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Laparoscopic implementation of the Altemeier procedure for recurrent rectal prolapse. Technical note

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ABSTRACT

INTRODUCTION: Many surgical options exist to treat rectal prolapse with different indications, feasibility and results in urgent and complicated cases. These include perineal or abdominal approaches including rectopexy with or without resection. Perineal approaches have reduced surgical invasivity and hospital stay if compared to transabdominal approaches by open surgery or laparoscopy. Up to now there was still a clear dividing line for surgical treatment between the perineal approach, used more for complicated emergency case while the transabdominal open, or laparoscopic approach more common in elective surgery, but more complex to perform.
PRESENTATION OF CASE: A 37 year old female patient affected by psychiatric disease presented with an unreducible second recurrence of a complicated rectal prolapse. The patient was treated with a third Altemeier procedure but now performed under laparoscopic control. The patient recovered promptly without any complication or recurrence up to the 24 months follow-up.
DISCUSSION: To the best of our knowledge, this is the first case report describing the combined laparoscopic-perineal approach for the treatment of a complicated recurrence of rectal prolapse. The technical feasibility, the rapidity, the optimal outcome and the rationale behind this option all suggest that this laparoscopic assistance certainly allows an implementation of the effectiveness, safety and results of an established effective perineal approach.
CONCLUSION: This combined approach has the advantage of maintaining the simplicity and rapidity of conventional perineal surgery, adding the advantages of abdominal control and avoiding the risks, the invasivity, and the longer duration of more complex laparoscopic procedures.

1. Introduction

A plethora of surgical options exist to treat rectal prolapse[1,2] including perineal approaches like Altemeier, Delorme and others, or different abdominal approaches with or without bowel resection. Laparoscopic techniques are increasing used mostly in elective patients with a low degree of prolapse, but are more complex to perform especially in acute complicated prolapse. Up to now there has been a strange but clear dividing line for surgical treatment between the perineal approach and open or laparoscopic transabdominal approach. This technical variation consisting of laparoscopic control and assistance prior and during an Altemeier procedure is aimed to improve this old effective technique especially for patients with recurrences.

2. Patient and result

A 37 years old female patient affected with developmental disability classified as Mental Retardation (ICD 10 cod F70–F79) was admitted to the emergency room for an irreducible second recurrence of rectal prolapse. The patient's history revealed an Altemeier procedure with a rectal resection of 9 cm 7 years prior, followed after 6 years, by the first recurrence with a partial rectal ischemia, and treated urgently with a second Altemeier procedure resecting another 8 cm of bowel. The inspection revealed the prolapsed sigmoid was 8 cm long, appeared edematous but not ischemic (Fig. 1). An attempt at manual reduction of the prolapse failed, due to pain. Feeding was stopped and fluids and antibiotic were administered before surgery.

3. Technical note

The patient was positioned as for laparoscopic low anterior resection. Laparoscopic abdominal exploration was performed first

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Fig. 1. Second recurrence of rectal prolapse: 8 cm.

to control the residual length and the mobility of the rectosigmoid colon after the two reported previous Altemeier resections. The pneumoperitoneum was performed with a Verres needle and three trocars (12, 5, 5 mm) were introduced. Laparoscopy showed that the sigmoid colon was pulled straight toward the pelvic floor without tension, and was not mobile at all. The pneumoperitoneum was temporarily suspended, and a third Altemeier procedure was performed in 55 min using Ligasure® for the resection and completed with a manual colo-anal anastomosis using interrupted 3/0 Vicryl® sutures. The final laparoscopic control and the pneumoperitoneum also allowed the anastomosis to be checked, by a reverse hydro-pneumatic test checking the passage of CO_2 bubbles, or saline through the stitches of the colo-anal suture. A drain was positioned near the colo-anal anastomosis through one of the trocars. On the 3rd postoperative day the patient passed stool. The drain was removed on the 5th postoperative day and the patient returned to her psychiatric center, with normal defecation, and without recurrence up to the last follow up, 24 months after surgery.

