

Perineal stapled prolapse resection (PSPR) for external rectal prolapse in high morbidity patients



Ann. Ital. Chir., 2016 87: 476-480
pii: S0003469X16025586

Matteo Maternini, Angelo Guttadauro, Nicoletta Pecora, Francesco Gabrielli

UOC Chirurgia Generale, Istituti Clinici Zucchi, Monza Italy

Perineal stapled prolapse resection (PSPR) for external rectal prolapse in high morbidity patients

AIM: To demonstrate the efficacy and safety of a perineal stapled approach to treat the protrusion of the entire layer of the rectum outside the anus in high morbidity patients.

MATERIALS OF STUDY: From February 2012 to April 2013, 7 patients (all female, mean age 74.2 years, range 48-88) were operated in our unit with perineal stapled prolapsed resection (PSPR) approach for a full thickness external rectal prolapse.

RESULTS: The duration of hospitalization was 3 days and the follow-up period was 18 months. There were no intraoperative complications and all patients had a bowel movement within 3 days of surgery. There was no mortality. None of the patients suffered from incontinence. Two patients (28.5%) had a recurrence and proctorrage after 18 months.

DISCUSSION: PSPR can be considered among perineal approaches for the treatment of full-thickness rectal prolapse. The reported rate of minor complications is low. No major complications have been described. Functional outcome is good, with marked improvement in both continence and constipation.

CONCLUSIONS: These results are better than those reported for other perineal procedures, although no randomized trials have yet been published. A multicenter study is needed to better evaluate the indications for and the outcome AFTER PSP.

KEY WORDS: Morbidity patients, Perineal stapled prolapse resection, Rectal prolapse

Introduction

The protrusion of the entire layer of the rectum outside the anus, is an important cause of disability, especially in elderly women (80-90% of patients) where it is frequently associated with fecal incontinence¹.

The incidence of complete external rectal prolapse is about 1-2% in the population over 70.

Many surgical approaches for prolapsed have been described with the aim of eradicating the external prolapsing segment and improving continence and constipation.

Actually the choice is between the abdominal approach (rectopexy) or perineal approach (Altemier's or Delorme's procedure)².

According to the guidelines of the American Society of Colorectal Surgeons, patients with a rectal prolapsed who are not candidates for an abdominal operation may be treated with a perineal approach.

Although comparative data suggest that perineal operations are associated with a higher recurrence rate³, recent analysis which score-matched patients for clinical risk found a minimal difference in outcome between abdominal and perineal procedure⁴.

Historically the principal perineal procedures performed are the Delorme's operation and the Altemeier perineal

Pervenuto in Redazione Marzo 2016. Accettato per la pubblicazione Maggio 2016.

Correspondence to: Matteo Maternini, MD, UOC Chirurgia Generale, Istituti Clinici Zucchi, Via Bartolomeo Zucchi 24, 20900 Monza - Italy (e-mail: matteo.maternini@live.it)

rectosigmoidectomy with a reported recurrences rates between 25 and 38% overall ^{5,6}.

Recently, Scherer et al, presented a new perineal surgical approach, perineal stapled prolapsed resection (PSPR), for the treatment of a full thickness external rectal prolapsed. As described, use of the Contour® Transtar™ stapler (STR5G; Ethicon Endo-Surgery, Cincinnati, Ohio, USA) allows safe transanal resection of the rectal prolapsed.

A recent report ⁷ has shown that this technique is associated with minimal morbidity and good functional short-term outcome.

We report our preliminary results of the PSPR technique in the resection of external rectal prolapsed.

Materials and Methods

From February 2012 to April 2013, 7 patients (all female, mean age 74,2 years, range 48-88) were operated in our unit with PSPR approach for a full thickness external rectal prolapse.

All patients are evaluated at risk for abdominal surgery with an American Society of Anesthesiologists (ASA) score 3.

The length of the rectal external prolapsed was comprised between 2,5 and 5,5 cm (Table I).

A colonoscopy and colpocistodefecography were performed. The day before surgery a bowel preparation with two clisma feet was performed.

At the start of operation a prophylactic antibiotic dose with a combination of cephalosporin (1g) and metronidazole (500mg) was administrated and continued for 24 hours.

All patients were operated under spinal anesthesia.

Follow-up visits were performed at 7 days, 1 month, 3 month, 6 month, 12 month and 18 month after surgery.

