The postoperative period was uneventful. On postoperative day 1, the patient started a clear liquid diet. On day 2, she passed flatus, and by day 4 she was established on a regular diet. The length of her hospital stay was 5 days, and she then returned to normal activity 1 week postoperatively.

Postoperative examination after 1 month showed resolution of the patient's rectal prolapse. Although she still was reporting some fecal incontinence, it was markedly improved. Because she did not show a sphincter defect on endorectal ultrasound, she was managed conservatively with bulking and antidiarrhial agents with good results.

Discussion

Laparoscopic rectopexy, with complete mobilization of the rectum to the pelvic floor, was feasible and safe for our patient. This approach resulted in minimal blood loss, no perioperative complications, and a short postoperative hospital stay.

It is our general practice to perform a full rectal dissection, which includes division of the lateral stalks. This has the benefit of possibly reducing recurrence rates. It also, in some patients, causes difficulty with

evacuation. This was thought to be a desirable feature for this patient with loose stool. We also perform a sigmoid resection concomitant with a rectopexy in most patients, because many have a history of constipation. The reported patient had no constipation, but tended toward loose stool with associated fecal incontinence. Only a rectopexy was performed, without the addition of the sigmoid resection, which might have worsened the patient's incontinence by making her stool even looser.

Many abdominal techniques have been described for rectal prolapse. The techniques differ only in the extent of rectal mobilization, the methods used for rectal fixation, and the inclusion or exclusion of sigmoid resection. Although there are some reports of good results with mobilization alone, rectopexy is commonly performed using either suture rectopexy or insertion of a foreign material (e.g., mesh) to provoke a fibrous reaction to secure the rectum.

We advocate the use of suture rectopexy rather than mesh rectopexy because this has proved to be as effective as mesh rectopexy, and furthermore, minimizes the potential complications of mesh (i.e., infection and erosion of the mesh into the bowel). In our video, we opt to use a tacking stapling device because this is quicker, and we have found it to be just as efficient and effective in securing the mesh to the sacral promontory as suture rectopexy.

References

1. Ashari LH, Lumley JW, Stevenson AR, Stitz RW (2005) Laparoscopically assisted resection rectopexy for rectal prolapse: ten years' experience. *Dis Colon Rectum* 48: 982–987
2. Kariv Y, Delaney CP, Casillas S, Hammel J, Nocero J, Bast J, Brady K, Fazio VW, Senagore AJ (2006) Long-term outcome after laparoscopic and open surgery for rectal prolapse: a case-control study. *Surg Endosc* 20: 35–42
3. Karulf RE, Madoff RD, Goldberg SM (2001) Rectal prolapse. *Curr Probl Surg* 38: 771–832
4. Madiba TE, Baig MK, Wexner SD (2005) Surgical management of rectal prolapse. *Arch Surg* 140: 63–73
5. Purkayastha S, Tekkis P, Athanasiou T, Aziz O, Paraskevas P, Ziprin P, Darzi A (2005) A comparison of open vs laparoscopic abdominal rectopexy for full-thickness rectal prolapse: a meta-analysis. *Dis Colon Rectum* 48: 1930–1940
6. Senagore AJ (2003) Management of rectal prolapse: the role of laparoscopic approaches. *Semin Laparosc Surg* 10: 197–202