

Comparison between two perineal procedures for treatment of rectal prolaps

Ahmed Mohamed Abozid, Nabila Mohamed A. Shams, , Yahia Hassan Zayed, Sayid Mostafa

Surgical department, faculty of medicine for girls, Al Azhar university

Abstracts

The optimal surgical procedures for the management of rectal prolapse is still under debate so comparison between two operations were done in our series. Eighteen patients with complete rectal prolaps were treated surgically through the perineum they were divided into two groups. First group were treated by recto-segmoidectomy and levatroplasty to fortify the pelvic floor, the second group were treated by rectopexy using prolene mesh and levetroplasty to fortify the pelvic floor, the mesh was inserted between the rectum and sacrum and fixed through perineal incision. The recurrence rate in group II was less than group I (11% and 33,3% respectively), while the improvement of incontinence was (83.3% and 71.4% respectively) in both groups. There was no significant difference in hospital stay among both groups. Also there were no other cases of postoperative complications such as anastomotic leak or stricture, affection of the bladder dysfunction in both groups.

Aim of work

The aim of this work was to compare the short-term outcome of two different perineal operative procedures in patients with full thickness rectal prolaps.

Introduction

Complete full thickness rectal prolapse is a distressing condition for the patient. The main objective purposes of treatment are, first to carry out a procedure that safely correct prolapse with minimal morbidity and no mortality, and secondly to improve the associated incontinence and underlying defecatory disorders. Continence restoration is dependent upon restoring a positive gradient between sphincter and rectal pressure. Many patients are constipated and this play a significant role in the recurrence of prolapse (Bartolo,1996)

It became evident that the receptors of fullness sensation in the rectum are in the pelvic floor muscle rather than in the rectal wall itself (Goligher,1980).

So fortifying the pelvic floor by narrowing it around the rectum is a mandatory step in the operation. This pelvic floor consists of the two levator ani muscles including its different parts (i.e. puborectalis, pubococcygeus and iliococcygeus) ,both coccygeus muscles and the external sphincter ani.

Important factors in the production of prolapse: - 1) Patients with abnormally deep rectovaginal and rectovesical pouch of peritoneum. Those patients are at particular risk. However it is not clear whether a deep pouch associated with rectal prolapse is congenital or is due to childbirth (Kaven et al., 2000). 2) Idiopathic intussusception of the upper rectum. Circular invagination of the proximal rectal wall

Comparison between two perineal procedures

may occur during defecation and may remain within the rectum (intra rectal intussusception), it may reach the anal canal occluding it (intra anal intussusception) or extend beyond the anal opening (rectal prolapse). In all cases the intussusceptum occupies the lumen may cause a sense of incomplete emptying, which lead to further straining and progress of the condition (Stoker et al., 2000). 3) Most of complete prolapse will show remarkable weak and atonic anal sphincter and levator ani, it is matter of dispute whether this state of affairs is the cause or an effect of the prolapse (Goligher, 1980). 4) Anatomical defects include redundant sigmoid colon, loss of fixity of rectum to sacrum, deep cul-de-sac, diastases of the levator ani and patulous anal sphincter all are noticed as a cause of rectal prolapse (Madoff et al, 1992).

The surgical treatment of rectal prolapse is a matter of debate and there is still no consensus on the operation of choice. Recurrence rate have been the standard for judging prolapse operation, but recently emphasis has been placed on functional results (Agachan et al, 1997)

Although abdominal repair has been thought to be associated with better results than perineal repairs; but lower operative risk and quicker recovery, minimal to no postoperative pain and well tolerated to diet without waiting for ileus resolution may favor perineal repair, particularly in elderly poor risk condition. Virtually any type of anaesthesia can be used for perineal procedures, including local if necessary (Agachan et al, 1997 and Williams, 1992)

Material and methods

Eighteen patients with complete (full thickness) rectal prolapse treated between 1996 and early 2001 by two

types of perineal procedures. They were divided into two groups, group I (9 patients) were treated by rectosegm - oidectomy and levatroplasty to fortify the pelvic floor, and group II (9 patients) were treated by perineal insertion of polypropylene (prolene) mesh between rectum and sacrum and levatroplasty to fortify the pelvic floor. Pre and postoperative full history, physical examination including PR examination and investigations, specially barium study to all patients with lateral view to the pelvis to asses and measure the retro rectal space which is increased in such cases than normal cases were done.

