

Laparoscopic Versus Open Rectopexy - Comparative Study of 35 Cases of Prolapsed Rectum

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Abstract

Background: Rectopexy is one of the accepted treatment options for rectal prolapse. We compare laparoscopic rectopexy to open rectopexy, and have used three techniques: mesh, suture, and resection.

Methods: From 2006 to 2015, 15 patients underwent open rectopexy (8 mesh rectopexy, 4 suture rectopexy and 3 suture rectopexy with resection). 20 patients underwent laparoscopic rectopexy (4 mesh rectopexy, 10 suture rectopexy and 6 suture rectopexy with resection).

Results: There was no postoperative mortality, and morbidity was similar in both groups, ranging from 11 to 19%. The mean follow-up was one year. There was no difference between the two groups for incontinence rate, which improved in more than 75% of patients who had impaired continence preoperatively. Suture rectopexy is cheaper than mesh rectopexy with similar hospital stay, the difference was in the cost of surgery. Postoperative constipation was observed in 1 patients after resection rectopexy, in 5 after suture rectopexy ($P < 0.01$ versus resection), and in 6 after mesh rectopexy ($P < 0.01$ versus resection).

Conclusions: Our results show that the addition of sigmoid resection to rectopexy is safe and could contribute to reduce the risk of severe constipation after operation. Mesh rectopexy confers no advantage over the sutured technique, which we now use as our fixation method of choice. Laparoscopic rectopexy associated with less blood loss, less post operative pain, shorter hospital stay and improve cosmesis than open rectopexy

I. Introduction

Complete rectal prolapse or procidentia is a circumferential, full thickness descent of rectum (may be sigmoid colon). Intussusception or infolding of rectum or rectosigmoid is the main responsible factor for prolapse rectum (1). Several operations have been proposed to correct rectal prolapse, which can be divided into transabdominal and perineal procedures. Perineal approaches have been reserved for elderly and unfit patient. These may include repair of the pelvic floor or anal sphincters with or without bowel resection. Depending on the type and extent of the operation these procedure tend to have higher recurrence rate reaching 38% (2, 3). Thus transabdominal procedure predominate in the surgical treatment of rectal prolapse because of their superior functional results particularly the improvement of continence. In addition, the recurrence rate associated with these procedure is lower than in perineal operations (4,5). Laparoscopic rectopexy has the same clinical and functional results as laparotomic rectopexy, but with a shorter postoperative hospital stay and lower costs. (6). The sequential aims of surgical treatment of prolapse are to eradicate the external prolapsing of the rectum. Improve continence and improve bowel function. Optimally, the goal should be to restore normal anatomic configuration and improve functional outcome.

Aims of study are to decide role of laparoscopic surgery in prolapse rectum with or without mesh and functional and clinical results of laparoscopic rectopexy versus open rectopexy. To compare the short and long term results and economic aspect of laparoscopic rectopexy versus open open rectopexy.

II. Material And Method

The study was designed to assess prospectively the clinical outcome, including functional results and changes in symptoms, of laparoscopic and laparotomic sutured rectopexy with or without resection as well as mesh rectopexy. For this we included 35 patients from 2006 to 2015 of which 15 patients underwent open rectopexy (8 mesh rectopexy, 4 suture rectopexy and 3 suture rectopexy with resection). 20 patient underwent laparoscopic rectopexy (4 mesh rectopexy, 10 suture rectopexy and 6 suture rectopexy with resection). Preoperative assessment included clinical examination and colonoscopy. Anorectal manometry was

performed to evaluate patients with constipation or faecal incontinence. All patients were given oral mechanical bowel preparation from 1 day before surgery and were on only plain liquids till the night before surgery.

III. Operative Procedure

In the operation theatre under general anaesthesia, patients were catheterised and placed in Trendelenberg position and after creating pneumoperitoneum five port placement done. Supraumbilical telescopic port (10 mm), right hand working port in right iliac fossa (10 mm), left hand working port in left iliac fossa (5 mm), little above the third as assistant port (5 mm), In hypogastrium 5 cm below umbilicus. The dissection was initiated by opening peritoneum on right sided peritoneum close to promontory below and parallel to superior rectal artery, lateral to rectum after visualising the right ureter and made it safe. Then dissecting mesorectum from presacral fascia in avascular plane to avoid injury to autonomic nerves, especially nervi erigentes and pre sacral venous plexus. Then same dissection was done on left side after identifying left ureter till pelvic floor. Anteriorly till base of prostate. In case of suture rectopexy rectum is pulled up and mesorectum is sutured to presacral fascia over sacral promontory using 2-0 prolene.

In mesh rectopexy, mesh is placed behind dissected rectum, mesh is fixed to presacral fascia over sacral promontory using 2-0 prolene, the rectum held in light tension and two limb of mesh were wrapped and sutured with two nonabsorbable sutures on either side of rectal serosa leaving at least one forth of anterior wall of rectum free. Drain introduced in pelvis and exteriorised through the left flank trocar site.

In resection redundant sigmoid usually of 10 to 30 cm was resected in order to avoid a pelvic sigmoideoceles with reduced peristalsis. In all patients the remaining sigmoid was like straight tube anastomosed to rectum end-to-end by a stapling in the laparoscopic ally-assisted operations and hand-sewn with single continuous seromuscular suture in the open operations.