SURGICAL TECHNIQUE

The patient is placed in a lithotomy position. To free the pouch of Douglas from any deep enterocele, a slight Trendelenburg position was chosen. The prolapse was

TABLE I - Population

Patients	Age	ASA score	BMI	Prolapse Length (cm)
1	88	3	28	3
2	78	3	29	2,5
3	77	3	31	4
4	77	3	27	5,5
5	71	3	28	4,5
6	48	3	20	3
7	81	3	26	3,5



Fig. 1: The prolapsed was axially cut at the three o'clock position with a linear stapler.



Fig. 2: Average we utilized 1-2 Proximate® Linear cutter 75 mm and 6-8 CCS 30 Contour® Transtar™.



Fig. 3: After completing the resection, the anal mucosa and the neo-rectum fell back into place spontaneously.

completely pulled out and fixed by Allis clamps placed at its verge. To exclude the entrapment of any intraperitoneal organ a very careful bi-manual examination was performed. The prolapse was axially cut at the three o'clock position with a linear stapler (Proximate® Linear cutter 75 mm, Ethicon Endo-Surgery) (Fig. 1). The staple line ended 2 cm from the dentate line. The prolapse

was resected continuously counterclockwise by the curved CCS 30 Contour® Transtar™ and parallel to the dentate line. Average we utilized 1-2 Proximate® Linear cutter 75 mm and 6-8 CCS 30 Contour® Transtar™ (Fig. 2). After completing the resection, the anal mucosa and the neorectum fell back into place spontaneously (Fig. 3). Absorbable monofilament sutures were performed to strengthen the anastomosis and ensure haemostasis. All the surgical specimens were sent for histological examination.

Results

The PSPR was successfully completed with a median operative time of 63 min (range 48-95 min) and a median use of 6 cartridges (range 4-9 cartridges).

TABLE II - Results

Patients	Prolapse length (cm)	Operation time (min)	Recurrence (18 months)
1	3	60	No
2	2,5	70	Yes
3	4	70	Yes
4	5,5	48	No
5	4,5	40	No
6	3	95	No
7	3,5	60	No

TABLE III - Symptoms

Patients	VAS Pre-op	VAS Post-op	Rectorragy Pre-op	Rectorragy post-op
1	7	0	Present	No
2	8	2	Present	Present
3	6	2	Present	Present
4	7	0	Present	No
5	8	0	Present	No
6	7	0	Present	No
7	7	0	Present	No

TABLE IV - Wexner Score and Follow-up

Patients	Wexner Constipation Score Pre-op	Wexner Constipation Score Post-op (6 months)	Wexner Constipation Score Post-op (18 months)	18 months Improvement (%)	Average Improvement (%)
1	15	9	5	66.6	63.4 ± 10.6
2	21	12	5	76.2	
3	23	10	10	56.5	
4	11	7	3	72.7	
5	8	7	3	62.5	
6	17	6	6	64.7	
7	9	7	5	44.4	

The median length of resected bowel was 7,5 cm (range 5-11 cm).

All patients were investigated for proctorrhagia, pain (evaluated by VAS score) and constipation (Table III-IV). On histology rectal wall and peritoneal reflection (Douglas pouch) were present in all cases

The duration of hospitalization was 3 days in all patients and the follow-up period was 18 months.

There were no intraoperative complications and all patients had a bowel movement within 3 days of surgery. There was no mortality. None patients suffered of incontinence.

Two patients(28,5%) had a recurrence and proctorrhagia after 18 months. We didn't treat it because the prolapsed were asymptomatic and proctorrhagia irrelevant and well supported.

All the patients reported improvement of constipation (Table IV).

Discussion

Rectal prolapse is a disabling condition often affecting elderly women. In general, two different approaches can be distinguished in the surgical treatment of rectal prolapsed; the abdominal and the perineal approach.

Perineal procedures are recommended for patients, which may be not suitable for transabdominal rectopexy because of concomitant cardiovascular or pulmonary diseases. In the past, the majority of patients undergoing perineal approach were treated with either Delorme's or Altemeier procedure^{4,5}. The use of a stapling device, as alternative to the Altemeier procedure, is in debate for decades. In 2008, Scherer et al. presented a new perineal surgical approach, the so-called perineal stapled prolapse resection, for the treatment of external rectal prolapse⁸. The use of the Contour® Transtar™ stapler (Ethicon Endo-Surgery, Norderstedt, Germany) permits safe transanal resection of external rectal prolapse by a technical modification of the Altemeier procedure and allows resection of rectal intussusceptions under direct view. There are limited guidelines to show which procedure is superior in terms of safety, recurrence rate or functional outcome³.