Preoperative preparation of the colon was done as usual.

Surgical procedures

1. Rectosegmoidectomy was done with the patient in the exaggerated lithotomy position and under general or regional anaesthesia and muscle relaxant. The rectum is prolapsed and the outer cylinder of bowel is divided approximately 2 cm to 2.5 cm proximal to the dentate line. The inner cylinder of rectum and sigmoid are placed on traction, the mesenteric vessels are sequentially ligated and divided. When the proximal bowel can not pulled down any further, it is ready for division. At this point in the operation, levatroplasty can be done posterior to the rectum. The specimen is then amputated, taking care to prevent retraction of the proximal colon into the abdomen. The anastomosis is completed with suture of 0/2 vicril. The anastomosis is reduced into pelvis and finger is passed to make sure that the anastomotic line is sound. In some cases levatroplasty may done through posterior perineal incision, suturing of puborectalis behind rectum, then insertion of

suction drain and closure of perineal wound.

2. Perineal insertion of prolene mesh between sacrum and posterior rectal wall, through post-anal transverse incision 10-15 cm in length done under general or regional anaesthesia. While patient in Jack-knife position, dissection of the rectum up to sacral promontory. Three sutures were inserted in the presacral fascia as high as possible by 0/2 prolene fig (1). The prolene mesh was inserted by passing the three sutures at the middle of the mesh and sliding it up to sacral promontory and ligated fig (2) and (3). The rectum is fixed to mesh by 0/2 or 0/3 prolene sutures in the seromuscular layer fig(4). Levatrop - lasty done fig (5), then closure with drain.

Results

A total of 18 patients with complete rectal prolapse were treated by two different surgical operations through the perineum. Thirteen patients were women and 9 cases were men. The median age was 58 years (range 32 to 80 years). They were divided into 2 groups. The first group included 9 patients were treated by rectosegmoidectomy and levatrop lasty behind the rectum to

fortify the pelvic floor. The second group (9 patients), were treated by perineal insertion of prolene mesh behind the rectum and levatrop lasty. The two operations were compared regarding the following: -

1. Hospital stays.
2. Anastomotic leaks
3. Colorectal anastomotic stricture
4. Recurrence rate
5. Incidence of incontinence
6. Bladder dysfunction

Table 1 shows some post operative data which prove no significant difference between both groups in the time of hospital stay, anastomotic leaks, colorectal anastomotic stricture or dehiscence, and bladder dysfunction.

Table 2 shows the incidence of preoperative incontinence, which was 77.8% (7/9 patients) in group 1 and 66.7% (6/9 patients) in group II. It also shows the postoperative improvement, which was 71.4% and 83.3% in both groups respectively.

Table 3 shows the recurrence rate of rectal prolapse after both operations. In group I three cases of recurrence (33.3%) and in group II only one case (11%), the time of recurrence and management are shown also in the table.

Table 1:- shows the hospital stay and some P.O. complications.

	Group I	Group II
Preoperative hosp. stay	7-10 days median(8 days)	5-8 days median (7 days)
Postoperative hosp. stay	7-12 days median(10 days)	6-10 days median(8 days)
Anastomotic leaks	No cases	----
Colorectal anasto-motic stricture	No cases	----
Bladder dysfunction	No cases	No cases

Comparison between two perineal procedures

Table 2:- shows the incidence of incontinence

	Group I		Group II	
	No of patients	Percent	No of patients	Percent
Incidence of incontinence: -preoperative -postoperative	7 cases 2 cases	77.8%	6 cases one case	66.7%
No. Of cases improved	5 out of 7cases	71.4%	5 out of 6 cases	83.3%

Table 3: -shows the postoperative recurrence.