In postoperative period the nasogastric tube was left in place until next morning, when the intake of liquid was started. Semisolids were started on second day and solid intake by 3rd -4th postoperative day. The patients were discharged from the hospital by 3rd to 5th day.

IV. Results

During our study 35 patients underwent rectopexy, out of which 20 were operated laparoscopic ally and 15 by open procedure. All the patients had overt prolapse of the rectum through the anus while straining. The gender ratio was 22 male to 13 females. The male to female ratio in the laparoscopic rectopexy group was 12 to 8, as compared with 10 to 5 in open rectopexy group. The ages ranged from 14 to 77 years for the entire group. However, laparoscopic patients were relatively younger (avg. Age -38.34 yrs) as compared to open rectopexy patients (avg. Age-44.2 yrs). Apart from mass per rectum 26 patient had faecal incontinence (14 in laparoscopic group and 12 in open rectopexy group). After one year follow up 89% patients had an improvement in their symptoms 3 patients (11%) reported no change of symptoms, while none of the patients reported worsening of incontinence. 9 patients with severe constipation underwent resection rectopexy 6 by laparoscopic ally and 3 by open surgery and constipation improve in all case. None of the laparoscopy rectopexy was converted to open. Length of incision in open rectopexy varied from 11cm to 22cm (average 17.5cm) Average blood loss in lap. Rectopexy was 75ml versus 195 ml in open. Average operating time in open surgery was less (45min) than laparoscopy. Lap rectopexy patient had uneventful follow up whereas one case in open surgery had post op pneumonitis and ARDS but no mortality in either group. Lap rectopexy patients were mobilized earlier, passed flatus and motion earlier than open. Oral nutrition was started more than one day earlier in lap. rectopexy patients. Analgesic requirement is about 1 day in lap. and about 5 days in open surgery. Average post op hospital stay after lap. Rectopexy was 4days (50% lesser than open). Rates of constipation, fecal incontinence, erectile dysfunction and urinary disturbance after one year of follow up was similar in lap and open. Constipation improved in all case of resection compare to four cases where new onset constipation occur in cases with mesh fixation. Urinary disturbance and erectile dysfunction was not seen in any case where lateral ligament preserved and in 43% cases where not preserved

V. Discussion

Conventionally the most popular surgery for this condition is by open abdominal surgery. Laparoscopic surgery for is technically feasible and with experience gives better results than open surgery. The extent of rectal mobilization in rectopexy is up to S2 posteriorly & base of prostate anteriorly, to prevent injury to parasympathetic innervation. The outcome of suture rectopexy is as good as mesh rectopexy in terms of recurrence and is cheaper than mesh rectopexy. In open surgery the lateral ligaments are cut close to rectum but in lap. Surgery rectal mobilization is done clearly visualizing & saving the presacral and parasympathetic nerves in a plane between mesorectal & parirectal pelvic fascia resulting in lower incidence of motility disorder, bladder and erectile dysfunction. Because of early return of bowel function, oral feeds are resumed on first post

operative day after lap. Rectopexy the post operative stay is less with shorter convalescence period. Resection rectopexy is indicated in those patients who have severe constipation & redundant sigmoid colon.

VI. Conclusion

Laparoscopic rectopexy after nerve sparing adequate rectal mobilization is safe with minimal morbidity. Patient has short hospital stay & return to work early. Suture rectopexy gives equal results as mesh rectopexy saving the cost of mesh & unnecessarily burying the foreign body with its possible complications. Laparoscopic rectopexy in comparison to open rectopexy gives better long term results with lower incidence of motility disorder, bladder & sexual dysfunction. The addition of sigmoid resection to laparoscopic rectopexy is safe and could contribute to reduce the risk of severe constipation after operation

References

- [1]. Theuerkauf Jr FJ, Beahrs OH, Hill JR: rectal prolapsed: Causation and surgical treatment . Ann surg 1970;171:819-835
- [2]. Karulf RE ,Madoff RA ,Goldberg SM (2001) Rectal prolapsed.curr Probl Surg 38:757-832
- [3]. Madiba TE ,Baig MK ,Wexner SD (2005) Surgical management of rectal prolapsed.Arch Surg 140:63-73
- [4]. Aitola PT, Hiltunen KM ,Matikainen MJ (1999) Functional results of operative treatment of rectal prolapse over an 11- year period: emphasis on transabdominal approach .Dis Colon Rectum 655-660
- [5]. Eu KW Seow –Choen F (1997) Functional problems in adult rectal prolapse and controversies in surgical treatment. Br J Surg 84 :904-911
- [6]. Boccasanta P, Venturi M, Reitano MC, Salamina G, Rosati R, Montorsi M, et al. Laparotomic vs. laparoscopic rectopexy in complete rectalprolapse. Dig Surg. 1999;16:415–9.
- [7]. Manash Ranjan Sahoo, Anil Kumar Thimmegowda, and Manoj S Gowda, A single centre comparative study of laparoscopic mesh rectopexy versus suture rectopexy ;J Minim Access Surg. 2014 Jan-Mar; 10(1): 18–22. doi: [10.4103/0972-9941.124456](https://doi.org/10.4103/0972-9941.124456)
- [8]. e. Johnson, a. stangeland, H.-o. Johannessen, e. carlsen; Resection Rectopexy for external Rectal prolapsed reduces constipation and anal incontinence Scandinavian Journal of Surgery 96: 56–61, 2007