There are several reports of the STARR(stapled transanal rectal resection) procedure, performed both with circular or Contour stapler for mucosal rectal prolapse or internal prolapse with a small rectal protrusion of up to 5 cm^{9,10}. In our preliminary study, the PSPR procedure appears safe, technically easy and quick to perform. When it is decided that the patient's condition is more suited to a perineal operation, it is known that Delorme's procedure can have a high recurrence rate ranging up to 37 % after only short follow-up⁵, whereas Altemeier's operation has a lower reported recurrence rate (11,12). Our recurrence rate (28.5 %) is consistent with other reported PSPR literature quoting a 19.7% recurrence rate after 3 years of follow-up^{13,14}.

It is important that there should not be too much tissue incorporated into the Contour_ TranstarTM stapler, particularly on the posterior wall where both the rectal wall and the mesorectum are divided by the stapler. This necessitates the performance of smaller stapler steps where the jaws of the stapler must be able to be easily closed.

The median operating time for the performance of PSPR is less than that recorded for either Delorme's or the Altemeier's procedures^{15,16}. The duration of surgery and the number of stapler cartridges required is dependent upon the prolapse length and weight. From a technical standpoint, PSPR results in a wider anastomosis than an Altemeier resection where the technique as used limits the risk of the staple line spiraling away from the operator.

The continuing development of surgical techniques for prolapse management is evidence that the choice of operation for individual patients is still a matter of debate. Although laparoscopic and robotic abdominal rectopexy is being increasingly used, many authors still consider perineal rectosigmoidectomy to be the operation of choice for elderly and high-risk patients with rectal prolapse exceeding 5 cm¹⁷⁻¹⁹. The main drawbacks of PSPR are the impossibility to make a visual control on small bowel and vagina during stapling, its high cost and the relatively limited prolapse length that can be resected.

Conclusions

PSPR can be considered among perineal approaches for the treatment of full-thickness rectal prolapse. The reported rate of minor complications is low. No major complications have been described. Functional outcome is good, with marked improvement in both continence and constipation. The recurrence rate does not appear to be superior to other methods. It is however necessary a longer follow-up. These results are better than those reported for other perineal procedures, although no randomized trials have yet been published. A multicenter study is needed to better evaluate the indications for and the outcome after PSP.

Riassunto

Scopo di questo studio retrospettivo è stato quello di dimostrare l'efficacia, la sicurezza e la relativa facilità di esecuzione dell'approccio perineale con stapler nel trattamento del prolasso totale di retto.

Nel periodo compreso tra febbraio 2012 ed aprile 2013 abbiamo sottoposto 7 pazienti, affette da prolasso totale di retto, ad intervento di resezione perineale con stapler. Tutte le pazienti sono state dimesse in III° giornata post-operatoria dopo ripresa del transito. Il follow-up è stato di 18 mesi.

Non sono state registrate complicanze intraoperatorie né vi è stata mortalità. Non ci sono stati problemi di incontinenza nel post-operatorio.

A 18 mesi di distanza abbiamo registrato due episodi di recidiva associati a proctorragia (28,5%). Entrambi i casi non hanno richiesto un reintervento a causa della scarsità dei sintomi, ben tollerati da entrambe le pazienti.

Concludendo possiamo affermare che, nella nostra esperienza, l'approccio perineale con stapler al prolasso totale di retto, risulta essere una metodica sicura, relativamente facile da eseguire e con un tasso di complicanze comparabile a quello riportato in letteratura ed inferiore a quello delle altre metodiche di approccio perineale. Le limitazioni di tale metodica sono principalmente dovute alla lunghezza e alla spessore della parete prolapsata.

Sicuramente per validare la procedura e le sue indicazioni è auspicabile che venga condotto uno studio multicentrico randomizzato.