	Group I		Group II	
	No. of pt.	Percent	No. of pt.	Percent
Recurrence of rectal prolaps	3 cases	33.3%	One case	11%
Time of recurrence	Within the first 18 months		After 6 months	
Management	2 cases, rectosegmoidectomy & one refused reoperation.		Pt. Refused reoperation	

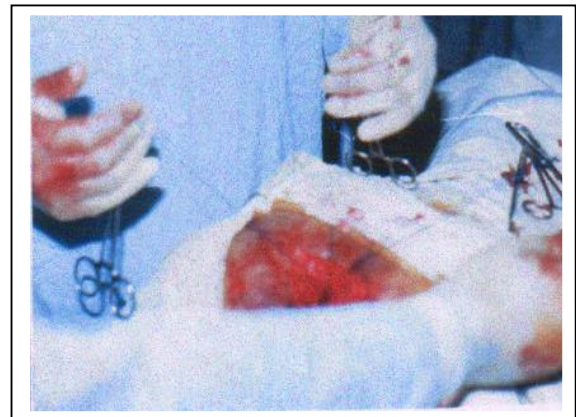
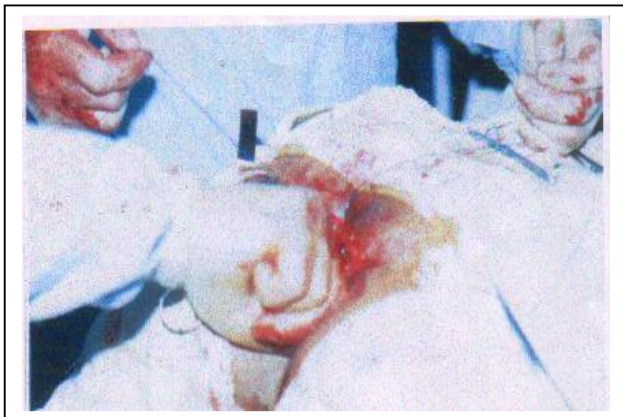


Fig - 1 :- 3 Sutures are inserted in pre-sacral fascia at different levels in concavity of sacrum as high as we can



Fig-2 :- The 3 sutures were passed through the middle of mesh.



Fig-3 :- The mesh is fixed to per-sacral fascia by 3- sutures after sliding it high up to level of promontory of sacrum.



Fig-4 :- Sero-muscular suture between rectum and mesh by No. 0/2 or 0/3 prolene.

Comparison between two perineal procedures



Fig-5 :- Levatoroplasty done by No. 0/2 prolene.

Discussion

Rectal prolapse is a distressing and difficult problem for both patient and clinician. Difficulties with patient communication and effects of coexisting medical conditions complicate outcome assessment. The variety of surgical operations used in the past testifies to the inability of any one technique to provide an adequate solution (Watts and Thomson, 2000). There are numerous techniques for management of rectal prolapse. The procedures can be broken down into basic types which include rectopexy, low anterior resection, perineal proctectomy or anal encirclement procedure (Mangot et al, 1997).

Rectal prolapse was one of the diseases in which surgical techniques were developed to correct an anatomical defects which are redundant sigmoid colon, loss of fixity to sacrum, deep cul-de-sac, diastases of levator ani muscles and patulous anal sphincter (Graham Williams, 1995). Golligher in 1989 showed that the incidence of recurrence rate after rectosegmoidectomy alone is 60%, and only 10% if it is associated with levatoroplasty to fortify the pelvic

floor. The high incidence of recurrence rate after rectosegmoidectomy is due to widening of the retro rectal space proved by barium study after operation. This much widening put the rectum and anal canal in one line and diastases of pelvic floor allowing rectum to prolapse again. In our theses plication of pelvic floor hiatus and increase of the angulation between rectum and anal canal, decreased the recurrence, and improved the incontinence. Moreover, increase of corrugations around anus and tone of sphincter is improved noticed by P.R examination.