4. Discussion

The choice of surgical treatment for rectal prolapse depends on the type of prolapse but also on the surgeon's preference, and can be accomplished by perineal or trans-abdominal techniques. Perineal approaches are recognized as simpler and with less morbidity, but have higher recurrence rates, especially because of the impossibility of optimal fixation inside the pelvis. These techniques and mostly the Altemeier (perineal rectosigmoidectomy),[3] have therefore typically been reserved for high-risk and elderly patients in acute prolapse.[2–4] Abdominal techniques include resection, fixation of the rectum to the sacrum, or a variable combination with added potential risk for anastomotic leak,[4,5] also performed by a laparoscopic approach with a significant reduction in hospital stay but without any statistical difference on morbidity or mortality versus open surgery.[6,7] In centers with wide experience the preferred technique is still the perineal-based technique (82.7%) versus abdominal techniques (17.4%) of which 10.7% are open and 6.7% are laparoscopic.[8] The Rectal Prolapse Recurrence Study Group[9] showed overall recurrence rates of 1.06%, 6.61%, and 28.9%, respectively after one, five, and 10 years without significant association of surgical technique, (laparoscopic versus open), or rectopexy procedure. The average hospitalization is significantly shorter with perineal procedures (2.6 days). All these data are important during the evaluation of the different surgical options, especially in recurrent complicated cases in high risk patients. The options for recurrent prolapse are a standard open low-anterior resection with colo-anal anastomosis, with possible loop ileostomy, or an open rectopexy with or without resection, with colo-anal anastomosis, or a renowned transperineal resection. The technical solution here described for the first time has the advantage of having laparoscopic control of the intra-abdominal recto-sigmoid situation, allowing a more precise evaluation of the pelvic condition to help in deciding the best procedure, and to help in performing it under laparoscopic control. This resulted in a very simple and fast procedure when compared to the literature.[6,8] This combined laparo-perineal approach has both clinical and technical advantages. The laparoscopic assistance allows a preventive control of the tension, strength and mobility of the remaining pelvic colon, to calibrate its strength to prevent recurrence. Moreover after completion of the Altemeier it is possible, only if needed, to laparoscopically suture the sigmoid with some stitches inside the pelvis, increasing effectiveness and reducing the risk of recurrence. A limitation of a standard Altemeier procedure is that this is indeed a "blind" recto-sigmoid resection, because the surgeon does not know exactly how much rectum or sigma still mobile for re-prolapse, remains inside the pelvis. Furthermore, a thick edematous mesorectum and mesosigma can also hinder an optimal transperineal extraction, misleading the surgeon into performing an incomplete recto-sigmoid resection. This case again underlines the idea that the combination of two techniques can have an implementation effect on results, as is also suggested for other procedures combining traditional technique with laparoscopic or endoscopic procedures.[10,11] The trans-abdominal techniques are more invasive, and more complex and especially in a case like this of long standing prolapse there could be an increased risk of technical problems in different steps of a stapled low colorectal anastomosis, because the transection and closing of the rectal stump is more difficult due to edema of both the proximal colonic and distal prolapsed rectal stump. In such a situation a manual colo-anal anastomosis would be simpler and safer than a stapled one. Moreover, today the perineal part of the resection of the Altemeier procedure can be performed rapidly with modern transecting and sealing devices.[12] A laparoscopic intra-abdominal second "point of view", allows the surgeon to rule out ischemia of the anastomosing colon, and to leave a drain in, to prevent and treat eventual intra-abdominal collections or leakages. The pneumo-peritoneum also allows a testing of the anastomosis controlling for the absence of the passage of gas bubbles or fluids from the abdomen through the stitches of the colo-anal suture, helping the surgical team decide on an ileostomy. All these factors are important, especially in psychiatric patients with low compliance for ileostomy. Additionally, this laparoscopic control of perineal surgery is simple, does not need particular laparoscopic skills and therefore can be adopted widely. We hope that this implementation effect of a laparoscopically assisted Altemeier, suggested by our unique experience, can be confirmed by other cases or studies, but the rationale behind it is clear. Otherwise, this first positive experience absolutely does not suggest a change in the standard indications and procedures for uncomplicated prolapse. In conclusion, our experience shows that laparoscopic assistance for perineal resection can be a simple and quick way to improve the effectiveness, the safety, and probably the long term results of the Altemeier procedure, while it reduces the invasivity and the risks of more complex laparoscopic and open abdominal approaches.