References

1. Heitland W: *Rectal prolapsed in adults*. Chirurg, 2004; 75:882-89.
2. Rosa G, Lolli P: *Techniques for the transanal excision of rectal prolapse*. Ann Ital Chir, 2005; 76(5):501.
3. Senapati A, Gray RG, Middleton LJ: *Prosper Collaborative Group, et al.: Prosper: A randomized comparison of surgical treatments for rectal prolapsed*. Colorectal Dis, 2013; 15(7):858-68. doi: 10.1111/codi.12177.
4. Mustain WC, Davenport DL, Parcels JP, Vargas HD, Hourigan JS: *Abdominal versus perineal approach for treatment of rectal prolapsed: comparable safety in a propensity-matched cohort*. Am Surg, 2013; 79:686-92.
5. Senapati A, Nichols RJ, Thompson JP, Phillips RK: *Results of Delorme's procedure for rectal prolapsed Senapati*. Dis Colon Rectum, 1994; 37(5):456-60.
6. Zbar AP, Takeshima S, Hasegawa T, Kitabayashi K: *Perineal rectosigmoidectomy (Altemeier's procedure): A review of physiology, technique and outcome*. Tech Coloproctol, 2002; 6(2):109-16.
7. Hetzer FH, Roushan AH, Wolf K, et al.: *Functional outcome after perineal stapled prolapsed resection for external rectal prolapse*. BMC Surg, 2010; 10:9. doi: 10.1186/1471-2482-10-9.

8. Scherer R, Marty L, Hetzer FH: *Perineal stapled prolapse resection: A new procedure for external rectal prolapse*. Dis Colon Rectum, 2008; 51(11):1727-30. doi: 10.1007/s10350-008-9423-0.
9. Corman ML, Carriero A, Hager T, et al.: *Consensus conference on the stapled transanal rectal resection (STARR) for disordered defecation*. Colorectal Dis, 2006; 8(2):98-101.
10. Renzi A, Talento P, Giardiello C, et al.: *Stapled Transanal Rectal Resection (STARR) by a new dedicated device for the surgical treatment fo obstructed defecation sybdrome caused by recatl intussusception and rectocele: Early results of a multicenter prospective study*. Int J Colorectal Dis, 2008; 23(10):999-1005. doi: 10.1007/s00384-008-0522-0.
11. Scherer R, Marty L, Hetzer FH: *Perineal stapled prolapse resection: A new procedure for external rectal prolapse*. Dis Colon Rectum, 2008; 51(11):1727-30. doi: 10.1007/s10350-008-9423-0.
12. Agachan F, Reissman P, Pfeifer J, Weiss EG, Noguera JJ, Wexner SD: *Comparison of three perineal procedures for the treatment of rectal prolapse*. South Med Journ, 1997; 90(9):925-32.
13. Altomare DF, Binda G, Ganio E, De Nardi P, Giamundo P, Pescatori M: *Rectal Prolapse Study Group (2009) Long-term outcome of Altemeier's procedure for rectal prolapse*. Dis Colon Rectum, 2009 52(4):698-703. doi: 10.1007/DCR.0b013e31819ecffe.
14. Sehmer D, Marti L, Wolff K, Hetzer FH: *Midterm results after perineal stapled prolapse resection for external rectal prolapse*. Dis Colon Rectum, 2013; 56(1):91-6. doi: 10.1097/DCR.0b013e31826cbbea.
15. Tschuor C, Limani P, Nocito A, Dindo D, Clavien P-A, Hahnloser D: *Perineal stapled prolapse resection for externalrectal prolapse: is it worthwhile*. Tech Coloproctol, 2013; 17(5):537-40. doi: 10.1007/s10151-013-1009-8.
16. Watkins BP, Landercasper J, Belzer GE, et al.: *Long-term follow-up of the modified Delorme procedure for rectal prolapse*. Arch Surg, 2003; 138(5):498-502; discussion 502-3.
17. Cirocco WC: *The Altemeier procedure for rectal prolapse: An operation for all ages*. Dis Colon Rectum, 2010; 53(12):1618-23. doi: 10.1007/DCR.0b013e3181f22cef.
18. Boccasanta P, Venturi M, Barbieri S, Roviato G: *Impact of new technologies on the clinical and functional outcome of Altemeier's procedure: A randomized controlled trial*. Dis Colon Rectum, 2006; 49(5):652-60.
19. Wijffels N, Cunningham C, Dixon A, et al.: *Laparoscopic anterior rectopexy for external rectal prolapse is safe and effective in the elderly. Does this make perineal procedures obsolete?* Colorectal Dis, 2011;13(5):561-66. doi: 10.1111/j.1463-1318.2010.02242.x.

READ-ONLY
PRINTING PROHIBITED