In our series, perineal rectosegmoidectomy with levatoroplasty yielded a recurrence rate of 20% (3/15 patients). This rate is higher than rates reported by Keighley et al (1983), Andersen et al (1984), Holmstrom et al (1986), Roberts et al (1988), Agachan et al (1997), and kim et al (1999), which are from 0% to 10%, while the recurrence rate in our cases of perineal mesh insertion was 6.67% (1/15 patients) which coincides with these results. Recurrence of prolapse in group I may be due to inadequate mobilization and resection of the

redundant rectum and sigmoid colon. While in group II it may be due to improper fixation of the rectum to the mesh.

Among patients with rectal prolapse, anal control is defective in 40%-80% (Jorge and Wexner, 1993); this rate is similar to that noted in our study (77.8% and 66.7% in group I and II). The mechanism involved is still unclear and is probably multifactorial. Chronic stretching of the anal sphincter, inhibition of the internal sphincter with the recto anal inhibitory reflex, impairment of anorectal sensation, and denervation of the pelvic floor muscles are all factors that have been considered as attributing to loss of anal control in these patients (Agachan *et al*, 1997).

Prasad et al, in 1986, reported that 22 of 25 incontinent patients had significantly improved continence within 4 weeks of surgery. Ramanujan and Vencatesh, 1988 reported a 78% success rate. Agachan, 1997 observed 66% success rate with combined perineal rectosegmoidectomy and levatropasty. In our series we recorded 71.4% success rate with the same procedure, and 81.3% with perineal insertion of prolene mesh behind rectum.

Summary:- there is no ideal surgical procedure, that is appropriate for all patients with rectal prolapse. Elderly poor risk patients are best treated through perineal approach, it is well tolerated by these patients. The higher recurrence rate is offset by the minimal morbidity and faster recovery.

The choice procedure for the young, fit individual is more controversial. There is growing trend to offer these patients a perineal procedure because of ease and simplicity despite the higher recurrence rate. More over recent studies have documented substantial restoration of continence and improvement in constipation with

perineal procedure (Oliver et al, 1994, keighley *et al*,1983 and Andersen et al,1984). However young fit patients do tolerate an abdominal operation well and can be assured of lower recurrence and functional results particularly with respect to restoration of continence.

In our series, we operated upon 2 groups of patients 15 for each through perineal approach, the first is rectosegmoidectomy and levatropasty and the second is prolene mesh rectopexy and levatropasty. We compared the results of both operations and we found recurrence rate 33.3% and 11% and improvement of incontinence rate 71.4% and 83.3% respectively in both groups.

Conclusion:- perineal operations for rectal prolapse are safe for both fit and risk patients. Levatropasty should be a part of any procedure. The use of mesh rectopexy with levatropasty is superior to rectosegmoidectomy with levatropasty as regard recurrence rate and improvement of incontinence.

References

1. **Agachan F, Reissman P, Pfeifer J, et al:** comparison of three perineal procedures for treatment of rectal prolapse. Southern Med J 1997; 90:925-32
2. **Andersen JR, Wilsen BG, Parks TG:** complete Rec.Prol.The result of Ivalon sponge rectopexy. postgrad. med.j 1984; 70:229-232.
3. **Bartolo DC:** Rectal prolaps. Br J S 1996; 83:3-5
4. **Goligher JC:** Surgery of the anus rectum and colon. , (1st) edition, Bailliere tindall, London 1980; 10: 224-258.
5. **Holmstrom B, broden G, dolk A:** results of ripstein operation in the treatment of rectal prolapse and internal prociptentia. Dis. Colon rectum 1986; 29:845-848