Conflict of interest

None.

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Ethical approval

None.

Author contributions

All the authors were involved in the treatment of the patient. La Greca G. – wrote the paper, Sofia M., Randazzo V. and Primo S. performed literature study. Lombardo R. and Russello drafting and corrections. Esaustiva.

Key learning point

- The Altemeier perineal recto-colonic resection is the most common procedure to treat a complicated rectal prolapse but is related with relevant recurrence.
- The laparoscopic assistance is useful in the case of an Altemeier procedure because of the visual control of the status and mobility of the residual pelvic colon that brings to a tailored recto-sigmoid resection.

References

1. Keighley MRB, Williams NS. Rectal prolapse. In: Keighley MRB, Williams NS, editors. *Surgery of the anus, rectum and colon*, vol. 1., 3rd ed. Philadelphia: Saunders Elsevier; 2008. p. 779–827.
2. Steele SR, Goetz LH, Minami S, Madoff RD, Mellgren AF, Parker SC. Management of recurrent rectal prolapse: surgical approach influences outcome. *Dis Colon Rectum* 2006;**49**:440–5.
3. Altemeier WA, Culbertson WR, Alexander JW. One-stage perineal repair of rectal prolapse: twelve years' experience. *Arch Surg* 1964;**89**:6–16.
4. Beck DE, Whitlow CB. Rectal prolapse and intussusception. In: Beck DE, editor. *Handbook of colorectal surgery*. 2nd ed. New York: Marcel Dekke; 2003. p. 301–24.
5. Xynos E, Chrysos E, Tsiaoussis J, Epanomeritakis E, Vassilakis JS. Resection rectopexy for rectal prolapse. The laparoscopic approach. *Surg Endosc* 1999;**13**:862–4.
6. Sajid MS, Siddiqui MR, Baig MK. Open vs laparoscopic repair of full-thickness rectal prolapse: a re-meta-analysis. *Colorectal Dis* 2010;**12**:515–25.
7. Solomon MJ, Young CJ, Eyers AA, Roberts RA. Randomized clinical trial of laparoscopic versus open abdominal rectopexy for rectal prolapse. *Br J Surg* 2002;**89**:35–9.
8. Hammond K, Beck DE, Margolin DA, Whitlow CB, Timmcke AE, Hicks TC. Rectal prolapse: a 10-year experience. *Ochsner J* 2007;**7**:24–32.
9. Rectal Prolapse Recurrence Study Group. Recurrence rates after abdominal surgery for complete rectal prolapse: a multicenter pooled analysis of 643 individual patient data. *Dis Colon Rectum* 2005;**48**:1200–6.
10. La Greca G, Barbagallo F, Di Blasi M, Chisari A, Lombardo R, Bonaccorso R, et al. Laparo-endoscopic Rendezvous to treat cholecysto-choledocolithiasis: effective, safe and simplifies the endoscopist's work. *World J Gastroenterol* 2008;**14**:2844–50.
11. Kozarek RA. The society for gastrointestinal intervention. Are we, as an organization of disparate disciplines, cooperative or competitive? *Gut Liver* 2010;**4**(Suppl. 1):S1–8.
12. Gravante G, Venditti D. The Altemeier procedure: new technologies for an old technique. *Dis Colon Rectum* 2006;**49**:1801–2.