Comparison between two perineal procedures

6. **Jorge JMN, Wexner SD:** etiology and management of fecal incontinence. *Dis Colon rectum* 1993; 36:77-79.
7. **Kaven B and Bernhard:** the depth of Douglas pouch in parous and nulliparous women without genital prolapse and in patients with genital prolapse. *Am J Obst Gyna* 2000; 182:450-454.
8. **Keighly MRB, fielding JA, Alexander J:** Results of marlex mesh rectopexy for rectal prolapse in 100 consecutive patients. *Br J surg* 1983;70:229-232
9. **Kim DS, Tsang CB, Wong WD, Lowry AC, Goldberg SM, and Madoff RD:** complete rectal prolapse: evolution of management and results. *Dis colon rectum* 1999;42:460-466.
10. **Madoff RD, Williams JG, Wong WD, Rothenburger DA, Goldberg SM.** Long term functional results of colon resection and rectopexy for overt rectal prolapse. *Am J Gastroent* 1992;87:101-104.
11. **Oliver GC, Vachon D, Eisenstat TE, et al:** Delorme's procedure for complete rectal prolapse in severely debilitated patients: an analysis of 41 cases. *Dis colon rectum* 1994; 37:461-467.
12. **Prasad ML, Pearl RK, Abcarian H, et al:** perineal proctectomy, posterior rectopexy and postanal levator repair for treatment of rectal prolapse. *Dis Colon Rectum* 1986; 29:547-552
13. **Ramanujam PS, Venkatesh KS:** perineal excision of rectal prolapse with posterior levator repair in elderly high risk patients. *Dis Colon Rectum* 1988; 31:704-706
14. **Roberts PL, Schoetz DJ, Collier JA, et al:** ripstein procedure. Lahey clinic experience. *Arch surgeon*.1988; 123:554-557
15. **Stoker J, Rociu E, Wiersma TJ, and Lameris JS:** Imaging of anorectal disease. *Br.J.S* 2000; 87:10-27
16. **Watts AMI and Thompson MR:** evaluation of Delorme's procedure as a treatment for full thickness rectal prolapse. *Journal of surgery* 2000;87:218-222.
17. **Williams JG, Gothenburger DA, Madoff RD, Goldberg SM.** Treatment of rectal prolapse in elderly by rectosigmoidectomy. *Dis Colon Rectum* 1994; 37:456-460.

مقارنة بين عمليتين لعلاج السقوط الشرجى الكامل عن طريق العجان

يعتبر السقوط الشرجى الكامل من الأمراض الغير مرضية للمريض والطبيب المعالج، وهو شائع بين النساء عن الرجال، واكثر الناس عرضة للمرض هم كبار السن. وقد تعددت عمليات تصليح السقوط الشرجى ما بين ما يجرى عن طريق البطن وأخرى عن طريق العجان

وعمليات البطن تتميز بنسبة ارتجاع قليلة نسبيا، بجانب أن عضلات أرضية الحوض يمكن تصليحها عن طريق البطن، ومن أهم عيوبها صعوبتها على المريض وامكانية حدوث ضرر للأعصاب المغذية لأعضاء الحوض ومنها الأعضاء التناسلية وحدث عدم القدرة على الانتصاب فى الرجال، بجانب المضاعفات الأخرى لفتح البطن. بينما تتميز عمليات العجان بأنها تتجنب فتح البطن بكل مشكلاته وان الآلام المصاحبة اقل بكثير، وكذلك سرعة عودة المريض لنشاطه. بينما تعد نسبة ارتجاع السقوط الشرجى أعلى من عمليات البطن.

فى هذا البحث تم مقارنة نتائج عمليتين لتصليح السقوط الشرجى عن طريق العجان فى 18 حالة قسمت إلى مجموعتين، الأولى 9 مرضى أجرى لهم عملية استئصال للشرج الساقط وتصليح لعضلات الحوض. والمجموعة الثانية 9 مرضى أجرى لهم عملية تثبيت للشرج فى عظام العصعص بواسطة تثبيت شبكة برولين فى عظام العصعص ثم تثبيت الشرج فيها ثم تصليح عضلات الحوض.

وكانت نتائج المجموعة الثانية مشجعة حيث أن نسبة الارتجاع كانت 11% وهذا يماثل عمليات التثبيت عن طريق البطن بينما فى المجموعة الأولى كانت 33.3%. كذلك التحسن فى القدرة على التحكم فى البراز والغازات كانت 83.3% فى المجموعة الثانية و 71.4% فى المجموعة الأولى من مجموع المرضى اللذين كانوا يعانون من هذه المشكلة قبل العملية.